

Student teachers learning to use Assessment for Learning in schools

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Abstract

Assessment for Learning (AfL) has been seen as a key aspect of teaching and learning for almost two decades, since the seminal review by Black and Wiliam (1998a). However, the research has largely been conducted with practising teachers rather than student teachers. This thesis attempts to fill this gap in relation to AfL, and illustrate that understanding how student teachers learn to use conceptual resources, such as AfL, can inform the work of all those who support the learning of teachers in training. The present study investigated how four secondary geography student teachers on a one year post-graduate training programme in England worked with ideas associated with AfL in their teaching during two school placements. The study asked how and why they used AfL or, as became evident, Assessment of Learning (AoL) in their teaching and what their use of AfL might tell us about their learning to teach in schools.

The thesis adopted a cultural-historical approach to investigate the actions in activities of the student teachers as they learnt to teach. The four students were followed over two terms in their two placement schools to gather data on their trajectories as learners and beginning teachers. Data collection methods were: (i) semi-structured interviews with the four students; interviews with their teacher mentors and other school staff; and (ii) regular post-lesson interviews with the student teachers, following observations of their teaching.

The cultural-historical approach led to examining AfL as a potential tool to be used by the student teachers in their teaching. Engeström's (1990, 1999, 2007) work on tool use and mediating artefacts was deployed to analyse the student teachers' use of AfL and what they saw as its purposes. The attention to purposes of tool use in the study was also informed by Hedegaard's (2012, 2014) work on motives in institutional practices, the activities in the practices and the actions taken by student teachers. This approach pointed to how the institutional motives and demands embedded in school practices influenced their learning. The study also paid attention to the identity work being done by the student teachers. This work was most apparent when the student teachers moved from their first to second placement school and worked with a different set of demands in institutional practices.

One early finding was that although school colleagues and student teachers were using the label AfL, closer examination revealed that they were actually using AoL. Key findings from the final analyses were as follows: there was considerable variation in how the geography specialist teacher mentors interpreted and used AfL; some mentors were strongly mediating the AfL/AoL expectations evident in the school inspection system in England; there was evidence of some strong and challenging mentoring, but it was not consistent across the experiences of the students; the students' own sense of the kind of teacher they wanted to become could be tracked in ways which revealed how they coped with the different school demands and what they saw as university expectations; the transition between placement schools was significant for the student teachers in ways that had not been anticipated by the design of the programme.

Following the student teachers as learners offered insights into their experiences in the black box of school placements during teacher education. Consequently, the implications for the design of teacher education programmes are a key part of the discussion stimulated by the findings. (Word count: 78, 597)

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Chapter 1: Introduction

The study set out to investigate how student teachers learn to use Assessment for Learning (AfL) during their school placements. These aspects are examined through following the motivated actions of four secondary geography student teachers enrolled in a one-year Post Graduate Certificate of Education (PGCE) programme in England. The study focused on their learning during their school placements in which they taught in two different schools. The research was a qualitative study in order to reveal the phenomena under examination. Framed within understandings offered by Vygotskian cultural-historical theory, the study investigated how and why student teachers used AfL as a pedagogical tool. Cultural-historical theory also allowed an examination of their learning in the broader context of their teaching in the cultural practices of different schools. It is hoped that the knowledge generated from this inquiry fills a gap in the literature on AfL by focusing on student teachers as they work in classrooms. In addition, by examining AfL as a pedagogical tool used by student teachers, the study informs teacher educators in universities and schools about how to better support student teachers' learning. The study also adds a little to the work on AfL in different subject domains by indicating how some teachers of geography interpret and enact AfL.

The chapter begins with an overview of the context that frames the study. This is followed by a discussion of gaps in previous research and how the study addresses these gaps. The theoretical and research approach is then outlined and the research questions are introduced. The chapter concludes with an overview of the remaining chapters of the thesis.

1.1 Context and background of study

The rationale for this study emanates from the researcher's position as a teacher educator working in geography education in Brunei and his intention to nurture informed teachers who can support student learning in classrooms. My premise is that formative assessment should be a central aspect of teaching and learning in schools. Currently, there is great emphasis on using good quality formative assessment to enable teachers to respond to pupils' learning needs. In 2008, Brunei implemented a new education system 'Sistem Pendidikan Negara Abad Ke-21', which is the 'National Education system for the 21st Century'. Under the new system, AfL has been identified as one of the core approaches to support pupil learning. The new change was timely as the Ministry and stakeholders (Ministry of Education, 2007) recognised the major pitfalls of the former education system which emphasised 'familiarising and drilling students with testing skills in preparation for high-stakes public examinations' (p. 7).

Coming from an exam-oriented society, I became fascinated by the idea that assessment could be used to support and promote pupil learning during my Masters degree in Aberdeen in 2007. It was there where I first came across terms such as formative assessment and AfL. As part of a taught module, I was exposed to Scotland's national programme — Assessment is for Learning (AiFL) — in which formative assessment was an important part of their educational assessment system (Hayward, 2007), and had several opportunities to observe teachers in schools implementing the ideas and strategies promoted by Black and Wiliam (1998a) in classrooms. With limited studies of educational assessment in my country and subject area, I started to investigate teachers' conceptions of assessment in Brunei. My small scale study with a group of geography teachers at a secondary school

in Brunei revealed the challenges in integrating AfL in classrooms under an exam-oriented education system (Tan, 2009).

My experience in Brunei as a teacher educator has also shown that engaging student teachers with AfL has been far from easy. In addition, I have been hampered by the fact that there is still little literature on AfL in relation to either initial teacher education (ITE) or geography education to assist me in understanding how and what student teachers are learning about AfL as they learn to teach in schools. These concerns have led me to study how student teachers learn to implement AfL in their lessons as well as how and in what ways they can be supported to do so during their school placements.

Instead of carrying out the study in Brunei, I decided to conduct the study in England because AfL has been implemented in schools for longer (Department for Children, Schools and Families, 2008) when compared to Brunei, where it was still in its pilot phases. By basing the study in the UK, I was able to interview school-based geography teachers who were arguably familiar with AfL and worked with student teachers. I followed student teachers as they engaged in school practices, in which AfL played a part of their professional learning. These settings enabled me to understand how schools and school geography departments interpreted AfL, identify the complexities of applying AfL in classrooms and how these aspects mediated the learning of the student teachers.

1.2 Gaps in previous research

The landmark review on formative assessment by Black and Wiliam (1998a) has led to a significant body of literature on formative assessment and AfL. A key message from their review was the potential to raise educational standards through the use of AfL. Conse-

quently, AfL has caught the attention of educational policy makers and become part of international educational policy discourse. Indeed, there has been a number of well-reported professional development initiatives aimed at investigating and improving teachers' use of AfL (Ayala et al., 2008; Black, Harrison, Lee, Marshall, & Wiliam, 2003; Furtak et al., 2008; Sato, Wei, & Darling-Hammond, 2008; Shavelson et al., 2008; Yin et al., 2008). However, these studies along with others (James et al., 2007; James & Pedder, 2006; Marshall & Drummond, 2006; Wylie & Lyon, 2015) also inform us that the implementation of these ideas in the classroom is far from simple. Although AfL appears to be established in many countries, tensions between AfL and Assessment of Learning (AoL), as well as large-scale high-stakes testing continues to inhibit the uptake and use of AfL in education systems in much of the Western (Birenbaum et al., 2015) and Asian world (Berry, 2011).

One consequence of the review was to reveal the variety of concepts which became associated with formative assessment such as convergent and divergent formative assessment (Torrance & Pryor, 1998); planned and interactive formative assessment (Cowie & Bell, 1999); pre-emptive formative assessment (Carless, 2011); and conformative, deformative and transformative assessment (Torrance, 2012). The proliferation of definitions is also found with regard to AfL, where a second generation definition was established in 2009 in the 3rd Conference on Assessment for Learning: ‘Assessment for Learning is part of everyday practice by students, teachers and peers that seeks, reflects upon and responds to information from dialogue, demonstration and observation in ways that enhance ongoing learning’ (Klenowski, 2009, p. 264).

The lack of consensus with the meanings and use of both of these terms in the literature has been raised in a critical review on formative assessment by Bennett (2011). Of rele-

vance in the study is the lack of agreement as to whether AfL and formative assessment are distinctively different (Black, Harrison, Lee, Marshall, & Wiliam, 2004; Swaffield, 2011) or can be used interchangeably (Gardner, 2006; James & Pedder, 2006). For the purpose of this research enquiry, the thesis uses the first generation definition of AfL from the Assessment Reform Group (ARG), which they defined as '[t]he process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there' (Broadfoot et al., 2002, pp. 2-3). This definition is employed in the analyses and discussions of how student teachers learn to use AfL in their teaching. However, keeping to this definition has proved to be an analytic challenge in the present study because research informants frequently used the term AfL when actually discussing AoL.

In relation to student teachers, several studies have attempted to explore their understandings and use of assessment during their teacher training (Brindley & Riga, 2009; Brown & Remesal, 2012; Eren, 2010; Taber et al., 2011; Wang, Kao, & Lin, 2010; Winterbottom et al., 2008). These studies clearly indicate that student teachers have varied conceptions of assessment, which can have an influence on their teaching (Brindley & Riga, 2009; Taber et al., 2011; Winterbottom et al., 2008). A major finding across these studies was the summative nature of student teachers' assessment practices during their teaching despite being exposed to recommended practices in formative assessment from the university, such as AfL. In particular, they point to the tensions between the formative aspects of AfL and the more summative aspects of AoL for student teachers during their placements in schools.

A central theme in the North American research on educational assessment and pre-service teachers is the preparation of assessment literate teachers. In a report by the National

Council on Teacher Quality in the USA, Greenberg and Walsh (2012) reported that only 6 out of 180 teacher preparation programs across 30 states in the USA were adequate in their coursework syllabi in preparing teacher candidates to be assessment literate, which carries implications for student teachers' understanding and use of assessment in schools. According to Greenberg and Walsh (2012), assessment literacy means '[a]n understanding of the taxonomy of assessment and a familiarity with the different types of classroom and standardised assessment' (p. 13). By helping student teachers develop their assessment literacy, they are better able to use a variety of assessment methods to assess and support pupil learning in classrooms (Deluca & Klinger, 2010; Popham, 2009). The emphasis on assessment literacy is related to student teachers' unpreparedness to perform pupil assessment (Chen, 2005; Mertler, 2004, 2009); failure to follow recommended practices from university coursework in schools (Campbell & Evans, 2000); and using assessment to engage pupils in their learning (Volante & Fazio, 2007). Researchers have also suggested that the lack of assessment preparation could lead student teachers to using unreliable assessments in schools (Graham, 2005; Maclellan, 2004).

My reading of these studies on conceptions of assessment and assessment literacy suggests what is often to be seen as on-going problem in teacher education, linking theory and practice (Korthagen, Loughran, & Russell, 2006). This problem is sometimes labelled as the 'two-worlds pitfall' problem (Feiman-Nemser & Bachmann, 1985, p. 63). These studies and commentaries inform on the challenges of applying what is learnt about assessment in the university to the classroom and illustrate the problem of transfer of learning in teacher education (Korthagen & Kassels, 1999).

The problem of transfer is often framed as acquiring knowledge in one setting and applying that knowledge in another setting. This problem relates to Greenberg and Walsh's (2012) concern that pre-service assessment courses remain disconnected from classroom practicalities. The study reported here differs from these studies on knowledge transfer in two different ways. Firstly, it focuses on student teachers as they move between different schools during the same ITE year rather than between the university and school placements. Secondly, attention is given to the context in which student teachers learn to use AfL, in terms of transitions between practices, rather than seeking to reveal whether successful transfer of learning has occurred.

Studies that have paid attention to school contexts suggest that the type of assessment activities student teachers encounter is dependent on how the school interprets and adopts assessment ideas from policy guidance (Hall & Harding, 2002; Tierney, 2006). The argument is that schools have different interpretations of AfL and for what purposes (Boyle & Charles, 2010); and have difficulty in translating the ideas of AfL in classroom teaching (James & Pedder, 2006; Marshall & Drummond, 2006). Similarly, different subject departments have different assessment approaches and values embedded in how they use AfL (Bennett, 2015; Bills & Husbands, 2005; Brooks & Fancourt, 2012; Cowie & Bell, 1999).

In the education literature, the use of formative assessment strategies, which include the use of questioning, feedback, sharing criteria and self-assessment (Black et al. 2003, p. 30) have been promoted as classroom strategies to help pupils learn. However, Hodgen and Marshall (2005) questioned the generalisability of the recommended formative assessment strategies reported by Black et al. 2003 and how they could be used across different subjects. As I discuss in Chapter 2, there are debates around the generalisability of AfL strate-

gies across subject domains. The present thesis is the first study to examine how AfL is used in teaching secondary geography from the perspective of student teachers and in doing so, offers some limited insights into how some geography teachers interpret and employ AfL.

Within most ITE programmes, teacher mentors play a pivotal role in supporting student teachers' learning in schools by providing learning opportunities, which in turn shape the outcomes of their learning as well as opportunities to learn (Clarke, Triggs, & Nielsen, 2013; Hobson & Malderez, 2013; Thompson, Hagenah, Lohwasser, & Laxton, 2015; Zeichner, 2002). However, very few studies have directly examined how student teachers' use of AfL as a pedagogical tool can be supported by their teacher mentors. Researchers have highlighted the challenges for student teachers in learning to use assessment to help pupils learn when discussions on assessment with teacher mentors focused on summative rather than formative purposes (Butterfield, Williams, & Marr, 1999). The researchers reported that discussions on assessment was often simplified to marking. Butterfield et al. (1999) raised concerns over how accountability demands in schools can also mediate teacher mentors' use of assessment so that focus is summative rather than formative. Research by Geen, Bassett, and Douglas (2001) reported that teacher mentors' feedback on student teachers' use of assessment focused heavily on whether pupils had the right responses to answers in classrooms and confirming that pupils have understood what they had learnt. There was less emphasis on how assessment could be used used to help pupils learn. Both of these studies reported the limited feedback given to student teachers on how the use of assessment could be used to inform the planning of subsequent lessons and pupil learning.

These studies suggest how teacher mentors' interpretations and use of AfL, as well as the type of support and feedback given to their student teachers, can mediate student teachers' learning to use AfL in schools. Unless student teachers are supported in schools to interpret and see the purposes of assessment practices, Graham (2005) warned that student teachers 'seem doomed to … replicate more traditional, unexamined assessment practices … [and] are more likely to succumb to their apprenticeships of observation, which often equates assessment with tests' (p. 619). In seeking to reveal how student teachers learn to use AfL as a pedagogical tool while in school, the present study is also able to point to how feedback from teacher mentors mediated their understandings and use of AfL in their teaching, revealing how external sources of influences can come to shape student teachers' use of AfL.

One of the most extensive pieces of research that is closest to the present study was a four-year longitudinal study carried out in the USA that examined novice teachers' motivations to learn assessment tools and practices in the multiple settings of university and schools (Nolen, Horn, Ward, & Childers, 2011). The study focused on assessment practices more generally than AfL. Taking an ecological approach, the researchers were interested on how novice teachers appropriated and negotiated these assessment tools as they crossed boundaries between university and schools. As the novice teachers crossed these boundaries, the researchers reported that the novices encountered different learning communities (Lave & Wenger, 1991) in which they positioned themselves and were positioned by others, carrying implications for how assessment tools were negotiated. Different schools and departments had local meanings attached to these assessment tools and were subjected to con-

stant negotiations over the use and meanings of assessment in multiple settings which included external examination boards and families.

The study highlighted the importance of student teachers' personal agency when negotiating aspects of assessment in schools. Not all student teachers chose to adopt promoted school methods of assessment; some resisted or chose to combine methods in different ways. Student teachers lost opportunities for learning when they chose to appropriate assessment methods in order to please their mentors. Their study usefully points to the importance of examining the tensions between the individual and environment, which the present study attempts to achieve. The present study, however, does not examine the learning of student teachers as they make the transition from the university to placement schools. Instead it follows student teachers as learners of AfL across different schools.

The studies presented in this section demonstrate the different levels and sources of influence that can impact student teachers' learning of AfL in schools. These layers of influence have included national policy level, schools and departmental practices, teacher mentors' interpretations as well as how student teachers respond to these tensions in their teaching. Only the study by Nolen et al. (2011) has attempted to examine the complexity of their learning to use assessment through attention to these different layers. However, we still know little about how student teachers may or may not learn to use AfL in increasingly informed ways while they are in schools.

By examining if and how student teachers learn to use AfL in their teaching in schools and through the approach taken, the present study responds to calls for studying student teachers' learning in complex settings (Grossman & McDonald, 2008; Valencia, Martin, Place, & Grossman, 2009; Wideen, Mayer-Smith, & Moon, 1998) and for a better understanding

of their learning of assessment practices in schools (Darling-Hammond, Bransford, LePage, & National, 2005; Hill, Cowie, Gilmore, & Smith, 2010; Mansell & James, 2009; Nolen et al., 2011). As I will argue throughout the thesis, examining these aspects and how these layers of influence can mediate student teachers' learning has the potential to offer insights for teacher education and research on AfL that are lacking in many of the studies mentioned. To understand how student teachers made sense of AfL as a pedagogical tool during their school placements, I needed a theoretical orientation that would enable me to examine their learning trajectories across time and space.

1.3 Theoretical approach

The discussion so far points to the variation in how AfL is conceptualised and understood by both student teachers and teachers. For the thesis, I have chosen to adopt a cultural-historical approach and use the analytical resources it offers to examine how student teachers made sense of and used AfL as a pedagogical tool during their school placements. In the following, I briefly describe the origins of this approach and its relevance to the study to identify how it can potentially shed new light on how student teachers learn to use AfL.

Cultural-historical theory draws attention to how individuals learn through using tools while participating in societal practice (Chaiklin, 2001) and how knowledge is used in material practices (Säljö, 2009). The origins of the theoretical approach to learning lie in Vygotsky's work, which showed how what he called consciousness is revealed in how we interpret tasks and work with cultural tools on those tasks. In studying learning, the approach recognises that human learning occurs through mediation, which, in the Vygotskian sense, involves learners being brought into the use of cultural tools, such as ideas and artefacts, in ways that are valued in the culture (Ellis, Edwards, & Smagorinsky, 2010).

The study is therefore grounded in the argument that student teachers' learning to use AfL should be examined as part of what they understand and do in their classroom teaching in relation to assessment. Therefore, when attempting to identify their learning over time, this approach means that the researcher follows the learner as they use tools, i.e. take actions, in everyday pedagogical activities. With the focus on individuals as learners, this approach enables an examination of how learners engage with demands presented in activities, which are shaped by what is valued in institutional practices (Hedegaard & Edwards, 2014). The approach allows researchers to study how student teachers work with or create demands when using AfL in their teaching, and how the key individuals in schools, by mediating what mattered in the schools practices, enabled or constrained their use of AfL to support pupil learning. The approach also recognises that learning requires the opportunity to act agentically to respond to demands and consequently reposition oneself in the practices in which one is participating (Hedegaard & Edwards, 2014).

1.4 Research questions

The main purpose of this study was to investigate how student teachers learn to use AfL in schools by analysing how AfL is used and for what purposes, and to consider the implications for their learning as they move across different institutional practices, meeting different demands in relation to AfL. However, as I shall explain in Chapter 3, examining the data from the student teachers' first school placement revealed wider implications for the design of teacher education programmes and this wider perspective is reflected in the second research question. The two final research questions arising from the aim of the study are framed from a cultural-historical perspective on learning and are as follows:

1. How and why do student teachers use AfL in teaching secondary geography?
2. What does an examination of the use of AfL as a pedagogical tool reveal about student teachers' learning in schools?

The research questions position student teachers as learners of AfL while they are learning to teach secondary geography in schools. The questions focus on their rationales for using AfL in their teaching and how schools informed and shaped their understanding and use of AfL. In doing so, the study attempts to add to the limited amount of literature in two areas. Firstly, how student teachers learn to use AfL as a pedagogical tool while teaching. Secondly, the implications for their learning to use a specific pedagogical tool when they move across practice boundaries to new school placements. In addition, there is the potential to add to the literature on AfL in geography teaching through some limited insights into how their mentors interpreted and used AfL.

1.5 Outline of the thesis

The second chapter reviews the literature relevant to the two research questions. The first section reviews studies and approaches that have investigated the development of professional knowledge of student teachers as they learn to teach in schools. The second section explains the cultural-historical approach to learning taken in the study and discusses the analytical heuristic and tools that are used to orientate the study. One is a multi-level analytic heuristic developed by Hedegaard (2012, 2014), framed from a Vygotskian perspective, that is employed in the study as an orientating framework to examining the multi-layered dimensions of learning to teach. The third section describes the Vygotksian approach in teacher education and discusses how the approach and key analytical concepts may help address some of the problems inherent in examining learning to teach. The fourth section

relates the literature on AfL to the research questions and identifies how the present study attempts to advance our current understandings on learning how to teach and how student teachers learn to use AfL.

The third chapter describes how the cultural-historical perspective and Hedegaard's (2014) analytic heuristic provided a framing for the present study's research design. It then describes the research context which is then followed by a report of the pilot study conducted in June 2012. The report describes how the findings contributed to the design and methods used in the main study. I then proceed to describe how participants and schools were recruited for the main study and the trade-offs in the design that were made. Details on the procedures of data collection and the schedule of how the data was collected are presented. The data analysis section includes the procedures and stages of the data analysis process. Included in the chapter is a discussion on why a revised research question became necessary. Steps in achieving credibility of the study are detailed and the chapter concludes with a discussion of the ethical issues surrounding the study.

The fourth chapter in the thesis addresses the first research question, ‘How and why do student teachers use AfL in teaching in secondary geography?’. The research question focuses on the activity setting and person planes of analysis, illustrating student teachers' actions in activities. Engeström's (1990, 1999, 2007) typology of tools is the primary analytical resource in analysing how and why they used AfL in their teaching. The chapter describes the learning trajectories of all four student teachers on a case by case basis. There are two main sections in describing each of their learning trajectories in accordance with their school placements. For each case, their learning trajectories are described from their first school placement and followed by their transition to their second school placement. In

each of the cases, I start by describing their rationales for using AfL and the demands placed on them for using AfL in their teaching. This is then followed by exemplars of their reflections on using AfL in their lessons, analyses of their purposes for using AfL and how their mentors mediated the demands for using AfL in their lessons. The structure for describing their second school placements follows a similar structure and has an added element of comparing the different school practices and how they re-orientated themselves to the new demands and practices. Examining the demands made on them in using AfL helps establish the relationship and implications for how the student teachers' made sense of and used AfL as a pedagogical tool. The chapter includes examining the dynamic nature of the relationship between student teachers' agency and their environment in their learning to use AfL in their teaching.

The fifth chapter corresponds to the second research question, ‘What does an examination of AfL as a pedagogical tool reveal about student teachers' learning in schools?’. The chapter makes connections to student teachers' learning by looking across their learning trajectories in both school placements and provides a way of discussing the learning dialectic revealed in Hedegaard's (2014) planes of analysis. The dialectic of all the four planes will be employed to reveal the dialectic between the demands of policy as mediated by each school and the students teachers' own sense making in relation to AfL. The challenges faced by student teachers in their figured worlds (Holland et al., 1998) as well as the challenges from the transitions (Beach, 1999) between different school practices are detailed. It also discusses how public meanings in the practices of the schools are mediated by mentors as well as how teacher mentors are positioned in these practices and the impact on

student teachers' learning. The dialectic between agency and demands is highlighted in capturing student teachers' learning.

The final chapter has five sections. The first section addresses how I answered the two research questions. This is then followed by the implications for practice and teacher education. The third section discusses the contribution of the study to cultural historical theory and AfL. The methodological reflections, limitations of the study and directions for further research are discussed in the fourth section. The chapter closes with a reflection on conducting the study.

Chapter 2: Literature review

This chapter introduces the key theoretical concepts that have informed the thesis. This literature review, is guided by the two research questions, includes four sections and a short summary. The first section reviews current and relevant research on teacher education. The second section examines the literature that underpins the cultural-historical approach taken, along with the key conceptual and analytical constructs that are used in orienting the study. The third section describes the cultural-historical approach to understanding teacher education, discusses the analytical concepts that may help overcome some of the problems inherent in many versions of teacher education, and examines mentoring from a cultural-historical perspective. The fourth section problematises the meaning and use of AfL in education and the implications for student teachers' learning about AfL in schools. The final section summarises the chapter.

2.1 Student teachers' professional learning in schools

An exhaustive review of the research and approaches to studying teacher education is beyond the scope of the thesis. The review presented in this section focuses on studies that have examined the process of learning to teach and the development of professional knowledge in schools and that have directly informed the development of the present thesis. During my discussion of these studies, I direct my attention to findings that relate to the development of beginning teachers. In the concluding section, I point to how a cultural-historical approach to teacher education can help address some of the difficulties encountered in these studies.

2.1.1 Developing as a teacher in school-based teacher education

The present study is based in an English PGCE programme, which placed student teachers in English schools for their professional learning throughout a one-year course. Since the late 1980s and most extensively since the early 1990s, schools have played a strong part in the professional development of English and Welsh student teachers. Studies undertaken as that system of ITE was being formed have therefore been influential in shaping my understanding of the histories of the practices the student teachers in the present study entered. Key researchers in that period included Calderhead (Calderhead, 1987; Calderhead & Shorrock, 1997) and Furlong and Maynard (Furlong & Maynard, 1995; Maynard, 1996; Maynard & Furlong, 1995). These studies conceptualised the nature of student teachers' professional development and how practising teachers as mentors can contribute to that development.

One of Calderhead's studies (Calderhead, 1987) involved following a group of ten primary student teachers during a one-term field experience in a PGCE programme in England. The study examined the process of their professional learning and the role of reflection and evaluation of classroom experiences in their learning. Data were collected through semi-structured interviews, lesson observations and post-lesson interviews. These interviews included individuals involved with supporting their learning in schools as well as post-lesson discussions between the student teachers, college tutors and supervising teachers.

In his study, Calderhead (1987) identified three phases as student teachers learnt to teach: ‘fitting in’, ‘passing the test’, and ‘exploring’ (pp. 269-278). These phases occurred in the beginning, middle and end of the major one-term field placement. The first stage marked a phase of survival for student teachers; during this stage, they exhibited and adopted behav-

iours of their supervising teachers. It involved responding to expectations in order to be able to fit into school and teacher mentors' routines, even though they did not necessarily agree with them.

By the second stage, student teachers became more conscious about their performance as a beginning teacher. This stage was characterised as a phase of seeking approval for their performance through demonstrating their competence in attuning to the expectations in schools. It was only in the final stages when student teachers were able to begin experimenting in their teaching. Although student teachers were able to explore their teaching, they were not developing into responsive teachers who were helping pupils to learn at this stage. Their reflections focused on their own accomplishments and revealed their concerns about being assessed. Even when student teachers were beginning to explore different possibilities for teaching, their reflections were often narrow, and there was little attention given to pupil learning in their planning and implementation of plans.

In another study, Furlong and Maynard (1995) investigated the professional learning of 11 primary student teachers' professional learning in a one-year PGCE programme in Wales. The researchers focused on student teachers' learning in the school-based component of the programme. Data were collected through observations, interviews and group discussions with student teachers and supervising teachers as well as documentary evidence from student teachers. At the time of their study, there were three terms in the PGCE programme. During the first teaching practice, most of the teacher mentors would remain in the classroom working alongside the student; during the second practice, teachers would progressively withdraw, giving the student teachers increasing responsibility for the whole

class. Their study focused on the teaching practicum during the second and third terms when student teachers had sustained periods of classroom teaching in one school.

Like Calderhead's (1987) research, Furlong and Maynard's (1995) study revealed the broad stages of development through which student teachers typically move in their professional learning and development in the PGCE year. They identified five stages: ‘early idealism’, ‘personal survival’, ‘dealing with difficulties’, ‘hitting a plateau’ and ‘moving on’ (Furlong & Maynard, 1995, pp. 73-97). They concluded that student teachers' ability to develop appropriate forms of practical knowledge and the speed of their progress through the different stages were largely influenced by personal and contextual factors. Personal factors included the beliefs and attitudes student teachers held about their teaching and how these interacted with the beliefs and attitudes of the university tutor and the mentor. Contextual factors included teacher mentors' ability to articulate their knowledge of teaching, how they supported and challenged the student teachers, and whether they would give student teachers ownership of their classes. These findings inform us that student teachers' beliefs may change in different contexts. Where Furlong and Maynard’s (1995) study differs from the present study is that their study did not examine the actions of student teachers and their use of tools.

Neither of these sets of studies took a strong theoretical stance in orienting their analyses, and neither focused on how student teachers learn. However, they did point towards how the changing beliefs of student teachers as they learn to teach will impact their classroom teaching. These two studies are particularly significant as they suggest that student teachers' progress in their school placements can be seen in terms of broad stages of development. Although Furlong and Maynard (1995) had outlined the stages of learning in their

work, they clarified that they were only broad stages to describe their experience of learning to teach and that student teachers' learning in schools were far from linear than what the stages may indicate. They stated:

> We do not suggest that student teachers simply progress along the narrow linear pathway, moving from stage to stage. This is far from the case. Our research indicates that development from “novice” to “professional educator” is dependent on the interaction between individual students, their teacher education program, and the school context in which they undertake practice experience. As a result, a student’s learning is complex, erratic and in one sense unique to them as an individual. (Furlong & Maynard, 1995, p.70)

The notion of student teachers' proceeding through stages of learning in schools was challenged by the Developing Expertise of Beginning Teachers (DEBT) project in England during the early 2000s. Two sets of analysis from the DEBT focused on the learning of secondary school student teachers during the ITE year. One of the studies (Burn, Hagger, Mutton & Everton, 2000) reported that student teachers were able to develop concerns about the learning of their pupils at an early stage of the ITE year rather than focusing on fitting in and managing their personal survival (Calderhead, 1987; Furlong & Maynard, 1995). In another study, the researchers (Burn, Hagger, Mutton & Everton, 2003) reported that student teachers at the end of the ITE year did not reach the ‘hitting a plateau’ and ‘moving on’ stage as described by Furlong and Maynard (1995, pp. 89-92). Instead, Burn et al. (2003) observed a decline in progression on student teachers' learning and motivation towards the end of the ITE year. The two studies from DEBT (Burn et al., 2000; 2003) in-

form us that student teachers' learning during the ITE year is far from linear. Nevertheless, the stages of development by Calderhead (1987) and Furlong and Maynard (1995) provide a useful way to describe the learning trajectories of the student teachers in the thesis and the kinds of demands that they were working on in two different schools. As I will indicate in Chapters 4 ad 5, some of the stages indicated by both Calderhead (1987) and Furlong and Maynard (1995) were evident in the student teachers' learning trajectories. For example, the need to fit in to the practices of the school still persists and one student teacher revisited these stages as a result from moving to a different school (Furlong & Maynard, 1995, p. 98). The analyses will also reveal that student teachers' learning trajectories were far from smooth and they varied considerably amongst the student teachers.

2.1.2 Learning to use assessment practices across different social worlds

The four-year case-based ethnographical study that Nolen et al. (2011) carried out in the USA has already been mentioned in Chapter 1. Framed from what they call a situative view of learning to teach, the researchers investigated the learning of eight novice teachers' motivations for taking up or rejecting the assessment tools and ways of using them that were found in the social worlds of the schools as they learnt to teach. They used the concept of 'figured worlds' that Holland et al. (1998) developed and which will be detailed later in this chapter. In Nolen et al.'s (2011) study, data were collected through observations, interviews following the observations, field notes and interviews with other members of each setting such as peers, university instructors, teaching colleagues and supervisors. Examining novice teachers' actions in the figured worlds of the schools, the researchers traced their learning and development over time across different figured worlds. These included the TEPworld (university), Fieldworld (schools), and Realworld (teaching

jobs). As part of the university course, novice teachers in their study took a ten-week course on assessment tailored to their subject area. Student teachers in the present study spent much less time dedicated to the topic of AfL and were only able to focus on learning to use AfL while they were in schools. For the purpose of the review, I mainly highlight the findings related to the novice teachers' crossing of boundaries between the figured worlds of the university and schools and the broader relevance of their study to the thesis.

Novice teachers' movement across different figured worlds had implications for their positionality and how the use of assessment tools were negotiated. For novice teachers in Fieldworlds, the temporal and subordinated positions described by the researchers, inhibited the novice teachers' ability to negotiate and construct meaning with the assessment tools used in schools. The researchers argued that if negotiations over assessment tools occurred, they involved the novice teachers in agreeing to the requests of their cooperating teachers and pleasing their university supervisors.

The researchers suggested that assessment functioned as ‘boundary objects’ (Nolen et al., 2011, p. 90) and had different meanings and purposes attached to them in different contexts. What was promoted in the TEPworld was not easily translated and used in Fieldworld and Realworld. It was only when novice teachers entered their Realworlds as early career teachers that they were able to negotiate and work with these meanings in negotiations with administrators, other teachers and parents. The argument was that these teachers now had responsibilities and were held accountable in their schools. The researchers suggest that when in Fieldworlds, the novice teachers had limited room to make sense of the assessment tools and need to be supported in understanding its meanings and use while in

Fieldworlds. This study has highlighted the potential challenges in student teachers' learning to use AfL in the present study.

The study also indicated the importance of novice teachers' personal agency when negotiating assessment practices in Realworlds. Not all novice teachers chose to adopt the ways of doing assessment that were promoted in school practices once they were teachers; some resisted or chose to combine approaches in innovative ways. The study suggested that unless novice teachers in Fieldworlds are able to negotiate the public meanings of the assessment tools, it is very difficult for them construct and make sense of the uses of these tools in contexts in which they are positioned as novice teachers.

The three studies I have outlined call attention to the broad range of issues in learning to teach in schools. They all reveal the need for student teachers to fit in to the norms of the school and the requests of their teacher mentors in order to survive their school placements. These findings therefore have implications for student teachers' learning and, in particular, how they learn to use assessment tools. They also all point to the important role of teacher mentors or cooperating teachers but do not focus in any great depth on how the teacher mentors are able to support student teachers' learning. This topic will be addressed in the present study.

The present study also differs from these three pieces of research because of its attention to transitions between schools. Two of the studies involved following the student teachers over time in schools, but the Furlong and Maynard (1995) and Nolen et al. (2011) studies did not address the implications of the transitions for student teachers' learning; neither did they examine the demands made on student teachers in these different practices. Furlong and Maynard's (1995) study provides important insights into the broad stages that student

teachers might go through in schools and the stages mentioned may be revisited. What the present study adds to these studies is an examination of the implications of their learning from these transitions across different contexts. While there are studies that have examined student teachers' learning across boundaries (Nolen et al., 2011; Tsui & Law, 2007) and longitudinal studies that have examined novice teachers' learning from teacher education to their first jobs as certified teachers (Grossman et al., 2000; Nolen et al., 2001; Smagorinsky, Cook, & Johnson, 2003), less is known about the implications for student teachers' learning as they move across different schools while they are still in their teacher education programmes. As I will illustrate in Chapters 4 and 5, these transitions were consequential (Beach, 1999) for learning to use AfL and their development as early career teachers.

To capture the complexity of learning to teach and how one learns to use pedagogical tools such as AfL in their teaching, a focus on the dialectic between the environment and individual is needed. As I will argue in the remaining sections of this chapter, cultural-historical theory and its approach to teacher education provides one solution to understanding how student teachers learn to teach as well as learn to use conceptual and material tools in schools. The cultural-historical perspective on teacher education has increasingly been developed and refined owing to publications such as the article 'A Vygotskian Perspective on Teacher Education' (van Huizen, van Oers, & Wubbels, 2005), the collection of papers in *Cultural-Historical Perspectives on Teacher Education and Development: Learning Teaching* (Ellis, Edwards, & Smagorinsky, 2010), and the recent book *Student teachers in School Practice: An Analysis of Learning Opportunities* (Douglas, 2014). These are important publications that present the key ideas and concepts of cultural-historical theory in

teacher education and serve as theoretical and methodological resources in analysing student teachers' learning and the design of ITE programmes. In the next section, I examine in some detail the key concepts within cultural-historical theory that have informed the present study. I then return to a cultural-historical account of teacher education in the section that follows after that.

2.2 Cultural-historical approaches to learning

The aim of this section is to delineate the theoretical stance taken in the research enquiry and what is meant by knowledge and practice in the present thesis. Cultural-historical, socio-cultural and cultural-historical activity theory (CHAT) are approaches to understanding learning that draw on Vygotsky's work on human learning through mediation (Ellis et al., 2010). Mediation, in the Vygotskian sense, involves learners being brought into the use of cultural tools, such as ideas and artefacts, in ways that are valued in the culture. There are slight differences in the emphases placed on tools in the three different lines that draw on Vygotsky. Socio-cultural theory focuses on how people learn and engage in situated practices and emphasises the use of language as a tool (Ellis et al., 2010). CHAT places emphasis on tool use in relation to ‘action or intervention in order to develop practice and sites of practice’ (Edwards & Daniels, 2004, p. 108) and focuses its analyses more on the collective use of tools rather than individual shifts in tool use (Ellis et al., 2010). Cultural-historical theory draws attention to how individuals learn through using tools while participating in societal practice (Chaiklin, 2001) and how knowledge is used in material practices (Säljö, 2009). As I will illustrate in these sections, cultural-historical theory provides a way of thinking about student teachers' learning across practices and how they learn to use AfL as a pedagogical tool.

2.2.1 Knowledge in practices

In identifying knowledge that is valued in professional work such as schools, I draw on Edwards's (2010a) definition of practices as 'historically formed, imbued with knowledge, freighted with emotion and shaped by the values and purposes of the institutions in which they are located' (p. 5). Individuals' actions in activities are informed by what they see as the purposes of the activity, and the purposes of activities are shaped by what is seen as important in the practices in which the activities are located. These purposes are usually derived from the knowledge and values that are embedded in their institutional practices. If we look at schools, geography teachers operate in different settings where they are engaged in activities. The activities can include organising a field trip, ensuring the safety of pupils, inducting new teachers in the school or conducting in-house professional development for teachers. People propel themselves forward in these activities to address what they see as the purposes of the activity. As such, there may be an emphasis on increasing the geography GCSE grades from the previous year, prompting an increased collective focus on tracking the progress of pupils' learning by the teachers. These actions that occur in activities in the geography department provide insight into its purposes and what is valued in these practices.

It follows that knowledge in practices arise in institutions, such as schools and the departments within them, and give shape to the activities that occur in them (Edwards, 2010a). Teaching takes place in socio-historical settings which change over time. They are shaped and reshaped by policies, initiatives, events, expectations and values. In other words, existing knowledge in practices leave traces of what is seen as valued in the past and are constantly evolving. As Edwards (2010a) explains, 'Practices are made and remade by the

people who work in them as they operate both with and against structural histories; and so are the identities of those who inhabit them' (p. 11). Practices, therefore, are collective, goal-oriented and historically and culturally situated in nature rather than pre-determined and simply awaiting for the learner to acquire the knowledge found in those practices (Edwards, 2010a). Conceptualising student teachers' learning to teach by examining the practices they participate in allows an exploration of how knowledge used is used in practices and what is valued in order to explain what shapes their actions in the practices they inhabit. In the thesis, the focus is on their actions in activities and on how they learn to use AfL in schools. Aspects of practices are further elaborated when I introduce Hedegaard's (2014) analytic heuristic in examining the complexities of learning to teach from a cultural-historical framing in the next section. A central aspect of knowledge in practices is that individuals are shaped by the practices they inhabit but are also capable of shaping and contributing to these practices.

2.2.2 Institutional practices

The thesis draws on Hedegaard's (2009) work on institutional practices and the purposes they serve in society. Her work focused on children's participation and development in different institutional contexts where the main institutions are school and home. A central thesis for her is the need to recognise how these institutional practices can come to contribute or restrict the development of the child. According to Hedegaard (2009), institutional practices are framed by societal traditions, and are characterised by 'communication and shared activities' (p. 72) among individuals in the institution. Such activities for Hedegaard include math lessons at school and breakfast time at home. Practices and the activities within them provide conditions in which children learn and develop through using the

tools in ways that the activities and practices expect. Hedegaard (2004) offers the following explanation:

> Differences in practices in different institutions give children different competence and a child's competence is evaluated differently in the different institutions because the practice here makes different demands on the child …. [and] through participating in institutional practices …. the child acquires capacities for conceptual and manual tool use and interpretation of artefacts. (pp. 26-27)

To examine how children learn and develop in the practices they participate in as they move between different institutional practices, Hedegaard has been developing and refining her analytic heuristic shown in Figure 2A as a way to examine the dynamics of children's learning and development within the possibilities for action available for them. There are four planes of analysis (Hedegaard, 2014) that outlines the processes and dynamics at work in each structure and I will discuss how they can be usefully applied to the present study.

Structure	**Process**	**Dynamic**
Society	Societal tradition- and value-demands	Societal conditions
Institution	Practice demands for type of participating	Value-laden goals/objectives/ motives
Activity Setting	Social situation demands on both child and others	Situated motivation/engagement/interests
Person	Reciprocal demands for concrete ways of participation	Motive orientation/intention

Figure 2A: Relations between demands and motives at different levels of perspectives. Adapted from "The significance of demands and motives across practices in children's learning and development: An analysis of learning in home and school," by Hedegaard, M., 2014, *Learning, Culture and Social Interaction*, *3*(3), 188-194.

Each row represents the analytic plane that might be focused on in a research study. At the same time, the analytic heuristic indicates how each plane of analysis is potentially connected, either through a coherence in the motives revealed at each plane, or in terms of conflict or differences in motives. When examining each plane of analysis, we see that the societal plane allows a focus on political discourses as they are represented, such as in policy documents. The next plane of analysis, institutional practices, carries the particular histories and intentions of an institution such as a family or school. These practices also carry demands in the sense that there are expectations of behaviour, competence and values in the ways in which participation in those practices is expected by others in the practice. At the plane of activity setting, one can identify particular activities, such as having breakfast or doing a maths task, and examine the activity to identify the motives that are apparent in it, such as sharing food and making sure everyone gets the food they want or completing the task accurately and quickly.

In order to examine these aspects of activities in the activity setting plane of analysis, attention also needs to be paid to the fourth plane of analysis, the person, and what exactly she or he does when engaging in the activity. When considering the learner's perspective, the activities in which the learner participates represent his or her potential social situation of development (SSD), offering possibilities for actions which may result in simply learning something new, or more than that, quite significantly reposition them as participants in the practices in which the activities are located (Hedegaard & Edwards, 2014). For example, a student teacher may learn a new technique for running a plenary session to check for pupil understandings, but if he or she simply focuses on the techniques, and does not see

how plenaries can be opportunities for (i) further pupil learning and (ii) for her, as a teacher, to reflect on what pupils know, in order to plan her next session, one cannot suggest that she has repositioned herself as teacher, but she might be on the way to doing so. This distinction between learning and development is relevant for how cultural-historical theory allows a focus on how tools are used and a way of understanding how and what student teachers are learning while placed in schools.

This framework is useful for the thesis as it examines how student teachers participate in the practices of the institutions (departments and schools) in which they are placed in. Schools have particular practices, mediated by societal traditions, which influence how student teachers engage and participate in the practices of the schools. The actions in the activities embedded in these practices can come to inform us of what is valued and what matters in these practices that is 'mediated through engagement in practices with others where culturally specific motives shape what is possible to accomplish' (Edwards & Daniels, 2012, p. 41). As we shall see in the later sections of the chapter, schools have different practices and concerns about what matters in using AfL.

When studying learning, it is helpful to focus on what Hedegaard (2012) has referred to as 'activity settings', which she describes as 'recurrent events located in practices based on traditions in a society's different institutions in daily life' (p. 131). In the context of teacher education taking place in schools, student teachers can participate in different activities such as tutor groups, running an after school activity with pupils, teaching a lesson or observing other teachers. Hedegaard (2011) explained this relationship between activity and practice as follows: 'the collective institutional practices are the social conditions for a

person's activities' (p. 12). Primary attention in the present study is given to what student teachers did in the activity settings of classroom teaching.

Activities offer potential learning situations to learners but much depends on how a learner interprets the demands in the activity. Learners, such as student teachers, need to be supported in recognising the demands in order to engage with the learning potential in the activities in which they participate in. As van Huizen et al. (2005) suggested, 'The primary condition to be provided for apprentices to explore actively the meanings of their profession is that these meanings are explicitly presented, clarified, and deliberately modelled in practice' (p. 276). The idea of recognising and responding to demands in activities in practices is challenging for student teachers. Yet, it is crucial for understanding learning from a cultural-historical perspective. Here, a key concept mentioned earlier is the SSD of the learner. The idea arose in Vygotsky's analyses of the development of young children, but it has been used more recently in relation to student teachers' learning (Childs, Edwards, & McNicholl, 2014; Edwards, 2014).

Vygotsky's SSD is key to understanding the dynamic of a child's development. According to Vygotsky (1998), the SSD 'represents the initial moments for all dynamic changes that occur in development during a given period' (p. 198). Hedegaard (2011) extends both Vygotsky's and Leontiev's thesis on children's development through the concept of practice and suggests that the relation between 'institutional practice and its objective and the person's motivated activity within his/her social situation of development can be seen as the core in conceptualisation of the developmental process as self-movement' (p. 12).

The SSD of a learner should not be seen as a social situation in which their development occurs without effort. Instead the SSD is always a potential and is created when the learner who recognises and responds to demands in activities in practices and moves themselves forward to address them. This point does not mean that the learner experiences a metacognitive awareness of their own development and intentionally creates the situation in which they propel themselves forward. Rather, their current motive orientation towards the opportunities for action available to them within a situation means that they are able to use these resources to move forward and position themselves differently within the practice that they are inhabiting. Therefore, student teachers need opportunities and support in recognising and interpreting demands that would enable them to take their learning forward in the activities they participate in. Hedegaard (2014) sees this dynamic relationship between the demands of the activity and what the learner brings to tackle these demands as key to learning and ultimately development. The agency of the student teachers as learners therefore becomes important as they respond to demands from others and create demands for themselves. But, so too are the demands placed on the student teachers. One area for exploration in the present study is the kind of demands made on student teachers in relation to AfL. For example, a student teacher may be highly motivated to use AfL as a tool to help pupils learn but may struggle to take his or her own learning intentions forward when the demands for using AfL are set low in a school where summative assessment dominates. When considering how student teachers are able to learn in school, it is therefore important to recognise the following:

> The dynamic tension between the agency of the child [i.e. learner] and the demands and affordances of an activity setting …. [and] …. attention to both how children

> act in relation to the demands in the practices and activities they move between; and how experienced participants in those practices and activities mediate the demands that are placed on children as learners. (Hedegaard & Edwards, 2014, p. 186)

Consequently, learning requires the opportunity to act agentically, to respond to demands and to consequently reposition oneself in the practices in which one is participating (Hedegaard & Edwards, 2014). The thesis places emphasis on how student teachers work with or create demands when using AfL in their teaching. It also focuses on what kinds of demands the teacher mentors highlight for student teachers in relation to using AfL as a tool in teaching.

I now focus on how Figure 2A particularly relates to the use of AfL. The societal plane points to the need to examine policy expectations in terms of AfL. There is clear evidence in the literature that different countries hold different expectations for using AfL (Black & Wiliam, 2005; Organisation for Economic Co-operation and Development (OECD), 2005; Sebba, 2012). 'Institutional practice' here refers to the practices found in the school and how they mediate policy expectations through the histories and values that shape institutional practices. Schools have different intentions when it comes to AfL, which reflects how they are valued and used in schools and what purposes they serve (Boyle & Charles, 2010; Hall & Harding, 2002; James & Pedder, 2006). Moreover, departments within schools may have different ways of interpreting broadly held expectations, leading to differences in how departmental members adopt AfL (Hodgen & Marshall, 2005; Marshall, 2004). Therefore, the AfL demands encountered by student teachers in their activity settings of classrooms are likely to differ from school to school and even department to de-

partment. Individual teachers may also have different values and purposes when using AfL (James & Pedder, 2006), and these differences may be represented in teacher mentors (Anthanases & Achinstein, 2003; Butterfield et al., 1999). These demands help create the social conditions in which student teachers learn while participating in classroom activities.

2.2.3 Mediation

Mediation is a central theme in Vygotsky's work and one of his goals was to build a link ‘between social and historical process, on the one hand, and individuals' mental processes, on the other …. because humans internalise forms of mediation provided by particular cultural, historical, and institutional forces that their mental functioning [is] sociohistorically situated’ (Wertsch, 2007, p. 178). Wertsch is reflecting Vygotsky (1978) who argued that tools and signs mediate the activities and interaction with individuals in their environment. These signs can include ‘language, various systems for counting, mnemonic techniques, algebraic symbol systems, works of art; writing; schemes, diagrams, maps, and mechanical drawings; all sorts of conventional signs’ (Vygotsky, 1981, p. 137).

When examining mediation, Vygotsky was interested in the qualitative transformation of individuals. An important Vygotskian principle of tool mediation is that thinking begins first from the ‘intermental’ (social) plane and then to the ‘intramental’ (individual) plane. Wertsch (2007) offered the following overview:

> When encountering a new cultural tool, this means that the first stages of acquaintance typically involve social interaction and negotiation between experts and novices or among novices. It is precisely by means of participating in this social

> interaction that interpretations are first proposed and worked out and, therefore, become available to be taken over by individuals. (p. 187)

The idea that student teachers will encounter AfL as a new pedagogical tool and interact with more expert others is relevant to the research enquiry with its focus on how they learn to teach in schools. Student teachers also need more expert others or individuals, such as teacher mentors, who enable interactions. The student teachers can then work with the ideas in these interactions to transform their thinking and learning. Learning to use tools, therefore, involves more than the accumulation of new ideas; it also requires a transformation of how the tool is used and understood.

In reading Vygotsky's work on mediation, Wertsch (2007) distinguished between explicit and implicit mediation. Explicit mediation is 'intentionally and overtly introduced into problem solving activity, often by an outside party, and the materiality of the signs involved … tends to be obvious and non transitory' (Wertsch, 2007, p. 191). The stimuli or signs are self-evident and are introduced by an individual to another person, such as a teacher mentor providing a template of the school's lesson plan to student teachers.

In implicit mediation, the stimulus is not intentionally introduced; rather, it is part of an 'ongoing communicative stream …. [involving] signs, especially natural language, whose primary function is communication' (Wertsch, 2007, pp. 180-181). For implicit mediation, the signs are 'transitory and seemingly ephemeral' (p. 191) and are not purposely introduced in the activities of individuals. This will include a teacher mentor's discussion with a student teacher about how a particular child responded in a lesson during an informal corridor discussion, or student teachers listening to a staff room discussion about pupil be-

haviour. The idea of implicit mediation of knowledge provides a way to examine the links between talk and knowledge in practices, informing us about how meaning is shared in the activities present in practices (Edwards, 2010a). One way of examining these links is to investigate how student teachers are able to explore and make sense of these meanings that are modelled in practice by a more expert individual (van Huizen et al., 2005), who is able to mediate what matters in the practices they inhabit. This aspect is further elaborated in the mentoring section of this chapter.

2.2.4 Tool use

Vygotsky argued that what he called consciousness is revealed in how we interpret tasks and work with cultural tools on those tasks. A tool can be a material artefact, language or a concept that arises in human interaction (Cole, 1996). Looking at how tools are used in an activity provides a way to understand the object that is worked on and how it becomes shaped or transformed by the tool (Edwards, 2005). For example, pupils in a geography lesson might have a task (object) that involves working in pairs (interaction and language as a tool) to distinguish between different types of urbanisation (conceptual tool). The ways in which pupils make sense of the task and the tool will be revealed in their actions as well as in the language they use.

The cultural-historical approach recognises how tools that are employed in activities in practices are often shaped by the historical development of those practices. As Cole (1999) explains, a tool is ‘a material object that has been modified by human beings as a means of regulating their interactions with the world and each other’ (p. 90). Tools therefore carry with them historical adaptations of their use, and through the process of transformation, create new meanings that are embedded in present activity (Ellis et al., 2010). For exam-

ple, one can consider the broadening meanings and use of formative assessment from the past and its emphasis in present literature (Brookhart, 2007). The thesis focuses on one pedagogical tool, AfL, in order to study how student teachers learn to use the tool as they learn to teach in schools. Focusing on their actions in activities with AfL can provide insight into how student teachers make sense of the tool and reveal what is valued in the practices they inhabit (Edwards, 2010b). In what follows, I present two approaches that have examined tool use in different settings. The former investigated pedagogical tools (Grossman, Smagorinsky, & Valencia, 1999), whereas the latter focused on the use of tools in organisations (Engeström, 1990, 1999, 2007). I will also describe how the approach taken in the research enquiry provides a useful way of investigating how student teachers learn to use AfL as a pedagogical tool.

In a study in the USA, Grossman et al. (1999) investigated how pre-service teachers used pedagogical tools in teaching English. Drawing on socio-cultural theory, the researchers referred to the appropriation of pedagogical tools as 'the process through which a person adopts the pedagogical tools available for use in particular social environments (e.g., schools, pre-service programs) and through this process internalises ways of thinking endemic to specific cultural practices (e.g., using phonics to teach reading)' (Grossman et al., p. 15). They proposed five different levels in which pedagogical tools can be appropriated or not appropriated. These levels are the lack of appropriation, appropriating a label, appropriating surface features, appropriating conceptual underpinnings and achieving mastery.

At the first level, learners may not appropriate the tool because of difficulties in understanding the tool or they may reject its use. By the same token, individuals may understand

the conceptual underpinnings of a tool but reject the grounds that support its use. For example, student teachers may reject ideas from their university despite learning about the purposes of these tools. They also might reject a tool when its use is not aligned with school or departmental norms. Secondly, individuals may appropriate the tool superficially but might not apply its central features. For example, one might know what AfL is but may not know how to implement it in the classroom. Thirdly, individuals may know several important features of the tool but lack an understanding of how these features are integrated as a whole. With this kind of usage, student teachers may be aware of the various strategies of AfL but are not using AfL to promote pupil learning. Fourthly, individuals who learn the conceptual underpinnings of the tool are more likely 'to be able to apply their use of tools in new contexts and for solving new problems' (Grossman et al., 1999, p. 17). This level implies that appropriating the conceptual underpinnings of the tool in one setting would likely enable individuals to apply their conceptual understandings of the tool in a different context. Lastly, the researchers acknowledged that while the student teachers in their study were able to appropriate conceptual underpinnings of pedagogical tools, reaching the level of mastery within the time frame of an ITE programme would be difficult. Moreover, they noted that it could take several years for individuals to achieve mastery of these tools.

According to the researchers, several factors can affect the degree of appropriation of a pedagogical tool. These factors include the school environment, how the pedagogical tool is introduced, the extent to which learners have opportunities to experience and use the tool, and the prior beliefs of student teachers. The types of appropriation that the researchers have proposed are useful for drawing attention to how AfL might be appropriat-

ed or not appropriated by student teachers, but their study did not focus on how practices can come to shape the use of the tool. The fourth level of appropriation implies that there is a possibility of a successful transfer of learning from one context to another. Given, however, that schools are likely to have different interpretations of AfL as well as differences in their use (Boyle & Charles, 2010; Hall & Harding, 2002; James & Pedder, 2006), this suggestion does not consider how different learning dialectics are created between the learner and environment when moving across practices. This additional concern presents an analytical challenge when it comes to understanding how tools are used and the purposes they serve in activities. One way of addressing these issues is through Engeström's (1990, 1999, 2007) work on tool use.

Engeström's (1990) elaboration of tool use originated from Wartofsky's (1979) work on artefacts. Wartofsky proposed that three different types of artefacts existed. Primary artefacts are used in direct production, and examples include axes, clubs, needles and bowls. In classrooms, examples could include paper, pens and pencils. Secondary artefacts build on the representations and modes of action of primary artefacts. They are created and used 'in the preservation and transmission of the acquired skills or modes of action or praxis by which this production is carried out' (Wartofsky, 1979, p. 202). Examples include words, maps, reflective journals and illustrations. Tertiary artefacts on the other hand, "can come to constitute a relatively autonomous 'world', in which the rules, conventions and outcomes no longer appear directly practical, or which, indeed, seem to constitute an arena of non-practical, or 'free' play or game activity" (Wartofsky, 1979, p. 208). These artefacts can be labelled as 'imaginative' (Cole, 1996, p. 121) and extend the immediate ways in

which the artefact is used. Computer software, such as population simulation programs and mapping software are examples of tertiary artefacts.

Engeström's (1990) work with health care practitioners suggests that these categorisations can be refined. He observed the ambiguity between secondary and tertiary artefacts, and the processes at work in the activity of medical consultation. One of the first stages of object formation was the need for doctors to create a meaningful pattern from a patient's complaint and to decide what should be entered in the medical record (secondary artefact). Doctors needed to distinguish between acute visits (without appointments) and visits with appointments. The two kinds of appointments were rules that mediated the actions of doctors in deciding the next steps to take and how the medical record would be used. Acute visits had shorter consultation periods and doctors could only focus on the main complaint experienced by the patient. On the other hand, visits with appointments had longer consultation periods and permitted doctors to respond to more than one complaint. In the study, Engeström described how a doctor dealt with an acute visit from patient who had two complaints. The primary problem was a high temperature and secondary problem was the loss of weight. Because of the rule, the doctor could only respond to the primary complain (high temperature) and noted it down in the medical record but no comments were made on the secondary complaint (weight loss). When asked about the lack of comments on the latter issue, the doctor responded that dealing with the secondary complaint would have prolonged the consultation period; moreover, the complaint did not fall under the criteria of a visit without an appointment.

Secondary artefacts, like the medical record described, are ‘dependent on the object of actions’ and can ‘exert[s] influence on the formation of the object and on the choice of arte-

facts' (Engeström, 1990, pp. 181-184), which are not as easily categorised as Wartofsky (1979) had suggested. Here, Engeström is referring to the object of activity, that is the focus of the activity, or the problem being worked on. The object of the activity contains the demands that are being made on the actor who is working on it. In this example, the demands in the object were being limited by the rules that governed appointments.

Engeström (1990) went on to propose that it is useful to refine Wartofsky's (1979) categorisation of artefacts by recognising the *what* aspects of primary artefacts, the *how* and *why* aspects of secondary artefacts and the *where to* aspects of tertiary artefacts. These distinctions allow researchers to examine the purposes of tool use in more detail and to connect with the emphasis on purposeful action. His later development of this refining included *when* and *in which location* as secondary artefacts (Engeström, 2007). These distinctions proved useful in the analysis of student teachers' use of AfL as a pedagogical tool.

In examining how student teachers learn to use AfL as a pedagogical tool, I have taken the lead from Engeström (2007), who suggested that it is useful to examine the 'type of epistemic work the artefact does in a given action or sequence of activity' (p. 34). He has systematised a typology of tool use, as shown in Figure 2B. In describing the typology, he explained that tools can operate in different ways in an activity with 'what' as the simplest and the 'where to' as the most advanced. Understanding how tools, such as AfL, are used in activities is, according to the cultural-historical line, a good way to assess how the potential of a tool is understood. As Engeström (1990) stated, 'A tool always implies more possible uses than the original operations that gave birth to it' (p. 174). Student teachers may come to use or understand AfL in several ways. For example, a student teacher may

know ‘what’ AfL is and ‘how’ to implement AfL but may not recognise the ‘why’ or ‘where to’ aspects of AfL.

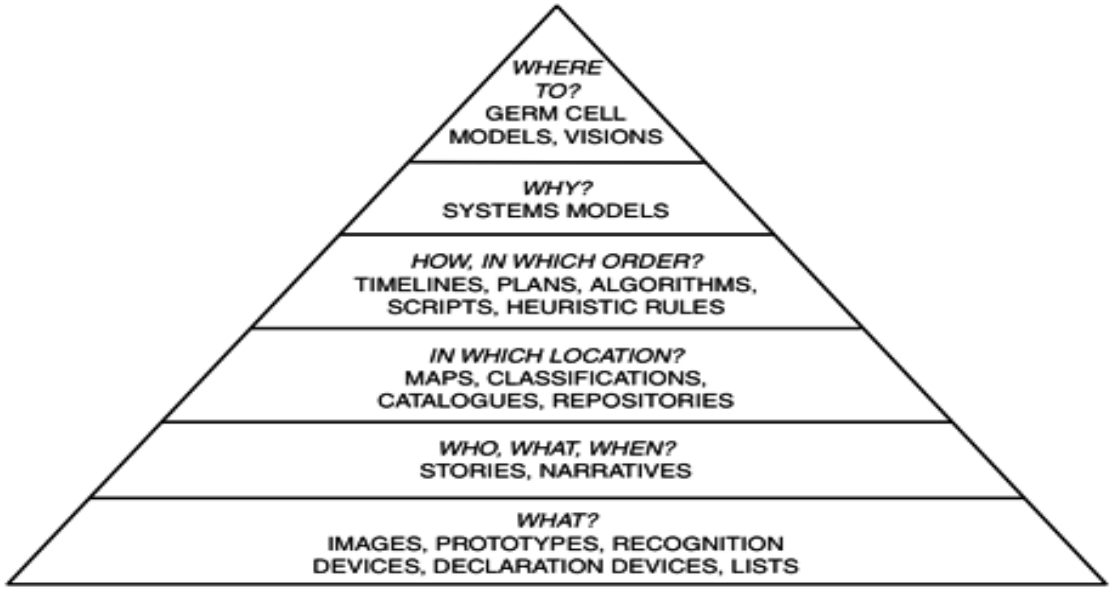


Figure 2B. Epistemic levels of mediational artefacts. Reprinted from "Enriching the theory of expansive learning: Lessons from journeys toward coconfiguration," by Engeström, Y., 2007, *Mind, Culture, and Activity*, *14*(1-2), 23-39.

The typology of tools offered by Engeström (2007) has been usefully applied in teacher education in examining the mediating role of course handbooks in ITE (Douglas & Ellis, 2011), pedagogy in teaching secondary science (McNicholl & Childs, 2010) and the use of official tools in inter-professional collaborations (Edwards, Daniels, Gallagher, Leadbetter, & Warmington, 2009). There are several advantages to using this approach to analyse the use of AfL. By acknowledging the nature of student teachers’ learning in schools and by focusing on one aspect of their learning, AfL, and their learning to use the tool within and across practices, the approach taken also provides a way of drawing attention to how practices can come to shape student teachers' use of a pedagogical tool, the functions they serve and the demands student teachers recognise and work on in their actions in activities

in schools. The thesis is one of the first studies to use Engeström's (1990, 1999, 2007) work on tools to examine how AfL is used as a pedagogical tool. As we shall see when AfL is discussed in more detail later in the chapter, it can potentially advance our understanding in conceptualising how AfL is used and for what purposes.

2.3 Cultural-historical approaches to teacher education

In this section of the review, I first discuss cultural-historical views of teacher education. I then go on to set out how this approach has helped address the problem of the transfer of learning from university to school. Finally, I consider mentoring as mediation in cultural-historical terms.

2.3.1 Vygotskian perspective on teacher education

A Vygotskian approach to teacher education places emphasis on 'how the mind is formed in activities' (Edwards, 2014, p. 49) and how student teachers learn to orient themselves towards public meanings of teaching while they become participants in schools. Van Huizen et al. (2005) were interested in overcoming dualistic understandings of knowledge, where knowledge gained in one setting is applied in another. They suggested that learning to teach should be seen as a collective activity that is understood by examining how student teachers make sense of and move towards familiarity with public meanings, seeing the development of a professional identity as nested in layers. These layers include the macro, meso, micro and personal. Each of these layers carry different emphases in action and meaning, and have much in common with Hedegaard's (2014) analytic heuristic shown in Figure 2A.

At the macro level, societal traditions and values broadly frame the practices in both schools and teacher education (university). For student teachers to develop their professional identities, they will need to understand the public meanings and what is considered as an acceptable standard of teaching for them to assign meaning to these standards. Schools and teacher education institutions act as agents at the meso level, assigning and mediating meanings framed at the macro level. At the meso level, 'explicit meanings about teaching are presented and communicated to trainees … [and] they experience meanings that are enacted and embodied in the teaching practice of the institution' (van Huizen et al., 2005, p. 278). In other words, schools and teacher education institutions employ meanings developed at the macro level to communicate what is valued in each practice at the meso level. These two levels can be seen as providing the conditions in which student teachers learn to assign meaning as they develop their professional identities.

The micro level focuses on how student teachers learn to assign personal meaning to their actions and how the macro and meso levels frame situations such as their teaching in schools. Van Huizen et al. (2005) have suggested that there are two different and often competing dimensions at the micro level, as student teachers learn to teach and assign personal meaning to their actions in activities. On the one hand, student teachers are provided with opportunities to enquire about, consider and reflect on public meanings and what their actions mean. This implies the need for curricula that enable student teachers to participate in interactions and undertake roles in order to explore public meanings framed from both the macro and meso levels. These meanings can arise during mentoring conversations or interactions with other teachers in schools, and professional development sessions in the university. The thesis focuses on how student teachers explore public meanings in schools.

On the other hand, there are situations where performance dominates, which leaves student teachers with little room to explore, interpret and reflect on their actions. In these situations, 'tasks are to be undertaken, plans to be carried out, and expectations to be met … [and] … meanings have to be realised in action' (van Huizen et al., 2005, p. 279). These situations limit learning opportunities for student teachers. Unless student teachers are supported in assigning meaning through reflections which give them access to public meanings, the meanings they initially ascribe to their actions may become 'fossilized … and action patterns may become consolidated into a routine' (p. 279). One outcome arising from these situations is that student teachers become less responsive to pupil learning but become polished deliverers of the curriculum (Edwards, 2009). They develop a professional identity that focuses on what Evetts (2009, p. 248) referred to as 'organisational' professionalism rather than 'occupational' professionalism. The former focuses on professional actions towards external demands and the latter is informed by collegial authority (Evetts, 2009). As such, there is a need to examine the demands made on student teachers in the practices they inhabit. It is also important to examine how teacher mentors mediate these meanings and demands in ways that allow student teachers to connect their own attempts at making sense with the meanings valued in the practices in which they are participating. As we shall see, there are considerable assumptions in this statement: that individual school practices always carry meanings and values that are shared across the profession.

The personal level discussed by van Huizen et al. (2005) focuses on how individuals develop personal meanings through their engagement in practices. However, as they pointed out, not all situations enable student teachers to make meaning in their actions, especially

when performance dominates over actions. From an ITE perspective, Childs et al. (2014) suggested that student teachers need to be supported to know and question not just the 'what' of a practice but also the 'how' and 'why', opening up the public meanings and delving into activities that support student teachers learning in schools. Following Derry's (2008) argument on the need for a designed learning space for learners, Childs et al. (2014) commented that participating in a practice is 'not enough to guarantee learning' (p. 36). Additionally, they stated that learners such as student teachers need an environment designed for learning to be able to explore and reflect on these public meanings. They draw on the following statement by Derry (2008) to support their case:

> [A] Vygotskian approach doesn't depend simply on individuals being placed in the required environment where they discover meaning for themselves. The learning environment must be designed and cannot rely on the spontaneous response to an environment which is not constructed according to, or involves, some clearly worked out conceptual framework. For Vygotsky, concepts depend for their meaning on the system of judgments (inferences) within which they are disclosed. (pp. 60-61)

Like Childs et al. (2014), van Huizen et al. (2005) argued that student teachers need to be supported in environments that enable them to assign meaning to an ideal standard of teaching and professional identity: 'the individual needs an environment presenting and modelling an ideal standard of achievement and providing supporting conditions for a successful approximation of this standard—the zone of proximal development' (p. 272). Their argument places emphasis on the role of ITE institutions and schools in creating learning opportunities for student teachers.

If tools like AfL are left unquestioned and unchallenged by the learners, the tool itself has the potential to become simply a 'what' and 'how' tool, leaving less engagement with the purposes of the tool or its 'why' aspects. Therefore, van Huizen et al. (2005) have usefully suggested how learning to teach should be seen as being embedded in different layers in which student teachers participate. In summary, the researchers argued that looking at learning to teach in this way provides a non-dualistic account of learning to teach by emphasising the dialectical relationship between individuals and the environment. Accordingly, different practices provide different learning opportunities for student teachers. They point to the problem of transfer of learning which views learning as the acquisition of knowledge from one setting to be applied to another setting.

2.3.2 Transition across practices

As I have begun to indicate, cultural-historical accounts of learning see learning as the dialectical relation between person and practice. This means that as participants approach an activity, they do so by interpreting and engaging with the activities embedded in the practice. Individuals are also able to exercise agency and align their actions with what matters in a practice, impacting the practice as they take forward their actions in activities (Edwards, in press-a). This implies that learners are not only shaped by the practices they participate in but also shape them through their actions. This view of the relationship between person and practice calls into question the idea of a simple transfer of knowledge by pointing to the need for greater attention to transitions between practices. In this thesis, the data also point to the additional problem of moving between school practices as the student teachers leave their first school placement and seek to establish themselves in a second school placement. In tackling these topics, this section introduces the work of Dreier

(1999, 2003, 2009) on learning trajectories as well as the concept of figured worlds by Holland et al. (1998). These researchers draw on Vygotsky's legacy and, like Beach (1999), who is also discussed, offer ways to overcome the problems of transfer in relation to ITE.

Dreier's (1999, 2003, 2009) work on learning trajectories advises researchers on how to trace the learning of individuals over time and across practices. He draws on critical psychological accounts of learning and focuses on how individuals construct and enact their personal trajectories through their participation in and across different structures of social practice. The concept of *learning trajectories* used in this thesis refers to the ways in which student teachers learn to teach through their participation within and across practices and how they assign meaning to AfL as a pedagogical tool in the practices they participate in. The study recognises that their learning trajectories within and across practices may be non-linear (Furlong & Maynard, 1995) and will require a re-orientation of themselves as learners as they move across different practices (Dreier, 1999). The concept does not view learning simply as acquisition of knowledge and recognises that student teachers' learning trajectories are what Dreier (2003) termed ‘full of interruptions’ (p. 7).

Focusing on learning trajectories foregrounds individuals' learning through their participation in practices and how different practices mediate their learning trajectories across time and space. Dreier (1999) maintained that while it is important to understand how individuals participate in practices, the environment itself does not determine the learning trajectories of individuals. He emphasised the need to recognise the challenges and implications for the learning trajectories of individuals as they move across different practices. He also sought to bring attention to the trajectories of learners in terms of their changing relations to different practices.

Dreier (2003) argued that individuals have the agency and capacity to learn and assign new meanings to their actions in activities in these new practices. Their positioning may also change as they move across practices, and what is learnt in a new context is subject to modifications:

> What was learned earlier maybe replaced by learning something new and different that is, it may be un-learned. As a person's situation changes in one or across several contexts, the meaning of what was learned earlier is reconsidered, reevaluated, and changed, and new learning may be triggered. (Dreier, 2003, p. 6)

For Dreier (2003), modifiability is a key feature in examining learning across different practices. He focused on the potential learning dialectics present in practices, which can create or hinder learning opportunities for learners. Therefore, individuals will be working on and with different demands and will be learning different things in different practices rather than the transfer of learning. Dreier (2009) offered the following description:

> As persons move from one social context into another, they confront other possibilities, occupy other positions; alternatively, if a position reaches across contexts, it is played out differently … persons are also involved in other relations of participation with a different set of co-participants … there are often very different things at stake for persons in different contexts and their personal concerns vary significantly across them … the personal meaning of their participation in these contexts differs, and they gain different personal experiences and observe and learn different things. (p. 196)

Holland et al. (1998) addressed another way of exploring these dimensions of learning within and across practices and how individuals are positioned and navigate practices. Their work offers anthropological accounts of how identities mediate one's actions in the figured world of practices. By ‘figured worlds’, Holland et al. (1998) meant ‘a socially and culturally constructed realm of interpretation in which particular characters and actors are recognised, significance is assigned to certain acts, and particular outcomes are valued over others’ (p. 52). In each figured world, actors such as student teachers and teacher mentors are recognised; significance is assigned to certain acts such as using questions in classroom teaching. In addition, particular outcomes may come to be valued over others, such as ensuring pupil progress. In these figured worlds, student teachers' identities are developed and shaped by their actions in the practices they participate in.

In their analyses, the artefacts used by individuals are regarded as important as they ‘open up’ figured worlds (Holland et al., 1998, p. 61). In their study with Alcoholics Anonymous (AA) groups, poker chips, while often used to symbolise money, signified one's success of staying sober and were a cultural resource that mediated the identities of non-drinking alcoholics. In the Vygotskian sense, we see that how tools are used in figured worlds can inform us of what is valued in practices.

The work of both Dreier and Holland invites us to consider the dynamics at work in individuals' learning trajectories as they move between practices. The notions of figured worlds and structures of social practices alert us once more to the need to attend to the demands that student teachers may encounter in their school placements. These concepts lend credence to the view that learning to teach is far more than the acquisition of knowl-

edge from one setting and transferring what is learnt to another setting. It recognises the dialectic between person and practice as well as the intentions individuals bring with them.

In an effort to address the problem of transfer, a number of approaches have emerged as an alternative to the concept of transfer. Lobato (2006, p. 432) indicated five key approaches, all of which are in some ways compatible with the emphasis on transitions taken in the present thesis:

1. Transfer as consequential transitions (Beach, 1999, 2001, 2003)
2. Affordances and constraints approach (Greeno, 1997; Greeno, Smith, & Moore, 1993)
3. Preparation for future learning (Bransford & Schwartz, 1999; Schwartz & Martin, 2004)
4. Actor-oriented transfer perspective (Lobato, 2003)
5. Activity theoretic perspectives (Tuomi-Gröhn & Engeström, 2003; van Oers, 2004)

In the five alternative approaches Lobato (2006) has named, Beach's (1999, 2001, 2003) concept of consequential transitions is most relevant and helpful in answering the research questions in the study. In defining transitions, one has to examine the kinds of transitions taking place. Zittoun (2014) reminds us that transitions are a ‘catalysed process of change … [and] must be a special sort of change … otherwise … everything would be transition’, (p. 235). Beach (2003) offered a profound definition, seeing transitions as a ‘developmental change in the relation between an individual and one or more social activities’ (p. 42). Transitions bring implications to individuals' learning and involve the dialectical relation-

ship between the individual and the environment, as previously discussed. According to Beach (1999), these transitions are consequential in nature ‘when they are consciously reflected on, often struggled with, and the eventual outcome changes one's sense of self and social positioning’ (p. 114). Becoming a teacher and, as we shall see, moving across different school placements are potentially consequential transitions for student teachers.

A premise in Beach's (1999) notion of consequential transitions is that learning cannot be assumed as a reproduction of tasks and relations in different environments. For example, what is learnt in school A largely determines the learners' trajectory in school B with minimal influence of the environment on their learning. With reference to Beach's arguments against learning by transfer, Edwards (2009) asserted from an ITE perspective that “[w]e should not be simply aiming at making patterns of participation in different settings as similar as possible ... [but] rather we should see the processes of ‘reconstruction’ and the consequential transitions of which they are part as ‘important pedagogical opportunities’” (p. 157). In other words, student teachers' learning and development involve reconstruction rather than a reproduction of their learning in a new context. Beach's (1999, 2001, 2003) concept of transitions complements the cultural-historical approach taken in the study because it involves analysing the dialectic between person and practice.

As described in section 2.2, Hedegaard's attention to demands and motives informs us that when a child moves from one practice to another, conflicts in motive orientation and changes in demands can either hinder or facilitate new learning (Hedegaard, 2014). Although Hedegaard's work focused on children's movement between practices of home and school, her attention to the different demands present in different practices bears relevance to the thesis, as the research enquiry involves following student teachers across two school

placements. These moves may require student teachers to navigate the practices they inhabit in their new school placements, carrying implications for how they learn to use AfL.

Under the cultural-historical lens, student teachers are seen as active learners. They are capable of interpreting and recognising demands of their environments and are able to act on them (Edwards, 2014). In entering a new practice, new set of organisational motives need to be recognised and worked with (Hedegaard & Edwards, 2014). These motives may be different from and may conflict with the motives that shaped practices in the first school placement, requiring student teachers to develop new competencies in a new setting and environment. Hedegaard has made this point in her studies of children entering school (Hedegaard, 2011, 2012, 2014) and provided the following explanation of children's transitions: 'Moving from one place to another means that children's motive orientation and the demands they recognise change when the practices they enter differ and this may cause tensions in children's learning and development' (Hedegaard, 2014, p. 189).

Transitions as experienced by student teachers in the last example from Hedegaard (2014) are, according to Beach (1999), 'consequential' because they:

> [C]onsist[s] of changing relations between persons and social activities represented in signs, symbols, texts, and technologies or, more generally, in systems of artefacts. . . . [and] some form of consequential change in the relation between the individual and one or more social activities across time. (pp. 119-130)

In the activity of teaching, becoming a teacher is a highly consequential transition for beginning teachers. In addition, their learning across school placements involves participation in different practices and different opportunities for them to create learning dialectics.

In the thesis, student teachers' transitions to new schools involve recognising the reconstruction of learning and examining how they orientated to changes in the demands and the implications for their learning.

In describing consequential transitions, Beach (1999) suggested that there are four types of transitions: lateral, collateral, encompassing and mediational. Each of these transition conveys different aspects of learning between the learner and the activities in which they participate in. According to Beach (1999), each of these transitions 'potentially involves the continuity and/or transformation of knowledge, skill, and identity embodied in the relation' (p. 114). Of all four transitions, 'lateral transitions' is the most relevant to the present study because it involves examining the movement of individuals 'between two historically related activities in a single direction. . . . [and] [o]ften, the activity one is in lateral transition is considered a developmental advance beyond the previous activity' (Beach, 1999, p. 114). In other words, moving from the first to second school.

In the present study, the second school placement is considered a point in their development as teachers, where student teachers in this particular ITE programme are expected to go beyond the national standards for teacher qualification. It is expected that they will make the most of the new environment they are in as a lateral transition so that they are able to continue with the professional identities they are trying to create. As we shall see, this assumption is called into question by the data gathered over the two school placements, enabling me to ask whether these new environments present challenges or opportunities for the student teachers who are expected to continue to develop as learners and beginning teachers when they move between school placements.

In examining transitions, Zittoun (2008) expressed the need to question how individuals develop from these transitions. To my knowledge, there is no research on consequential transitions for student teachers as they move between school placements in the same ITE year. The thesis, therefore, has the potential to shed light on these transitions and the implications for students' learning trajectories and developing identities as early career teachers. Taken together, the concepts of learning trajectories, figured worlds and consequential transitions provide a way of addressing the issue of transfer of learning by focusing on the dialectic of the student teachers and their environment and on how these afford or constrain their opportunities to create opportunities for themselves to move forward as learners in the practices they inhabit.

2.3.3 Mentoring as mediation

The thesis views mentoring from a cultural-historical perspective where the mentoring of student teachers is seen as mediation of knowledge (Edwards & Protheroe, 2004). Here, the idea of mediation plays a central role in student teachers' participation in the practices of the schools and in helping them use conceptual and material tools in increasingly informed ways (Edwards, 2010b). How teacher mentors mediate their professional knowledge and how student teachers interpret and respond to these demands have implications for their learning and reasons for using AfL. Mentors may mediate their professional knowledge both implicitly and explicitly. In doing so, they not only pass on ideas about how to act but also induct the beginning teacher into which problems to recognise and respond to. In that way, they help structure the learning dialectic of person and practice that may form the student teacher as a professional. Edwards (in press-b) offered this suggestion:

> While practices offer distinct affordances and demands, which call for 'gap-closing'; what is learnt will depend on what is recognised as the demand. This is an important point for a cultural-historical framing of teacher education as it suggests a specific role for mentors as mediators of what matters in the classroom.

The types of feedback teacher mentors provide to their student teachers have considerable influence on their learning in schools (Edwards & Ogden, 1998; Edwards & Protheroe, 2003; Thompson et al., 2015; Timperley, 2001). Yet, the literature gives a different picture of the kinds of feedback student teachers receive in schools. For instance, a recent review of literature on teacher mentors' participation in teacher education (Clarke et al., 2013) reported that the kinds of feedback student teachers receive in mentoring conversations rarely enables them to reflect on their learning. Other researchers (Hennissen, Crasborn, Brouwer, Korthagen, & Bergen, 2008) have reported that feedback largely emphasised the technical aspects of their teaching, with minimal variation over the course of the ITE programme. The lack of variation in feedback is problematic, given that student teachers may have different starting and end points in a teacher education programme (Burn, Hagger, Mutton, & Everton, 2003). It seems that little has changed since the early days of mentoring and that the feedback rarely takes into account the development, needs and concerns of student teachers (Furlong & Maynard, 1995).

As I have already indicated, the feedback that student teachers have received often included the need to closely model what their teacher mentors do in the classroom and follow up their advice (Gonzalez & Carter, 1996; Jones & Straker, 2006; Thompson et al., 2015; Valencia et al., 2009). By acting in accordance with their teacher mentors' views of teaching,

student teachers have often lacked opportunities to experiment with what they had learnt in university. If student teachers were guided, the feedback would be steered towards tasks with a lower risk of disruption in the regular flow of teaching (Edwards, 1998). These studies inform us that student teachers were expected to fit in (Calderhead, 1987) to the norms of school and classroom by positioning themselves as ‘polite guests bearing gifts’ (Edwards, 1997, p. 35). In other words, they carried out tasks to provide visible evidence of their teaching competence to accommodate to their teacher mentors' requests rather their own learning needs as beginning teachers.

The studies that have identified the instrumental kinds of feedback student teachers received in schools are consistent with studies spanning a decade that were conducted by Edwards and colleagues from a socio-cultural and CHAT perspective (Edwards, 1995, 1997; Edwards & Collison, 1996; Edwards & D'Arcy, 2004; Edwards & Ogden, 1998; Edwards & Protheroe, 2003; Edwards & Protheroe, 2004). These studies pointed to the limitations on the kinds of feedback that student teachers received and what they learnt in schools (Edwards, 2010b, p. 70):

1. Student teachers very rarely interacted with other teachers while they were in class rooms learning to teach.
2. Their work was guided by lesson plans, often supplied by the class teacher.
3. Feedback focused on their delivery of the lesson and the pace at which children moved through the curriculum.
4. Adherence to the lesson plans meant that student teachers became increasingly less responsive to children over the year of their training.

The studies on mentoring conversations and feedback have so far highlighted the limited opportunities for student teachers to develop their identities as beginning teachers. However, Edwards and Protheroe (2004) suggested that there is a need to consider how teacher mentors are positioned in the practices of the school and the university as they have to prioritise on what matters in schools and therefore mediate these priorities in their interactions with the student teachers. Hedegaard's analytical framing (2014) in Figure 2A alerts us that there is a need to recognise how the school inspection rubrics and demands from the government's Office for Standards in Education's (Ofsted) may shape practices in English schools (MacBeath, Pedder, & Swaffield, 2007) which are then mediated as feedback that teacher mentors provide to student teachers in terms of both explicit and implicit mediation. In brief, teacher mentors' positioning within school-university partnerships reveals challenges in their roles as mentors (Edwards & Protheroe, 2004). They are participating in two different practices with different what matters (Edwards, 2010): teaching and teacher education. A number of terms have been used to describe the dilemmas teacher mentors face as well as the various roles and responsibilities they have in schools (Bullough, Young, & Draper, 2004). Researchers have identified that teacher mentors are often 'torn in two' (Edwards & Collison, 1996, p. 57) and face 'dual loyalties' (Rajuan, Beijaard, & Verloop, 2007, p. 239) to both their student teachers and pupils, requiring them to juggle between these roles (Orland-Barak & Klein, 2005). These studies point to the need to examine how the practices in schools are mediated by the teacher mentors and the kinds of demands that are placed on student teachers in schools. The research enquiry explores these aspects and also considers the implications of working with different teacher mentors as student teachers move across different schools.

2.4 Assessment for Learning

As already indicated in the previous chapter, there has been a large body of research on AfL following Black and Wiliam's (1998a) review of formative assessment. The present review limits the discussion to problematising the use of AfL; it considers the professional knowledge employed in using it and the demands that may arise in ITE. It also acknowledges the extensive body of work undertaken by the Assessment Reform Group (Broadfoot et al., 2002) and other researchers who examined classroom assessment (Black et al., 2003, 2004; James & Pedder, 2006; Thompson & Wiliam, 2008) and, in particular, the seminal advice by Newton on the purposes of assessment (Newton, 2007). However, the present review takes a deliberately narrow line through the study and other research to allow an ultimate focus on the implications for teacher education.

2.4.1 Problematising AfL

One major outcome of Black and Wiliam's (1998a) review in formative assessment as well as their follow-up work in schools (Black et al., 2003) was the refinement and development of formative assessment strategies, which sought to help teachers enhance pupil learning in schools. These strategies included the use of classroom assessment techniques such as open questioning, self and peer assessment, sharing success criteria and learning intentions and providing effective feedback (Black et al. 2003, p. 31). These strategies gained popularity among teachers and one reason for its appeal are its practicalities in classroom teaching (Stobart, 2008). In emphasising these practicalities, broader ideas on formative assessment have been simplified to practical techniques such as ‘traffic lighting’ to signal pupil understandings. However, the emphasis on formative assessment as AfL also led to it being embedded in the National Assessment for Learning Strategy in England

with the potential for widespread influence on teaching and learning in English schools (Department for Children, Schools and Families, 2008).

Nonetheless, studies clearly show that there is a need to examine how and why teachers use AfL. Thompson and Wiliam (2008) reported that it was not uncommon for teachers to claim that they had used AfL but further probing revealed a lack of understanding of AfL and the purposes of the techniques they had used. For their study, Crichton and McDaid (2016) examined how teachers understood the purposes of two AfL strategies: learning intentions and sharing criteria in classrooms. Teachers were aware of these strategies and found them useful. However, their use rarely involved supporting pupils as learners. The strategies were often used to convey the content of the lesson rather than involve pupils in a discussion. Some of the teachers were using the strategies for managerial purposes. In one of the responses, a teacher stated, 'I can do the attendance, while they are writing them [the strategies] down' (Crichton & McDaid, 2016, p. 9). In brief, the strategies were not used in the ways that have been advocated in the literature in terms of involving pupils in their learning (Black et al., 2003, 2004; Wiliam & Thompson, 2008). Although teachers were aware of the benefits of these strategies, there appeared to be a lack of understanding of the purposes – i.e. the 'why' of these strategies for promoting pupils engagement in their learning.

In another study, Boyle and Charles (2010) explored whether there were changes in teaching and learning practices and the use of AfL in primary classrooms, six years after the Primary Strategy, which included AfL as a tool for promoting learning, had been introduced in England. Over three hundred schools participated in a survey which asked how schools were using formative assessment in planning, pupil learning and supporting school

learning outcomes. The researchers followed up with visits to 43 schools to observe teaching and learning and to determine how formative assessment was used.

The survey revealed a wide range of AfL-related strategies, which were based on research in use, and schools said that they placed a high priority on using AfL. However, the researchers were surprised by the inconsistency in how schools defined what AfL was, how it was used and for what purposes. They observed that the use of formative assessment 'has no common understanding across teachers either in definition, components or aspects of practice' (Boyle & Charles, 2010, p. 290). The researchers raised concerns over the use of 'gimmicks' (p. 290) labelled as AfL that teachers were employing, such as 'WALTs' (What am I learning Today), 'WILFs' (What I am looking for), 'TIBs' (This is because), 'OLIs' (Our learning intention is), traffic lighting and 'two stars and a wish'. This finding coincides with what Stobart (2008, p. 149) has described as seeing AfL as 'handy hints' to use in the classroom rather than as a responsive tool to help pupils to learn. Although teachers and schools claimed they were using AfL, on closer examination through lesson observations, Boyle and Charles (2010) observed that none of the lessons' use of assessment could be considered as formative in terms of helping pupils learn. Classroom teaching and pedagogy were dominated by the delivery of the curriculum and maintaining the pace of lessons. In this sense, AfL strategies could be said to be used for AoL rather than AfL.

Marshall and Drummond's (2006) study also identified the instrumental use of AfL. The researchers conducted video recordings from 27 lessons as well as interviews to examine how teachers engaged with AfL. Distinctions were made from the lessons they had observed in terms of the 'spirit' and the 'letter' of AfL (Marshall & Drummond, 2006, p.

137). Only one-fifth of the lessons observed were seen to capture the spirit of AfL. To illustrate these distinctions, the researchers described the lessons they had observed and compared how AfL was used. One of these examples involved examining how the use of AfL strategies such as sharing criteria and self and peer assessment were applied in two similar lessons in the subject area of English. Lesson A focused on a Victorian short story and Lesson B focused on a nineteenth century poem. In Lesson A, the teacher modelled and directed the criteria for what good quality work would look like. Pupils checked their answers and were instructed to correct it on their own. Although the AfL strategies were employed, the activities in this lesson were highly structured and restrictive in nature. For Lesson B, pupils were involved in the process of establishing and creating the success criteria for the poem. They were given opportunities to rehearse, perform and critique the poem with their peers and engaged in the peer assessment of their peers' performance. Both lessons clearly used similar AfL strategies, but the ways in which they were used and their purposes highlighted crucial differences. Lesson A illustrated an example of what the researchers labelled as the letter of AfL because the superficial use of the strategy limited pupils' opportunities to participate in setting criteria and to develop independence in their learning. On the other hand, Lesson B captured the spirit of AfL. Pupils in this lesson had opportunities to contribute to their own learning. Teachers facilitated rather than directed and corrected pupils responses when forming criteria.

These studies inform us that teachers may use the same AfL strategy but do so in very different ways and with completely different outcomes for pupil learning. Across these studies is the emphasis on seeing AfL as ‘how’ tools which can take the form of ‘gimmicks’ (Boyle & Charles, 2010, p. 289), ‘handy hints’ (Stobart, 2008, p. 149) or the

'letter' of AfL (Marshall & Drummond, 2006, p. 137). There was less emphasis on the 'why' of AfL for promoting pupil learning. Although the purpose of these strategies are to help pupils learn, the focus on seeing AfL as a set of strategies and mainly as 'how' tools is problematic. Other researchers (Coffey, Hammer, Levin, & Grant, 2011) have argued that 'the focus on instructional strategies can undermine everybody's attention to the very ideas those strategies were supposed to make visible*'* (p. 1120). The emphasis on the 'why' of AfL, which focuses on promoting pupil learning and following up with evidence to modify teaching and learning activities remains the most challenging aspects of implementing AfL in classrooms (Heritage, Kim, Vendlinski, & Herman, 2009; Oláh, Lawrence, & Riggan, 2010). The present research enquiry examines how and why student teachers are introduced to using AfL and the conceptual demands that are placed on them for using AfL in their teaching.

The strategies identified by Black and Wiliam (1998b) include the active involvement of pupils in the learning process rather than passive individuals waiting to receive knowledge. As Coffey et al. (2011) have pointed out, the fixation on strategies lessens the focus on what pupils are gaining from the use of AfL. Accordingly, using AfL is not a matter of using strategies in the classroom; it also includes changes in the relationships and dynamics involved in the classroom (Pedder & James, 2012). Perrenoud (1991) expressed these points well before formative assessment reached a wider audience: 'Every teacher who wants to practice formative assessment must reconstruct the teaching contract so as to counteract the habits acquired by his pupils' (p. 92).

These arguments imply that there is more to AfL than just employing strategies. Namely, there are certain conditions required before teachers can successfully integrate AfL in their

lessons. In a study carried out in England with primary school teachers, Webb and Jones (2009) revealed the challenges for teachers who were trying to learn and develop their use of AfL. The aim of their study was to help primary teachers from six schools to develop their practice in formative assessment and through the principles from the King's-Medway-Oxfordshire Formative Assessment Project (KMOFAP) (Black et al., 2003). Teachers in the study were supported in their experimentation and reflection in using formative assessment through workshops, discussions and lesson observations. The researchers reported that teachers could clearly see the value of these strategies but found that some of these strategies were highly dependent on others for successful implementation. In the case of self and peer assessment, the researchers identified the importance of establishing honesty and trust as important attributes in creating a classroom culture for these strategies to work well in the classroom because pupils were often worried about being honest with their answers and how others would perceive them. Lysaght and O'Leary (2013) reported a similar finding in Irish schools, where the use of self and peer assessment may require giving up classroom control for it to be implemented effectively. Implementing these strategies places heavy demands on classroom organisation (Popham, 2008). Establishing trust in classrooms may certainly take time and these studies raise questions as to how student teachers would be introduced to and supported in implementing these strategies as AfL when teaching in someone else's classroom on school placements.

2.4.2 Beyond the use of strategies

Most studies have pointed to the challenges in implementing AfL, but less attention has been given to the kinds of knowledge and skills required by teachers to implement it (Heritage, 2007). Researchers have pointed out that teachers often lack adequate pre-service

training and education in the area of assessment (Hill et al., 2010; Mansell & James, 2009; Smith, 2011). The importance of professional development to support teachers' use of AfL in classrooms has also been identified (James et al., 2007; Pedder & James, 2012). As other researchers of AfL had also observed (Bennett, 2015; Wiliam &Thompson, 2008), the successful implementation of AfL places high demands on teachers' subject content knowledge and how they modify their actions to adjust teaching and learning activities based on the evidence they have gathered from their lessons. This thesis does not examine either the content or the subject knowledge of the student teachers or teacher mentors. However, it recognises that these aspects may come to influence how student teachers learn to use AfL as a pedagogical tool and the kinds of learning opportunities they receive from their teacher mentors.

While researchers have pointed towards the instrumental use and uptake of AfL-related strategies in classrooms, Bennett (2015) has argued that the strategies promoted in the literature may have overlooked the importance and differences between the different domains of other subjects. Other educational researchers have made similar arguments concerning English (Marshall, 2004), Mathematics (Hodgen & Marshall, 2005) and Science (Coffey et al., 2011). Hodgen and Marshall (2005) questioned whether the recommended practices that Black et al. (2003) reported could be generalised across all subjects, as their study focused on developing strategies that could be broadly used in teaching. Additionally, Coffey et al. (2011) argued that the emphasis on AfL-related strategies has given less attention to how different subjects may have different ways of assessing their content. The present research enquiry is one of the first studies that examines how student teachers learn to use AfL in teaching secondary geography and contributes to the existing literature on

subject use of AfL by pointing to how AfL is used and for what purposes by some teachers in the subject area of secondary geography.

These studies of AfL inform us that while teachers may know 'what' AfL is, teachers often view AfL as a 'how' tool, rather than focusing on the purpose of advancing the learning of pupils. Consequently, the use of these strategies appears to fall short of being labelled as AfL as they are enacted in mechanistic ways. As James et al. (2007) noted, 'If practices fail to serve the underlying principles such as making learning explicit and promoting learning autonomy, then they cease to be assessment for learning' (p. 215). As I indicated in Chapter 1, the thesis uses the first generation definition of AfL from the ARG (Broadfoot et al., 2002): 'The process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there' (pp. 2-3). The studies point to the need to investigate the purposes (Newton, 2007) for using assessment by probing the reflections on individuals' use of these strategies in their actions.

In brief, the challenges for teachers when implementing the spirit of AfL would seem to be even greater for student teachers for two reasons. First, in the English ITE system, they heavily rely on teacher-mentors' understanding of AfL, as these are the experts who mediate cultural knowledge in their feedback and advice for student teachers. Second, even if student teachers have a clear understanding of AfL, they are visitors in the classrooms of their mentors and cannot undertake the kinds of transformations in classroom dynamics that might be required to implement AfL rather than AoL.

2.5 Chapter summary

Cultural-historical theory allows me to frame student teachers' learning as a dialectic between the environment and the individual rather than as a transfer of learning across different practices from university to school placements. This perspective makes it possible to examine AfL as a pedagogical tool and how student teachers learn to use it in their actions in activities in classrooms. It also offers ways of illuminating how learning to teach happens in two different school placements through the tracing of student teachers' learning trajectories and the implications their transitions bring to their learning and development as teachers.

My premise is that learning to use AfL involves more than employing a list of strategies or techniques. One way of examining the purposes for using AfL involves looking at the epistemic functions it serves in a given activity (Engeström, 2007). This study is the first to examine how student teachers learn to use AfL as a pedagogical tool and within the subject area of secondary geography. Employing cultural-historical theory to explore how and why student teachers use AfL changes the way AfL is examined as a pedagogical tool and how student teachers' learning within and across practices is understood.

Chapter 3: Research design and methods

The aim of the study was to understand how secondary geography student teachers learnt to use Assessment for Learning (AfL) during their teaching in schools and addressed two research questions: (1) How and why do student teachers use AfL in teaching secondary geography lessons? and (2) What does an examination of AfL as a pedagogical tool reveal about student teachers' learning in their school placements? This chapter describes the study's research methodology and outlines: (a) the cultural-historical perspective; (b) research context; (c) pilot study report; (d) research design; (e) approach to data collection; (f) data analysis; (g) credibility of the study and (h) ethical issues.

3.1 The cultural-historical perspective

As described in Chapter 2, the study is built on Hedegaard's (1999) approach to understanding children's learning and development through examining how learners participate in activities that are located in institutional practices. Hedegaard's (2014) planes of analysis (Figure 2A) was used as an analytical resource to examine how the AfL practices in schools created the conditions for student teachers as they learnt to work with AfL strategies as pedagogical tools while teaching secondary school geography. Although Hedegaard has focused on children as learners, others have, with Hedegaard's approval, used the framework to consider learning among teachers and student teachers (Chan, 2014; Childs et al., 2014). The planes of analysis are relevant to the study because they allow a focus on the dialectic between the individual as an active agent and the demands to be found in practices, which is at the core of Vygotsky's understanding of human learning. Importantly, it does so by recognising how practices are historically constituted and informed by wider societal expectations.

The primary focus of the present study was on what student teachers did in relation to AfL in the activity of teaching: their actions in the activity and what their reflections on these actions gathered from post-lesson interviews revealed about their understandings of AfL. As explained in Chapter 2, Vygotsky argued that tool use in activities reveals how tools are understood. However, in the present study, Hedegaard's planes of analysis have served as a permanent reminder of the need to be aware of how schools interpret policy and how such interpretations are mediated in conversations between student teachers and their mentors. Consequently, interviews were also conducted with teachers and other members of staff at the placement schools to access the meanings given to AfL in each placement school and its geography department.

3.2 The research context

The research was conducted in three secondary schools working with an English university that offered a one-year initial teacher education PGCE programme. The PGCE, run by the Department of Education in the university, worked in partnership with secondary schools in the region. The schools involved in the partnership were located in several English counties in both urban and rural communities, with a majority being comprehensive state schools and inclusive of schools and colleges with students aged 11-16, 11-18, 13-18 and 16-19.

The programme prepared student teachers for Qualified Teacher Status (QTS) (Department for Education, 2013) and offered 60 masters credits. The course lasted 36 weeks, with a third of the input deriving from university-based sessions and two-thirds spent on school placements in two secondary partner schools. Student teachers were allocated to their first partnership school in the first and second term (T1 - September to December; T2 - January

to March) and progressed to their second school placement in the third term (T3 - April to June). In T1, student teachers were inducted into teaching by moving from observing to leading parts of lessons and team teaching. They progressed to teaching extended lessons during T2 and T3. During T2 and T3, student teachers were in schools on a full-time basis with the exception of the three departmental weeks (D) weeks where they spent the whole week in the university. The study focused on terms T2 and T3. Student teachers were, therefore, teaching in two different schools for the duration of the course. They received formal reports of their progress in relation to the QTS standards in each term, and the monitoring and assessment of pupils' learning and progress, which included AfL, was one of the criteria for the award of QTS.

3.3 Pilot study report

A pilot study was conducted during T3 in June 2012 at Sutton High (all names are anonymised in the thesis), one of the PGCE partnership schools that was not involved in the main study. I approached the school because two secondary geography student teachers were placed there for their final teaching practice. Conducting the pilot study with two student teachers and teacher mentors provided opportunities to gain more perspectives when compared to approaching a school with one teacher mentor and one student teacher. The two student teachers were Andy and Betty, and their teacher mentors were, respectively, Bryan and Susan. The student teachers were in their early 20s and had both graduated with a degree in Geography. The teacher mentors were experienced teachers. I informed the student teachers and teacher mentors about the exploratory nature of the study and what participation entailed prior to conducting the pilot study.

The goals of the pilot study were to trial data collection methods, situate myself in the fieldwork context and assess the feasibility of the longer term study. At the pilot stage, I was working with the following tentative research questions: (a) What do student teachers see as the purpose of using AfL in their teaching? and (b) How do student teachers negotiate the purposes and practices for using AfL in their teaching?

3.3.1 Data collection

The pilot study employed semi-structured interviews with the two teacher mentors and two student teachers and two lesson observations of each student teacher, each with short pre-lesson interviews and longer post-lesson reflective interviews with the student teachers based on the observations. All interviews were audio-recorded. The semi-structured interviews with the student teachers focused on general aspects of their teaching and on the expectations placed on them for using AfL in their teaching. Interviews with the teacher mentors centred on understanding the school and departmental policies on AfL, their use of AfL in teaching and expectations for their student teachers' use of AfL. Each semi-structured interview lasted approximately thirty-five minutes and was conducted in Susan's office.

Two of each student teacher's lessons were observed with pupils ranging from years 8 to 9. Teacher mentors were present in all four lessons. Prior to the lesson observations, pre-lesson interviews were conducted to gain a general understanding of the student teachers' intentions for each lesson. Lesson observations were aimed at observing student teachers' actions with AfL in the classroom. No videos of student teachers' teaching were recorded. Instead, notes were taken during each of these lesson observations to facilitate the post-les-

son interviews. After each lesson observation, post-lesson interviews were conducted to elicit student teachers' reflections on using AfL in their teaching. Lesson plans, lesson observation notes and classroom teaching materials such as PowerPoint slides were used to stimulate discussions in the post-lesson interviews. For example, ‘How did using AfL helped your pupils to learn in your lesson?’ and ‘What was the purpose for using AfL in your teaching in that session?’ were central questions asked during these interviews.

All interviews were fully transcribed after the pilot study. The data analysis took the form of re-reading the transcripts to get a sense of the data and making inferences about their motives and what student teachers understood as the expectations and demands of school practices. The analysis was therefore a close examination of the themes that arose from the research questions, which included student teachers' purposes for using AfL in their teaching; the school's expectations for teachers' and student teachers' use of AfL; teacher mentors' expectations for student teachers' use of AfL; and how and why student teachers used AfL in their teaching.

3.3.2 Lessons arising from the pilot study

Several lessons emerged from the pilot study that informed the design and conduct of the main study. These issues included conducting pre- and post-lesson interviews; order of the interviews; interviewing skills and the feasibility of conducting mentor-mentee feedback sessions.

i) Pre-lesson interviews

In the pilot study, pre-lesson interviews were conducted in the staff room and outside the classroom. The main difficulties in conducting these interviews were arranging them and a concern about whether they constituted additional work for the student teachers. These interviews were especially difficult to conduct when student teachers taught consecutive lessons. Two of the pre-lesson interviews were conducted while walking with the student teachers to their classes and continued outside their classrooms before teaching. When in the geography department before the lessons, I typically observed student teachers were normally busy photocopying classroom materials, looking at their lesson plans and getting feedback with classroom teacher or mentor. It seemed inappropriate to conduct the interviews in front of the teachers and teacher mentors in that setting. If the lesson involved the use of PowerPoint, student teachers would enter their classrooms slightly earlier to set up their teaching. As such, I felt that conducting these interviews, even though brief, would be disruptive and intrusive to their normal teaching routines, as they would need to take time off to accommodate my demands. The decision to include pre-lesson interviews in the main study would depend on student teachers' willingness to have these interviews conducted.

ii) Post-lesson interviews

In conducting post-lesson interviews, there was a need to consider the workload of the student teachers and the time of day. When I scheduled a lesson observation at the end of the day one Friday, I was not aware that Andy had been teaching for four consecutive lessons. Due to his busy schedule, he felt tired and requested for the post-lesson interview to be re-scheduled. Re-scheduling a post-lesson interview would be impractical for the main study as it was to involve more than two student teachers in more than one school. In addition, it

also carried the possibility of memory-decay in student teachers' reflections on their lessons. Addressing the issues of conducting pre- and post-lesson interviews in the main study required informing student teachers in advance about how and when data were to be collected and whether it would be practical for them.

iii) Interview skills

After reading the interview transcripts, I concluded that I did not probe student teachers and teacher mentors enough during the interviews and missed opportunities for further elaboration on their views. To improve my interviewing skills, I sought advice on ethnographical interviewing for eliciting responses and probing participants (Spradley, 1979). I found that it is important to ask more descriptive questions such as 'Could you tell me more …', 'Could you describe in detail …' and 'Tell me about a time when …' (Spradley, 1979, p. 46). These ideas were built into the interview prompts for the main study.

iv) Mentor-mentee feedback sessions

The audio recording of mentor-mentee feedback sessions was an intended data collection method. While both teacher mentors and student teachers agreed to have these sessions recorded without my presence, these sessions did not take place as both teacher mentors were busy during the final weeks of student teachers' placement. Consideration needed to be given to whether this data collection method would be feasible in the main study.

v) Order of semi-structured interviews

Interviewing the student teachers before interviewing the mentors was not an effective strategy because I had no background information on how AfL was used in the school or on what was expected of the student teachers regarding AfL. Student teachers had difficul-

ties in describing the practices of AfL in the school and the geography department. By interviewing the mentors first, I would have been able to provide prompts in relation to how the department operated. For example, interviews with the mentors revealed how the geography department used level descriptors as an AfL practice. Such aspects were not brought up during the interviews with the student teachers, and it would have been useful to have known beforehand to prompt them. Therefore, in the main study, it was necessary to interview teacher mentors and professional tutors (i.e. the teachers who were the main links between schools and the university) ahead of the student teachers in order to obtain background information on the school, its AfL practices and the demands that these practices might make on student teachers in relation to the use of AfL.

3.3.3 Findings from the pilot study

The findings that emerged from the pilot study as well as the process of conducting the pilot study carried implications for the design of the main study. The responses to the questions asked also informed the main study.

i) Purposes for using AfL

Student teachers had different purposes for using AfL and had varied ways of interpreting AfL. Andy viewed AfL as part of good teaching practice. As he stated, 'The easiest form… of AfL is questioning within the class... because you ask a kid a question, he answers it correctly, that is Assessment for Learning right there' (Interview, Andy, June 2012). He saw questioning as a practical and important aspect of using AfL in his classroom teaching, where the recalling of facts provided evidence of pupils progression and learning. He dis-

liked the idea of having an AfL tick-box attached to his teaching and expressed frustration about what AfL meant throughout the PGCE year.

> *You know... everyone is always talking about it. But you know, you could call it baboon's pajamas and I will still do it [AfL]... Hated [AfL] for a long time because I did not understand what it was... no one ever explains it to me and they just talk acronyms and I am just... I do not know what they are talking about... I find it hard to say about AfL when people talk about AfL... I still do not purely understand how people can write whole books on it. It is sort of this abstract concept to me... so yeah, the struggle with it is this kind of intellectual, academic concept of it, which frankly I am not even going to get involved in. I will do it in my classroom and make sure that at the end of the day every… try get every kid to have learnt and progressed. And therefore I am achieving AfL, that is my view. (Interview, Andy, June, 2012)*

On the other hand, Betty saw AfL as a way to help pupils learn, as it broke down their learning into manageable chunks. She used peer assessment and the setting of clear lesson objectives as ways to incorporate AfL into her lessons. While Betty appreciated the principles behind AfL, she was unsure about how her pupils dealt with and learnt from using AfL strategies. Unlike Andy, Betty found it unrealistic to implement AfL in every lesson as not all lessons lent themselves well to AfL.

These findings clearly showed that the student teachers saw different purposes for using AfL, which meant they used it differently in their teaching. It also appeared that Andy's use of AfL was leaning towards AoL rather than AfL because of the emphasis on recalling facts rather than viewing it as a stimulus for how he might take their learning forward. Although Betty used AfL to help pupils learn, she was unsure about the purposes behind using AfL. Similar findings have been reported elsewhere on the different conceptions stu-

dent teachers may have of formative assessment (Taber et al., 2011) and how they value and use AfL (Winterbottom et al., 2008). The findings from the pilot study alerted me to the need to take nothing for granted and that when student teachers use the term AfL they might mean very different things.

ii) AfL as a planned activity

The pilot was conducted in the final weeks of the PGCE year; I had assumed that student teachers were at an advanced stage of learning to teach and that a coherent approach to AfL would have been a regular aspect of their teaching. However, I found that AfL was still something they planned for, and only two of the lessons I observed had AfL as part of the planning. The pilot study revealed that there were two main reasons for the planned nature of using AfL.

Firstly, student teachers had to work on other aspects of their teaching to meet or exceed the standards reflected in the descriptors in QTS (Department for Education, 2013). Hence, when planning lessons, student teachers would indicate the particular aspects of teaching that were focal points for them. Secondly, student teachers were motivated to develop and further enhance their skills and techniques in other aspects of teaching and not just AfL. For instance, Andy was interested in differentiation, whereas Betty focused on the special needs of pupils. Somewhat surprisingly, neither of these topics led to a parallel focus on AfL.

Two implications arose from this finding in relation to the design of the main study. Firstly, student teachers may have different aspects that they focus on during the year, and these aspects do not necessarily involve AfL. Consequently, it would be difficult to identify and

recruit student teachers who may have a focus on AfL at the start of the PGCE year. Secondly, as lessons may not have AfL planned for in their lessons, I would need to convey my expectations to the student teachers regarding what I would like to observe during their lessons. These expectations were important because student teachers appeared to see AfL as a distinct topic as opposed to one that could be integrated into other areas, such as differentiation.

iii) Demands for using AfL

The pilot study had also revealed that teacher mentors had different expectations for their student teachers' use of AfL. For example, Susan was an advocate of AfL and expected AfL to be a regular aspect of student teachers' teaching practice. This expectation could be related to her position in the school as an Advanced Skills Teacher who conducted Continuous Professional Development (CPD) on AfL in the school. On the other hand, Bryan valued the principles behind AfL but did not think AfL could regularly be used in teaching. He was concerned about student teachers using AfL in every lesson without a purpose.

What mentors agreed on was when AfL should be a focus for the student teachers in the PGCE year. They suggested student teachers should not be focusing on AfL in T1 and should instead prioritise lesson planning and classroom management. They expected student teachers to begin thinking about and implementing AfL only in T2 and T3. This finding was influential in shaping the design of the main study because it suggested that it would be more worthwhile to conduct the study during the T2 and T3 rather than T1. It also suggested that AfL was seen as a higher order aspect of teaching for the student teachers.

In brief, the pilot study usefully confirmed the relevance of the research questions and identified problems in the research design and data collection methods. Addressing these issues prior to the study enabled an improved research design, enhancing the rigour of the main study (Sandelowski, 1986). Above all, the lessons learnt allowed me to present a clear picture of the commitment required of the student teachers when negotiating their involvement in the main study during the PGCE year.

3.4 Research design of the main study

3.4.1 Overview of the research design

The purpose of the study was to understand how student teachers learn to implement AfL across space and time. I followed the student teachers' learning trajectories (Dreier, 1999, 2003) as they participated in two different institutional practices, engaged in different activities and met different demands in these activity settings (Hedegaard, 1999). The design of the research took into account the structure of the PGCE programme, findings from the pilot study, the recruitment of participants and the cultural-historical perspective which focused on student teachers' actions in activities.

In each of their school placements, each student teacher was assigned a teacher mentor and a professional tutor. The student teachers, their teacher mentors, a professional tutor and the deputy head from each school were participants in the study. The initial intention for the research design was for student teachers to move between the same two schools, so that I only negotiated the research study with two schools and established rapport with school staff. However, as I shall explain, this intention could not be carried out.

Data were collected at several points during T2 and T3. The data collection methods included semi-structured interviews, lesson observations, post-lesson reflective interviews and the collection of relevant documents. As will be explained, the use of pre-lesson interviews and audio-recordings of mentor and mentee discussions were eventually discarded from the study.

3.4.2 Selecting participants and schools

While the purposive sampling of schools on the basis of different approaches to AfL would have been preferable, a convenience sample (Stake, 1995) was selected entirely for logistical reasons, as I needed to be able to track the same student teachers over their school placements in T2 and T3. Access to the schools, traveling time and determining the sample size were important considerations in terms of the organisation and management of the research project. For these reasons, schools located within a 20-mile radius of the university that accepted two secondary geography student teachers for each placement were approached. The trade-off did not appear to disadvantage the design of the study, as considerable differences in approaches to AfL were captured in the study.

In a typical PGCE year, it is rare to have more than one secondary geography student teacher placed in each school. During the PGCE year (2012-2013), only three partnership schools accepted two secondary geography student teachers for their school placements. From the three shortlisted schools, I approached two of these schools (Beaufort High and Sydney High) to ask them to participate in the study. They were selected due to their public transport accessibility.

Negotiations to gain access for conducting the study in both schools took place during November 2012. The professional tutors and teacher mentors from both schools were contacted. At that time, the broad aims of the study and the voluntary nature of participation were discussed. In addition, the research timetable was described, and the focus on student teachers' learning in schools was emphasised. I informed the teachers that I had obtained ethical approval (Appendix 1) to conduct the research as well as an enhanced Criminal Records Bureau (CRB) clearance. Anonymity was also assured in any publications arising from the study. Both the teacher mentors and the professional tutors in the two schools agreed to participate and signed consent forms. As I was interested in aspects at the school policy level, I received the recommendation to conduct interviews with the deputy heads. As such, information regarding the study was disseminated to deputy heads in both schools by the respective professional tutors. I then proceeded to contact the deputy heads and the student teachers from both schools.

I met the four student teachers in the university and explained the aims of the study and the rationale for approaching them. They were informed that I was a doctoral student from Brunei, and had no involvement with the PGCE programme in the university. The purpose of the study was described and explained, and an overview of what their participation in the study entailed was provided. In addition, the details of how data were to be collected over the two terms were carefully explained. I requested to observe lessons during which they had planned for AfL in their teaching.

As I have already indicated, the original intention of the research design was for student teachers in each school in T2 to swap schools after T2. However, one student requested to move to an urban school at the end of T2 and was thus placed at a third school in T3. The

student teacher was still keen on participating in the study. The change in placement did not disadvantage the study as it was a different school and context. It allowed for an increased variation of data in the study. Contacts were made with the teacher mentor and professional tutor at the third school at the end of T2. Both teachers agreed to participate in the study. The deputy head was not available for an interview.

3.4.3 Negotiating data collection methods

The student teachers expressed concerns and had questions about the study. For example, they wanted to know if participating in the study would benefit them, as it required sustained participation. I explained that the research would allow them to reflect on their learning and serve as a form of CPD throughout the PGCE year. The student teachers also questioned the feasibility of conducting pre-lesson interviews because of teaching schedules and reduced preparation time before a lesson.

One student teacher declined to participate if recordings of mentor-mentee sessions were required, as sensitive issues were often discussed. It was decided during the meeting that both audio-recordings of mentor-mentee feedback sessions and pre-lesson interviews would be abandoned in the main study because of the difficulties in employing these data collection methods, as well as concerns raised by the student teachers. These changes did not disadvantage the study, as I was still able to elicit topics raised during mentor-mentee discussions and student teachers' planning during our interview sessions. Modifications were made in interviews to enable student teachers to reflect on what occurred in mentoring conversations. Additional lesson observations and post-lesson interviews were negotiated to overcome the removal of these two data collection methods. Satisfied with the modified arrangements, all four student teachers agreed to participate in the study and

signed the consent form (Appendix 6). Tables 3.1 and 3.2 shows the student teachers, teacher mentors, professional tutors, deputy heads and schools across both terms.

Table 3.1
Participants and student teachers' school placements in T2

T2 (January to April 2013)				
School	Student Teacher	Teacher Mentor	Professional Tutor	Deputy Head
Beaufort	Clare	Mary	Fran	Renee
Beaufort	John	Darren	-	-
Sydney	Tom	Liz	Kathy	Paul
Sydney	Jane	Liz	-	-

Table 3.2
Participants and student teachers' school placements in T3

T3 (April to June 2013)				
School	Student Teacher	Teacher Mentor	Professional Tutor	Deputy Head
Beaufort	Jane	Darren	-	-
Beaufort	Tom	Mary	-	-
Sydney	John	Liz	-	-
Peabody	Clare	Amy	Alan	-

3.4.4 The student teachers

The student teachers in the study were in their early 20s, and all held a degree Geography. They taught a range of classes from years 7 to 10 with little opportunity to teach examina-

tion classes and A level classes. They taught at two different schools and had different mentors in each term, as indicated in Tables 3.1 and 3.2.

i) Clare

Clare enrolled in the PGCE because of her love of the subject. She recalled how much she enjoyed working in a wildlife club and volunteering to help with revision sessions in schools while completing her degree. She wanted to teach pupils how the world works and for them to develop a curiosity about both the human and physical sides of geography. She described her previous experience as a secondary geography pupil as boring, as the dominant form of instruction was standing and lecturing to the pupils.

ii) John

John had always been an avid geographer and enjoyed helping people to learn. He knew he wanted to be a teacher and carefully chose a BA in Geography instead of a BSc because he wanted to focus on the human aspects of geography rather than the sciences. He graduated top of his year. He was highly motivated to take up teaching because he wanted to inspire and help others to learn.

iii) Jane

Jane applied for the PGCE because she had always loved learning geography and wanted to teach children to enjoy learning geography as well. She was disappointed during her academic studies when she had to focus more on ecology instead of geography because much of the geography lecturers had left the university. She wanted pupils to be fascinated about the subject and inspire them to the idea that geography is always around them.

iv) Tom

Tom had specialisation in Geology from his degree. He had a strong passion for geography and prior to enrolling for the PGCE; he worked in a museum and conducted geography-based workshops. He was particularly keen on physical geography and was excited about teaching pupils to appreciate the nature and beauty of the subject. He wanted his pupils to be able to apply what they had learnt in the classroom to real life situations.

3.4.5 The partnership schools and teacher mentors

This section presents a brief out line of context of the schools and information on the teacher mentors in each school.

i) Sydney High

Sydney High was a large rural comprehensive mixed school catering to pupils ages 11-18 and had more than 2,000 pupils enrolled. The school had been judged as outstanding in several areas of teaching and learning in a 2011 Ofsted inspection. It was also ranked in the upper 60 percent for pupils' scores in GCSEs. The school was divided into two main sites: one for lower secondary and the other for upper secondary. Student teachers in the study also worked with other teachers and not only with their teacher mentor. The teacher mentor for the student teachers was Liz.

After completing her degree in Geography, Liz spent two years teaching English around the world. After returning from teaching abroad, she took up a PGCE in Secondary Geography. She completed her Newly Qualified Teacher (NQT) year at Sydney High and had been teaching at the school for four years. It was her second year of mentoring, and she had mentored seven student teachers. She was a Humanities teacher and taught History,

Religious Education and Geography across years 7 to 13. In T2, she mentored both Jane and Tom; in T3, she mentored John.

ii) Beaufort High

Beaufort High was a rural secondary comprehensive state school catering to pupils aged 11-18 years and had more than 1,400 pupils enrolled. In 2011, it was ranked in the lower 50 percent for pupils' scores for GCSE's. However, in a recent BBC league table report, it is now in the top 30 percent. Moreover, a 2013 Ofsted report highlighted that the 'Teaching is mainly good or outstanding, and that is why progress is improving rapidly'. The school was well equipped with interactive whiteboards, overhead projectors and resources for teachers to use in their classrooms. The use of mini whiteboards enclosed in plastic envelopes that had marker pens was a common sight in classrooms and appeared to be regularly used by teachers in the school. Most of the departments had their own designated block or area in the school, and student teachers had their room to work on their planning. The teacher mentors were Mary and Darren.

Mary was in her late 20s and had been teaching geography for three years. After completing her NQT year in her previous school, she moved to teach at Beaufort High. It was her first year of mentoring when the study was conducted. She taught geography from year 7 to the GCSE 'O' Levels. Clare was her mentee in T2; Tom was her mentee in T3.

Darren held a joint degree in Accounting and Geography, a PGCE, a Masters in Economics and a Masters in Teaching and Learning. He was aware of the significance of AfL in teaching and learning as his Education Masters focused on AfL and specifically on the effects of feedback comments. He had been teaching for eight years and was in his fourth year of

teaching at Beaufort High. He taught geography from year 7 to A levels and was the head of the geography department. He had mentored 12 student teachers over his six years as a teacher mentor. Darren mentored John in T2 and Jane in T3.

iii) Peabody College

Peabody College was an inner city co-educational comprehensive state school and college with pupils ranging from the ages of 4 to 19. Staff numbers were at 118, and the number of pupils enrolled were around 1,200 when the study was conducted. In 2011, Ofsted described the school as 'Good with outstanding features'. However, it had recently had a dip in their performance in school league tables, placing the school as one of the worst performing state-funded secondary school in the county. The teacher mentor was Amy.

Amy graduated with a degree in Geography and worked as a teaching assistant for a year before applying for a PGCE. She recently completed her NQT year at another school and was the head of the geography department, teaching classes from year 7 to A levels. She was also studying part-time for a Masters of Education. Clare, who came to Peabody College in T3, was her first mentee.

3.5 Approach to data collection

Addressing the research aim and the research questions required a data collection approach that enabled access to how and why student teachers used AfL and how the demands of placement schools, departments and teacher mentors shaped their use of AfL as a tool. As described in Chapter 2, a cultural-historical approach emphasises how we can access how and what people understand through close examination of how they use tools in activities (Ellis et al., 2010). Tool use reveals how the task is interpreted and how the tool and its

potential is understood (Engeström, 1990, 1999, 2007). The present study, therefore, needed to gain access to student teachers' reflections on their use of AfL as a tool in their teaching and to do so as quickly as possible after the teaching had occurred.

The data collection methods included using semi-structured interviews, lesson observations, reflective post-lesson interviews and a collection of relevant documents. The present study collected data during T2 and T3 at several points as shown in Table 3.3. Semi-structured interviews with the teacher mentors, schools' professional tutors and the deputy head teachers provided background information on the institutional practices of AfL and expectations placed on the student teachers in using AfL in their teaching.

The key data, in relation to the research questions came from the reflective post-lesson interviews and end of term semi-structured interviews with the student teachers. The post-lesson interviews took the form of stimulated recall sessions (Gass & Mackey, 2000), in which extracts from observations of their lessons were used to stimulate their direct reflections on how and why they had employed aspects of AfL in that lesson. The four student teachers were interviewed at the start and the end of each term. The end of term interviews focused on capturing their learning to use AfL as a tool in their teaching by comparing and contrasting data from the beginning of the term and lines of enquiry gathered from data collection throughout the term.

Table 3.3
Data collection timeline from T2 to T3

Data Collection in T2 (January to March, 2013)			
Month	**Data Collection Methods**	**Participants**	**Focuses**

January	Semi-structured interview	Deputy heads, Professional tutors, Teacher mentors	School and departmental practices in relation to AfL; expectations for using AfL in school and of student teachers; purposes for using AfL
January	Semi-structured interview	Student teachers	Background Information; purposes for using AfL; conceptions of teaching and learning geography; expectations of using AfL, school resources for AfL
February to March	Lesson observations, Post-lesson interviews	Student teachers	Reflections on the purposes of using AfL in their teaching
March	Semi-structured interview	Student teachers	Learning about AfL in T2; changes in their thinking; purposes and uses of AfL; what helped or did not help in their learning to use AfL
TRANSITION TO T3 Negotiation for research access in Clare's new school Data Collection in T3 (April to July, 2013)			
April	Semi-structured interview	Teacher mentor (Amy), Professional tutor (Alan)	School and departmental practices in AfL; expectations for using AfL in school and of student teachers; purposes for using AfL
May	Semi-structured interview	Student teachers	Expectations for using AfL in new school; differences or similarities in approaches to AfL and expectations in new and previous school

June	Lesson observations, Post-lesson interviews	Student teachers	Reflections on the purposes of using AfL in their teaching
June	Semi-structured interview	Student teachers	Learning of AfL in T3; changes in their thinking; purpose and uses of AfL from T2 to T3; what helped or did not help in their learning to use AfL
July	Semi-structured interview	Teacher mentors	How targets were set for student teachers; mentors' conceptions of their role; aspects of their own use of AfL.

3.6 Data collection methods

3.6.1 Interviews with teachers and student teachers

All semi-structured interviews (Kvale & Brinkmann, 2008) were recorded and transcribed, producing 11 hours of interviews from school staff and 12 hours of interviews with the student teachers. The semi-structured interviews with school staff and student teachers enabled me to 'to respond to the situation at hand to the emerging worldview of the respondent, and to new ideas on the topic' (Merriam, 2009, p. 90). The interview schedules were informed by a cultural-historical concern with AfL as a potential tool and attempted to elicit understandings of AfL as a tool, its potential, purpose and use (Appendices 2 to 5).

Teacher mentors, professional tutors and deputy heads were interviewed in T2 (or T3 in the case of Amy) before the student teachers were interviewed. Interview protocols were used as a guide in each interview with participants and served a different purpose for the participants involved. Interviews with the school staff focused on the schools' and depart-

ments' rationales for AfL as well as the demands on them and student teachers in relation to using AfL. Those for the student teachers broadly explored their understandings of AfL and how they used it. It also explored how the use of AfL were negotiated into and with school practices and expectations. A follow-up interview was conducted with the teacher mentors in July after the end of the PGCE year to follow up on lines of enquiry gathered from data collected in both terms.

Two semi-structured interviews were conducted with the student teachers in each term. They were conducted at the start and end of each term. The start of term interviews in T2 and T3 with the student teachers served different purposes. There were four main aims in the first interview with student teachers in T2. First, it aimed to understand their motivations for teaching secondary geography, their conceptions of good secondary geography teaching and how pupils learn in secondary geography. Second, it explored their perspectives on how AfL was used in the school and the geography department. Third, the demands placed on them for using AfL in their teaching were elicited. Fourth, their own rationales for using AfL in their teaching were discussed.

In T3, the start of term interviews centred on exploring the similarities and differences in the AfL practices and demands on them in relation to using AfL in their new school, in comparison to their former school. The interviews also examined how the transition (Beach, 1999) into their new school influenced their own rationales for using AfL in their teaching. All these interviews, therefore, elicited what they meant by AfL as well as how and why they were using it as a tool in their teaching.

Towards the end of each term, another semi-structured interview was conducted with the student teachers. The purpose for conducting the end of term interviews with student teachers centred on capturing their learning of the use of AfL during the term. The aim of carrying out this interview was to understand how and if their rationales for using AfL changed over time and what they thought led to those changes. As the study focused on following student teachers' learning trajectories through their actions in activities, I was constantly responsive to student teachers' accounts of their experience in their learning to use AfL (Morse, Barett, Mayan, Olson, & Spiers, 2008). Therefore, modified versions of interview protocols were created for the end of term interviews which were tailored for each student teacher.

An interview approach was needed to elicit and identify their learning to use AfL and, in particular, how they used AfL as a tool. I therefore adopted an adaptation of the 'past-present-future' interview approach (Nolen, Ward, & Horn, 2012, p. 272) for conducting the end of the term interviews. Nolen et al. (2012) employed their interview approach in their four-year longitudinal study of student teachers in a teacher preparation programme. The intention of their interview approach was to help and remind student teachers to reflect on what they said in the past, how they were dealing with it at the present and what plans they may have in future. For example: "In our first interview in T2, you mentioned that you saw AfL as a way of checking pupils learning — indicating the 'past', is this still the same for you at the end of T2? — indicating the 'present' and what are your future goals in using AfL? — indicating the 'future'". The study, however, did not include questions related to the 'future' in order to keep the focus on what they did during the PGCE year. Asking questions related to the future risked influencing their thinking; moreover, it

may suggest that I was expecting them to have goals for using AfL in T3. However, some student teachers did describe their longer term purposes for using AfL during these interviews. The tailored interview approach was useful in capturing their changes in thinking about AfL and their intentions for using it over the term. By the same token, conducting the interviews through this approach enabled member checks (Lincoln & Guba, 1985) to be conducted with the student teachers.

In the same way as at the end of T2, I followed lines of enquiry that emerged in T3 and modified the interview protocols to match the student teachers' learning trajectories and experiences. However, after completing the interviews at the end of T2, it was felt that the approach provided more structure than intended and led to limited responses from the student teachers. Modifications were made and less structure was provided at the end of term interviews in T3 to allow student teachers to respond more openly. Prompts were only used when student teachers had difficulty recalling their previous responses.

3.6.2 Lesson observations and post-lesson interviews

A total of 19 lesson observations followed by reflective post-lesson interviews were conducted across both terms. The purpose for conducting lesson observations followed by post-lesson observations was to probe student teachers' understandings and use of AfL through immediate reflection on concrete evidence of actions they had recently taken in the lessons (Calderhead & Shorrock, 1997). Prior to conducting the first lesson observation in T2, I reminded student teachers that I was not evaluating their lessons. I requested to observe lessons during which they had planned to use AfL in their teaching. It was also important for a period to follow each lesson observation in order to conduct a post-lesson

interview. Student teachers decided on and informed me of suitable dates to observe their lessons throughout the study.

Lesson plans and classroom materials such as PowerPoint slides were reviewed before each lesson observation. These materials were emailed to me before each school visit. Reviewing materials in advance was necessary to orient me to what they were going to teach in their lessons. The questions that I brought to each lesson observation acted as a guide to note-taking and focus during lesson observations (Hatch, 2002). Initial questions included (a) How and in what ways is AfL enacted in the classroom? and (b) What are the origins of these AfL practices? These questions became progressively focused as the study proceeded and examined the ways they were using AfL in their teaching. For example, throughout T2, I noticed Tom was constantly using mind maps as an AfL strategy in his teaching, which prompted my adding of 'How does Tom help pupils to learn through using mind maps?' to my observation questions.

The main purpose for conducting lesson observations was to create a resource that would allow me to embed my questions about using AfL as a tool in what I had seen the student teachers do. The data from post-lesson interviews were the key data as I sought to elicit student teachers' reflections on their use of AfL in their activities. Having been in the classroom watching them teach, I could legitimately ask them questions about their actions and show a genuine interest in what they were trying to do and why. The observations were therefore used only to stimulate the student teachers' recall of classroom events in the post-lesson interviews (Yinger, 1986). I did not analyse the observation data and make inferences about their understandings and use of AfL from the observations.

In order to observe, I positioned myself in the classroom where I could see both the student teacher and pupils and tried to be unobtrusive. The pupils were accustomed to student teachers being observed and I did not appear to be disrupting the usual flow of classroom activity. No videos or photographs were taken of student teachers teaching, and no structured observation instruments used during the lesson observations. Instead, notes were hand-written at five minute intervals on A4 paper. I created two columns on the paper to indicate what the student teachers did and what the pupils were doing. A laptop computer was not used for note taking to avoid distracting pupils. I focused on student teachers' instructions and interactions with pupils and also noted how and in what ways they were using AfL in their teaching. These lesson observation notes, together with lesson plans and classroom handouts, were used as stimuli to facilitate discussions in each post-lesson interview (Edwards & Protheroe, 2003).

Post-lesson interviews were conducted immediately following lesson observations at a quiet location in the school to decrease the likelihood of memory decay (Gass & Mackey, 2000). All post-lesson interviews were recorded and transcribed, producing eight hours of stimulated recall sessions with the student teachers. Each post-lesson interview began with the question ‘Do you have anything that you would like to tell me about your lesson?’, before asking questions about their lesson. There were no fixed interview schedules for post-lesson interviews because the interviews centred on responding to student teachers' explanations as they talked through their actions in activities.

The central questions in the post-lesson interviews focused on what they saw as the purpose for using AfL in their teaching and on the ways they saw AfL as helping their pupils learn in their lessons. I employed descriptive questions (Spradley, 1979) to probe student

teachers' explanations of how they had helped pupils learn in the classroom. For example, when a student teacher responded with ‘I mainly used questions in today’s lessons as an AfL technique’, I would then ask, ‘Could you tell me more about how using questions helped your pupils to learn in today’s lesson?’.

As the research progressed, I found conducting post-lesson interviews to be a delicate and sensitive encounter. At times, student teachers found it difficult to articulate what they did in their lessons, despite having materials to stimulate discussions. Attempts to probe and provide prompts often frustrated them (e.g. ‘Like I said’, ‘As I said before’, ‘I am not sure’). Aware of these issues, I was careful not to make these sessions stressful for the student teachers and moved on to other questions. Reminders were made and prompted in later interviews. Moreover, not all lesson observations were carried out as planned. A few of the post-lesson interviews had to be rescheduled because student teachers did not feel like being interviewed following difficult moments in a lesson such as pupils' misbehaviour. These interviews were then incorporated into the next post-lesson observations. Table 3.4 indicates the lessons and topics observed in student teachers' teaching during T2 and the duration of post-lesson interviews.

Table 3.4
Lessons observed and length of post-lesson interviews during T2

Student teachers	Lessons Observed	Year / Number of Pupils	Duration of Post-Lesson Interviews (Minutes)
John	Survival Geography - How could drilling harm the Inuit way of life Date: 31-01-13	Year 7/ 27	44
	Changing Faces and Changing Faces - Immigration in the UK Date: 21-02-13	Year 7/ 27	22

	Changing Faces, Shaping Places - Seeking Asylum in UK Date: 14-03-13	Year 7/ 26	31
Clare	Natural Disasters: Why would a boat be on top of a house? Date: 29-01-13	Year 8 /27	23
	Changing Climates: Why did Mrs Camara's stall close down? Date: 05-03-13	Year 8 /27	12
Jane	People and Places: Map Skills - Grid References Date: 07-03-13	Year 7 /25	10
	People and Places: Our Connections to the World (UK and Africa) Date: 08-03-13	Year 7 /25	17
	People and Place: Differences between the UK and Africa Date: 15-03-13	Year 7 /25	11
Tom	Natural Hazards: Mount St Helen Date: 07-03-13	Year 9 /30	44
	Natural Hazards: Impact of Volcano Eruption (Mt Pinatubo) Date: 15-03-13	Year 9/ 30	21
	Natural Hazards: Plate Boundaries Date: 22-03-13	Year 9/ 30	19

Lesson observations in T3 began after conducting the start of term interviews with student teachers. However, the interviews began two weeks after the term had started because the student teachers required more time to settle into their new school. As I will point out when discussing the findings, the transition (Beach, 1999) for two of the student teachers was far from smooth. During T3, student teachers were sometimes involved in teaching for public examinations or were focused on very specific teaching activities such as supporting pupils' fieldwork in their schools. Therefore, there were fewer opportunities to observe their classroom teaching. The shorter term time and the types of activities student teachers

were engaged in resulted in conducting the interviews at a much later date, which led to a restricted amount of data that could be obtained during this period.

As a result of these restrictions, I made use of the available time during post-lesson interviews to discuss more general aspects of the study and follow up lines of enquiry arising from my initial analyses of T2 and T3 data. The application of this approach enabled me to use the available time effectively. Lesson observations and post-lesson interviews ceased a week before their school placement ended. Table 3.5 indicates the lessons and topics observed in student teachers' teaching during T2 and the duration of post-lesson interviews.

Table 3.5
Lessons observed and length of post-lesson interviews during T3

Student teacher	Lessons Observed	Year / No of Students	Length of Post-Lesson Interviews (Minutes)
John	Extreme Environments: Copenhagen 2009 Date: 08-05-13	Year 9/ 25	58
	People and Places: Fieldwork Preparation Date: 20-05-13	Year 7 / 28	24
	People and Places: Fieldwork in Sydney High Date: 03-06-13	Year 7 / 28	29
Clare	Megacities: Migration (Pull and Push Factors) Date: 04-06-13	Year 9 / 25	19
	Geography Assessment on Crime Date: 10-06-13	Year 9/ 25	24
Jane	Ice Landscapes: Is Galtur protected Date: 13-05-13	Year 7/ 27	22
	Oceans: Why did the protestors stop the boat? Date: 22-05-13	Year 8 / 24	24

Tom	Feedback from Fieldwork at Beaufort Date: 18-06-13	Year 7/ 28	30

3.6.3 Collection of relevant documents

Relevant documents that the student teachers used were collected during their teaching. Such material provided evidence of classroom practice (Clare & Aschbacher, 2001; Ruiz-Primo & Li, 2013). Documents on AfL from the schools and mentor feedback sheets were also collected. Most documents were easily obtained; however, some student teachers were less confident in showing me their mentor feedback sheets as they were quite personal to them. Collected documents were used during semi-structured and post-lesson interviews with the student teachers to facilitate discussions.

3.7 Data Analysis

3.7.1 On-going data analysis during the data collection period

The goal of data analysis is to examine patterns and relationships that emerge from the data collected and to obtain a better understanding of them (Punch, 2005). I had a very clear focus — i.e. how and why student teachers were using AfL as a tool in their teaching. Nonetheless, I wanted to remain sensitive to other messages from the data. Therefore during the data collection period, I considered Miles and Huberman's (1994) advice that data collection and analysis should be a cyclical process of thinking about the existing data collected in order to generate strategies in collecting better data throughout the whole study. For example, notes taken in each semi-structured interview, lesson observation and post-lesson interview were converted to ‘contact summary sheets’ as soon as possible (Miles & Huberman, 1994, p. 51). Contact summary sheets included aspects that struck me as inter-

esting and surprising. It also included keeping track of data that I managed to collect and not collect, as well as data that should be collected in the future (Appendix 7). They were written prior to collecting subsequent data, except in circumstances where consecutive interviews or lesson observations were conducted. Under these situations, I made initial notes and converted them to contact sheets at a later time.

The sequential approach to data analysis and collection enabled a sustained focus on the key object of enquiry and also remained open to other concepts, which were identified as the research progressed (Corbin & Strauss, 2008). The approach of on-going analysis was practical for the present study because data collection took place at several points. Gaps between these points afforded opportunities for checking the data collected and for initial analytical insights to develop (Patton, 1980). Several validation checks were made with the student teachers throughout the study through using this sequential approach. For example, end of term interviews in the two terms, post-lesson interviews in T3 and follow-up interviews with teacher mentors after the PGCE year allowed for respondent feedback on the initial analyses I had made. Nonetheless, although data analysis and collection frequently constituted an inter-related process there were more distinct stages of data analysis during and after the study.

3.7.2 Stages of data analysis

i) During fieldwork

The first stage of data analysis began after completing the data collection in T2. Interview data were transcribed, field notes were sorted and the collected data were verified. Data analysis at this stage involved initial data sorting and assigning preliminary codes to the

data. Hedegaard's (2014) planes of analysis (Figure 2A) was utilised as an orientating analytical framework to explore how student teachers learnt to implement AfL in their teaching through participating in institutional practices. It also kept me alert to the influences of institutional expectations and possibilities. Working with the raw data in this way enabled lines of enquiry to develop and be pursued with participants in T3. The constant pairing of data collection and analysis carried on in T3. I paid attention to the transitions they made, the implications of these transitions for their learning trajectories and how they were managing their learning to use AfL in T3. It was important to follow up lines of enquiry that were developed in T2 and were present throughout T3 to prepare for the end of term interview questions for both student teachers and teacher mentors.

ii) Post fieldwork

To prepare ground for the second stage of data analysis, all remaining interviews were fully transcribed, and notes from the fieldwork were sorted in chronological order according to the school, participants and dates associated with the completion of the fieldwork. The detailed reading of all the transcripts followed, which involved a line-by-line review to obtain a general sense of the data collected and to reflect on possible meanings (Creswell, 2003). As the data analysis progressed, the organisation of the extensive amount of data collected became increasingly difficult to manage by paper and pen. As such, a qualitative data analysis software was sought, and ATLAS.ti (2015) was selected to sort and manage the data collected. The software also enabled the tracking of analytical memos, as well as the development, modification and abandonment of codes and categories. The steps above provided the necessary groundwork for the next stage of data analysis.

The third stage of data analysis began after reading the entire data set twice. Structural coding (Macqueen, Mclellan-Lemal, Bartholow, & Milstein, 2008; Namey, Guest, Thairu, & Johnson, 2008) was used as a data analysis strategy for further data sorting. The approach to structural coding involved assigning and developing codes that were question-based rather than thematic (Namey et al., 2008). Using this approach to analyse the data set was appropriate for this study because the interviews in the study were largely semi-structured in nature, and similar probes were often repeated during interviews (Namey et al., 2008). For example, 'How did using AfL in this lesson helped pupils to learn?' and 'What were some of the ways in which student teachers used AfL in their teaching?' were structural codes. An example of a structural code is provided in Appendix 8. The purpose of using structural coding is to make 'subsequent analysis easier by identifying all of the text associated with a particular question and associated probes' (Macqueen et al., 2008, p. 124). I was aware that using such an approach in the analyses may appear to reduce and decontextualise the data through the filtering of relevant and non-relevant data. The intention was to reduce the data in order to provide a focus on the analysis, to identify themes emerging from the study and to prepare ground for more focused stages of data analysis. Miles and Huberman (1994) explained data reduction in the following way:

> Data reduction is not something separate from analysis. It is part of analysis. The researcher's decisions - which data chunks to code and which to pull out, which evolving story to tell - are all analytic choices. Data reduction is a form of analysis that sharpens, sorts, focus, discards, and organises data in such a way that 'final' conclusions can be drawn and verified. (p. 11)

Employing structural coding was useful in generating broad patterns and themes on their use of AfL and the demands held for its use in the schools. However I eventually abandoned the strategy as the analyses progressed because it did not enable me to go further in answering the research questions. Abandoning this strategy was not a wasted attempt as I kept what I had found but worked with it in a different way.

In the fourth stage of analysis, I began with an application of the open coding to the data collected and to the themes that were identified. During this phase of the analysis, I was aware of the 'coding trap' (Gilbert, 2002, p. 218) and that it was important to not get too close to the data without taking a step back and obtaining a broader view of the landscape of the data (Gilbert, 2002; Richards, 1988). Drawing concept maps (Appendices 9 to 10) of the data to make connections across the data as a whole was one of the strategies I used to create analytical distance from the data I had collected (Richards, 1988). The second way of gaining analytical distance was through writing memos (Lempert, 2007) during the analysis process and reviewing the data I had collected (Appendix 11).

iii) Focused stages

The fifth stage involved focused stages of the data analysis as I sought to build a case-by-case comparison of how the student teachers were learning to use AfL. At this stage in the analytical process, I held the analyses made in the previous stage against concepts found in the literature. Here, I particularly focused on an understanding of student teachers' learning derived from Vygotskian approaches to the study of learning and teacher education (Ellis et al., 2010; van Huizen, et al., 2005). This process allowed me to further refine the categorisation of student teachers' uses of AfL.

In generating categories, I was also alert to ‘counter-evidence’ (Hatch, 2002, p. 171) through constantly comparing and contrasting data across student teachers, teacher mentors, professional tutors, departments and schools (Glaser & Strauss, 1999). The constant comparison approach enabled me to examine the different reasons for using AfL given by the student teachers over time. The approach also revealed how and why they used AfL in relation to the demands and expectations found in the practices of the schools they inhabited (Edwards, 2010a). Perhaps even more importantly, the constant comparison approach allowed me to preserve a sense of the multiple social realities that were evident in the data (Glaser & Strauss, 1999), such as the student teachers' need to please teacher mentors in different schools.

One of the striking themes, as already indicated in the pilot study, was how participants seemed to describe and label what was considered as AfL but was AoL instead. It became important at this stage of the analysis to carefully define and qualify what was meant by AfL in order to address misconceptions about AfL and these were presented in the findings chapters. Therefore, I drew on the literature on AfL as well as the definition used in the study (Broadfoot et al., 2002) to provide a lens to examine how teacher mentors and student teachers used assessment evidence to help pupils learn in the classroom as well as their understandings of AfL. To reiterate, the definition in the study employed the Assessment Reform Group's definition of AfL: ‘The process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there’ (Broadfoot et al., 2002, pp. 2-3). I interrogated the data and asked whether there was evidence of modifying teaching and learning activities as a result of assessments (Black & Wiliam, 1998a, 1998b) and the purposes of

the assessment (Newton, 2007). This clear definition of AfL allowed me to move to a close examination of how AfL was used as a tool to help pupils to learn in order to understand how student teachers made sense of AfL in their classroom practice.

As I studied the trajectories of each student teacher, I examined how they were using AfL as a tool, through using Engeström's (2007) typology of tools (see Figure 2B) as an analytical frame. The framing led to the following questions; 'What is AfL being used for?'; 'How is AfL being used?'; 'Why are they using AfL?' and 'Does using AfL serve a longer term purpose, the where to?'. Engeström's hierarchy of tool use, therefore, afforded the means to examine how student teachers used AfL as a tool in their classroom activities. By exploring the student teachers' use of AfL as a tool in the post-lesson interviews, I was able to elicit their understandings of AfL and their rationales for using it in the activity of classroom teaching. The post-lesson interviews also presented data that allowed me to use Engeström's (2007) categorisation of tool use to reveal how the student teachers interpreted the schools' and the teacher mentors' expectations in relation to AfL as a resource for teaching. The categorisation could also be applied to interviews with teacher mentors and other members of the school staff.

Once the detailed analyses had been undertaken, it was necessary to draw on them to build an analytic account of the student teachers' experiences. The building of the account drew on Vygotskian learning theory to analytically describe the SSD that each student teacher was able to create in their two school placements (Hedegaard & Edwards, 2014). Analysing the social situations of development that they were able to create in each setting revealed what was afforded or constrained in their learning to use AfL. In particular, it directed attention to the dialectic of person in practices (Dreier, 1999, 2003) that constitutes

the SSD. By following the student teachers in and across settings, it was possible to note their interpretations of the demands placed on them in relation to their use of AfL and how they responded to those demands in the classroom. Attention to the dialectic also allowed a consideration of how different demands for using AfL supported or hindered their learning to use AfL in their teaching and how agentic they were in taking forward any intentions they had to use AfL. Working with the data in this way enabled an understanding of how their participation in school practices shaped their understanding and use of AfL in their teaching.

It was at this point in the analyses that it became necessary to revise the original set of research questions. The data revealed that it was impossible to address the second research question: 'How do student teachers negotiate the purposes and practices for using AfL in the schools they are placed in?'. This conclusion was reached because the data showed little evidence of the student teachers being able to exercise the agency necessary for negotiation. This observation is itself a finding. What featured more prominently in the data was the broader evidence of their learning in relation to the dialectic of person in practice reflected in Hedegaard's (2014) planes of analysis.

The dialectic of the social situations of development that each student teacher created in T2 became a focus of the analysis in that phase of their trajectories. The interesting changes in the dialectic, arising from different demands when they moved to a new school in T3, indicated the need for a research question that focused more centrally on their learning trajectories within and across settings. The second research question was therefore changed to 'What does an examination of the use of AfL as a pedagogical tool reveal about student teachers' learning in schools?'. Looking at the data through the new research ques-

tion required examining the ways in which student teachers' learning, understandings, and rationales for using AfL were mediated differently in each school. It also raised the need to attend to the idea of transitions across practices. Here, the work of Beach (1999) on consequential transitions was particularly helpful. The second research question is addressed in Chapter 5, where I look across the four trajectories discussed in Chapter 4.

This discussion of data collection and analysis has focused largely on the person in activities and has paid less attention to school practices and how they mediated policy demands. This is because the study set out to follow the learning trajectories of the four student teachers as they attempted to use AfL as a tool in their teaching. However, the use of Hedegaard's (2014) planes of analysis ensures that attention is paid to the broader practices of the school and the motives that shape them. As such, there is also a focus on how schools mediated the demands of national policies in relation to classroom teaching and teacher education.

The demands placed on the student teachers in the dialectic outlined earlier originated in policy requirements. They were usually most evident in Ofsted expectations, which were mediated differently in each school and indeed at times by teachers in the schools. The focus on the student teachers and their trajectories has meant that these broader policy demands and how the schools mediated them, were mainly revealed through how the student teachers interpreted and responded to them. The interviews with the professional tutors and deputy heads did provide some background information on how the school worked with policy guidance in relation to assessment. However, the purpose of the study was not to describe or critique policy or to focus on how schools interpreted it. Instead, the aim was to focus on how policies filtered down into the demands made on beginning teachers.

3.8 Credibility of the study

3.8.1 Pilot study

The main study was carefully planned and re-designed after conducting a pilot study. The objectives of the pilot study were as follows: to assess the feasibility of the main study; to help me remain sensitive to professional demands in the field of study; to trial data collection methods; and to allow me to situate myself in the field as a stranger to UK schooling. In brief, it aimed at helping me formulate a data collection plan for the main study (Maxwell, 1998). The pilot achieved these purposes and revealed the need for modifications to be made in the research design and data collection methods. It also enabled potential problems in the main study to be addressed (van Teijlingen & Hundley, 2001). These changes included the timings of the semi-structured interviews and when these should be conducted; the order of interviews; the frequency of lesson observations and modifications to the post-lesson interview protocols; the feasibility of pre-lesson interviews and the recording of mentor-mentee feedback sessions. These changes helped me ensure that the study was not as disruptive to the normal routine of school-based teacher education as it might have been.

3.8.2 The main study

For the main study, I employed several strategies during the data collection and analysis stage to enhance the study's validity (Creswell & Miller, 2000), rigour (Morse et al., 2008), credibility and trustworthiness (Lincoln & Guba, 1985). These strategies included data source triangulation (Creswell & Miller, 2000; Patton, 1999; Stake 1995), member checking (Lincoln & Guba, 1985) and investigator responsiveness (Morse et al., 2008). I shall now explain how the strategies were applied in the study.

i) Validity

Validity in the study referred to how accurately the findings represent the phenomena that were studied (Schwandt, 2007). Data source triangulation was one of the strategies employed to enhance the validity of the study (Creswell & Miller, 2000) and was built into the study's research design to check 'if the case[s] remains the same at other times, in other spaces, or as persons interact differently … [and] … to see if what we are observing and reporting carries the same meaning when found under different circumstances' (Stake, 1995, pp. 112-113). In addition to interviewing a number of participants in the same school, I followed the learning trajectories and transitions of the four student teachers in two different schools. In doing so, I collected data through the use of consistent methods at several points in the study and observed student teachers in different contexts. The data revealed the varied experiences student teachers had in learning to teach and how they learnt to use AfL over the two school placements.

The study aimed to achieve internal validity (Shenton, 2004) as the sample of the student teachers was not meant to be representative of the wider population of secondary geography PGCE student teachers. I was therefore not claiming external validity and generalisability of the findings (Shenton, 2004). However, the theoretical framing has been an attempt to move the findings from description to analysis, and to present the findings so that they can be interpreted as relevant for other settings. This kind of validity has been termed as 'theoretical validity' and I have demonstrated how 'the validity of the concepts themselves as they are applied to the phenomena, and the validity of the postulated relation-

ships among the concepts' (Maxwell, 1992, p. 291) from the cultural-historical scholars I drew from for the thesis.

ii) Rigour and credibility

To ensure rigour to establish 'confirmability' (Sandelowski, 1986, p. 34) in qualitative research, one strategy I employed throughout the study to establish rigour was being a responsive investigator throughout the study (Morse et al., 2008). The cultural-historical approach taken in understanding the learning trajectories required me to be responsive to the data collected and to follow up lines of enquiry with the student teachers throughout the study. The coupling of data collection and data analysis (Miles & Huberman, 1994) as well as the nature of conducting the modified past-present interview approach (Nolen et al., 2012) provided the dual purpose of following up lines of enquiry and conducting member checks on collected data to enhance the credibility of the study (Lincoln & Guba, 1985). Conducting member checks at the end of term interviews in both terms provided opportunities to summarise and evaluate data collected on their learning to use AfL as well as their learning to teach in each term. The use of member checks became more frequent in T3 when post-lesson interviews were used as a means to counteract the restrictions on opportunities to conduct lesson observations. In addition, checks were also made in the follow up interviews with the teacher mentors after the PGCE year.

iii) Trustworthiness

The study required the sustained participation of the participants, and it was important for trust and rapport to be developed over the two terms. Prolonged engagement in the field was one of the ways in which trustworthiness was built into the study (Lincoln & Guba,

1985). Throughout the study, being non-judgmental, sensitive and transparent in the study were also aspects I strived to maintain as the research progressed. For example, Clare requested to see what I had written during the first lesson observation. I showed her my lesson notes and explained in detail that the purpose of the lesson observation was to see how she was using AfL in the lesson. I also reminded her that I was not evaluating her lessons. Clare did not request to see my lesson observation notes after the first lesson. She also began releasing documents such as mentor feedback sheets, which were often quite personal to the student teachers in the study and more difficult to obtain.

3.9 Ethical issues

Participation in the research was voluntary, and informed consent was obtained from the schools, teacher mentors, professional tutors, deputy heads and student teachers before the study commenced. Exact research questions were not disclosed to the participants, but they each received a research summary detailing the information and necessary participation required. The participants were informed about five aspects of the research. Firstly, that I had an enhanced CRB disclosure and ethical clearance from the university to carry out the study. Secondly, the student teachers were told that they could withdraw from the research at any time and did not have to give a reason for doing so. They were assured that they would not encounter any negative impacts if they withdrew (BERA, 2011). Thirdly, they could choose not to answer interview questions they were not comfortable in answering. Fourthly, confidentiality was assured and participants were informed that all materials and data were to be kept in a password locked computer. Lastly, they were told that names of schools and participants would be anonymised in written reports, presentations and the

written thesis. Schools and participants were informed that a brief report of the study could be made available upon request.

Several steps were taken to minimise the influence of the research on student teachers' use of AfL in their teaching and their understandings of AfL. Firstly, student teachers were notified that my role throughout the study would be a 'complete observer' (Gold, 1958, p. 221) and that I would not be engaged with activities in their lessons. Secondly, there were no attempts to impose upon any definition of AfL or to offer my views on AfL. Thirdly, they were informed that I was a researcher from Brunei who was trying to learn how student teachers learn to use AfL during their teaching in England, and had no involvement with the PGCE programme.

The study required sustained participation from the student teachers over two terms and involved observing their lessons where AfL was planned and used during teaching. Although steps were taken to minimise any possible influence from the research, it appeared student teachers were inevitably influenced as a result of their participation. For instance, student teachers became more aware about AfL from participating in the study. Here, Clare comments on the experience of participating in the study.

> *I think before doing this study I always did a bit of AfL, but I was not really aware of it. Since looking at all this AfL with you I have made a conscious effort to look it up myself and it has made a difference definitely to what I understand is AfL which I probably wouldn't have done had I not done this, I would not have focused on it so much.* (Interview, Clare, T3)

As the purpose of the study was to understand how student teachers learnt to implement AfL in schools, the data collection focused largely on what was happening in the schools,

rather than in the university. One of the complications in collecting data from the university concerned my supervisor who leads the PGCE in secondary geography. Interviewing him raised ethical concerns such as the possibility of an increased emphasis on AfL during the course. Therefore, I focused on student teachers' actions in activities in the school settings.

Chapter 4: Learning trajectories of student teachers' use of AfL

The chapter addresses the first research question, 'How and why do student teachers use AfL in teaching secondary geography?' by presenting the analyses of the learning trajectories (Dreier, 1999) of the student teachers separately. It focuses primarily on the accounts of their actions in classroom activities, as they learn to assess students through employing either AfL, or AoL, in two different schools. In the next chapter, comparisons are made across the individual trajectories to address the second research question.

Analyses in this chapter draw on Engeström's (2007) typology of tools in Figure 2B to reveal student teachers' understandings of AfL as a tool for promoting pupil learning. Whether the tool is indeed used for AfL or is actually AoL is also discussed. The categorisation of AfL is drawn from the definition of AfL by the ARG (Broadfoot et al., 2002) and the purposes of assessment outlined by Newton (Newton, 2007). Interview excerpts from student teachers in their two school placements and their transitions (Beach, 1999) between schools will also point to the extent to which they were able to create a form of SSD in each school placement and make progress in their use of AfL. I start by drawing on interviews with school staff to give some understandings of the public meanings given to AfL in the three schools in the study.

4.1 How the schools worked with AfL

4.1.1 Sydney High

AfL was seen as an important practice in the school and there were high expectations on teachers to use AfL regularly in their teaching. According to Kathy, the professional tutor, it was common to see teachers using AfL in the school's classrooms:

> *You will walk around the school, you will see it [AfL] in action, I am fairly confident I could take you into any lesson and somewhere there would be at least one example of an AfL strategy.* (Interview, Kathy, T2)

According to Paul, the deputy head, the school placed emphasis on the use of promoted strategies in the AfL literature to plan effective lessons and help pupils learn. These strategies included the use questioning and wait time, peer work and comment-based marking (Black et al., 2003).

> *The school policy is that all teachers use it [AfL]… to plan effective lessons, in order to help students progress in their learning, and that opportunities for AfL are built into every lesson… so the strategies around questioning and wait times, lolly sticks, secure questioning… so students have opportunities to discuss things before sharing it with their peer group.* (Interview, Paul, T2)

Other than these strategies, there were increased emphases on comment-based marking and engaging pupils in discussions which were seen as key AfL practices in the school.

> *Our assessment policy is based on the principles around Assessment for Learning. We would expect people to mark their students work regularly and that marking should predominantly be comment based… We expect people to ask questions and engage all students into classroom discussions where all students are contributing, but it is predominantly about the feedback where it is formulated into policy terms of we write down what we expect people to do.* (Interview, Paul, T2)

AfL had also been an important area in the professional development of their teachers. This was the only school in the study that had an AfL working group which provided in-house training for their teachers to learn, reflect, share and experiment with AfL strategies in their own classrooms. In the last four years (since 2009), fifty teachers completed their

nine hour sessions programme on AfL. Liz, who mentored both Jane and Tom in T2; and John in T3, completed the programme. The school placed high demands for teachers to use AfL regularly in their lessons and these demands extended to student teachers entering the school for their school placement.

There were also demands from the outset for student teachers to use AfL. The school conducted an introductory AfL session in the beginning of the PGCE year (September 2013) and was keen on encouraging student teachers to begin using AfL at an early stage of their teaching. One interesting aspect arising out of this AfL session was that student teachers in the programme only began learning about AfL in the university during November. Therefore, student teachers such as Tom and Jane had a much earlier exposure to AfL than Clare and John. The AfL session in the school aimed to expose and introduce student teachers to the AfL ideas in use in the school, strategies in relation to AfL and challenge their initial pre-conceptions on teaching and learning.

> *We run an introductory session fairly early for them in the first term, talking about Assessment for Learning, and just trying to challenge them with things that they will have probably learnt from their education… around hands up questioning in class, that is the prevalent culture in most classrooms, teacher asks the questions, the kid who puts his hand up first, gets to answer, so we try and challenge that fairly early… and that it is not sensible to give marks all the time.* (Interview, Paul, T2)

Student teachers were also expected to be increasingly articulate on the 'how' and 'why' (Engeström, 2007) aspects for using AfL as the PGCE year progressed. In other words, knowing the strategies for using AfL as well as the purposes for using those strategies. There was also a sense of progression implied from the school's expectation that student teachers would be using AfL in increasingly informed ways.

> *We would expect them to try things out… as they become more experienced and confident, we would expect them to have a more secure rationale about which strategies they are using for particular learning goals… I would expect to see that they can give me a rationale for why this particular questioning… lolly sticks, pair work, whole class discussion… Being able to articulate the overall strategies that they have chosen to promote learning… I expect them to be able to do that with confidence with AfL.* (Interview, Kathy, T2)

As part of their professional learning in AfL, student teachers were also expected to observe other teachers using AfL in other subject areas other than secondary geography to gain familiarity on how AfL was used in the school.

> *They are expected to do lesson observations, obviously the classes they are teaching but also they are expected to observe in other… curriculum areas… They are expected to observe other colleagues within their teams. So again, they would have exposure to AfL throughout those lesson observations.* (Interview, Kathy, T2)

4.1.2 Beaufort High

AfL was integrated into the school's assessment policy rather than having a separate AfL policy. AfL was a priority in the school and Renee, the deputy head, was a keen advocate for using AfL in teaching and learning. She was head of the Teaching and Learning group. The group managed and constantly updated a teaching and learning folder within the school's intranet system for teachers to have access to teaching and AfL-related materials. The group also created a teaching and learning bulletin that was sent out each week to all departments. Included in the bulletin were a range of teaching tips and AfL strategies for teachers to use in their classroom teaching.

There were a small number of core strategies teachers were encouraged to use such as self and peer assessment as well as giving formative feedback in pupils books. A common AfL strategy in the school was the use of level descriptors which was labeled as a form of 'compulsory AfL' according to Mary, one of the teacher mentors in the study. This was unsurprising given that the National Curriculum at the time contained attainment targets expressed in terms of level descriptors for all subjects. In the extract below, Mary described how assigning targets was an important practice in the school to promote pupil self-assessment. At the same time she reveals the potential confusion between AfL and AoL that was apparent throughout much of the data collection, among both teachers and student teachers.

> *For example, one of the things that we do regularly, every term... is a sort of compulsory AfL, at the top of the exercise books they have a target sheet where they are given a target from a previous assessment which will come into the next assessment in the next term… That's a way of self assessment and self marking in that sense.* (Interview, Mary, T2)

Darren, head of the geography department was more clearly focused on AfL as a way of building pupil understanding. He wanted the geography teachers to use AfL consistently in order to be aware of what pupils needed to focus on before their examinations. For the geography department, using AfL was a way of helping pupils progress towards the summative component of their learning in schools.

> *I am hoping that my class of teachers are using the range of formative assessment strategies to make sure they can then get students to that summative assessment, so then we get a true grasp of what they understand and what they don't, rather then having the summative assessment and then realising 'of yeah, they did not quite*

understand the tectonic processes' so they kind struggled on that and we should have tackled that earlier. (Interview, Darren, T2)

While the school expected teachers to use AfL regularly in their teaching, there was less consensus on what was expected of student teachers from the school and teacher mentors. It was felt that student teachers' use of AfL should be built up in stages rather than having a strong focus at the start because they were still developing their teaching. As we shall see in both finding chapters, Darren and Mary had different demands for their student teachers in using AfL. There were also differences to how the student teachers were supported in learning to use AfL in their classroom teaching.

4.1.3 Peabody College

According to Alan, the professional tutor, AfL was a priority for the school in 2011. The college had since shifted attention to areas such as Behaviour for Learning (BfL) and Philosophy for Children (PfC). He commented that the recent Ofsted inspection report at the beginning of 2013 provided evidence that AfL was already well embedded in the school.

Two years ago, it was our main priority, AfL. And then, last year, we felt that it was embedded well within the lessons. This year, we found that it is. And with about eighty-five percent of the lessons observed being good or outstanding… So we know that it [AfL] is embedded well within[the school]… Because if you do not show AfL, then it is very hard to hit that good outstanding mark within a lesson observation… So we know it is embedded in well, and it is not our priority at the moment. (Interview, Alan, T3)

Although AfL was no longer a school priority, the school expected AfL to be evident in all lessons. Though here, Alan explains AfL in terms of AoL.

> *Every lesson should have AfL running through it… it is called Assessment for Learning so you should be checking all the time if learning is taking place.* (Interview, Alan, T3)

The use of traffic lights promoted in the AfL literature (Black et al., 2003) was a common strategy employed in the school. Yet, its use was closer to AoL than AfL.

> *We get the students to highlight the lesson objective and, kind of like [highlight] green, amber or red, depending on whether they have understood it or not at the end of the lesson… that is the evaluation for the teacher to see instantly.* (Interview, Alan, T3)

Traffic lights were used as 'how' and 'when' tools for teachers to monitor pupils' understandings at the end of the lesson. The purpose of the strategy was to encourage pupil reflection on the lesson objectives by using the strategy. However, the strategy did not go any further on how pupils' responses could be used to modify teaching and learning activities (Broadfoot et al., 2002) but focused on what pupils had learnt in the classroom.

> *For us, it [traffic lights] is to check and to see whether students understood what they are being taught… and that is the key to it… that is the whole point. If the learning is taking place in that classroom, have they met the objectives which you have set out to meet with that class?... Having an instant idea about how that class is doing.* (Interview, Alan, T3)

This emphasis on AoL included meeting external demands from Ofsted evaluation requirements. Here we can also see how Ofsted expectations mediated the demands and practice in schools (MacBeath et al., 2007).

> *If you go into a lesson, you will see it [AfL]. Every teacher does it. And you are told when Ofsted, for example, will come in or when someone observes your lesson...*

> *come in and you stop the lesson and you do a quick AfL task… like, ask the students 'Do you understand?', What have they learnt?* (Interview, Alan, T3)

Here Alan was describing how and why using AoL was necessary to meet Ofsted demands. It seemed that the school had two main purposes for using AoL, checking pupils understanding and 'criteria compliance' (Torrance, 2007, p. 282) to external demands. In the following extract, we can see why using AoL was seen as an important tool for meeting Ofsted requirements.

> *As a whole school, you would not get ninety percent good and outstanding if there was no AfL going on… If there is no AfL in your lesson, then it is very hard to get a 'Good' for that lesson… It needs to be happening all the time. And I think we have embedded that in well over the last two years… So it is happening all the time.* (Interview, Alan, T3)

The above extract informs us of the kinds of demands that might be placed on Clare in T3. In these extracts, there was again limited evidence to suggest how assessment was seen as a tool to promote pupils learning through follow-on responses from teachers.

Peabody College also assumed that student teachers entering their second school placement in T3 were already at an advanced stage of their development as beginning teachers and therefore expected student teachers like Clare to be competent in using AfL by the time she joined them. The school saw their role as providing opportunities for student teachers to work on the QTS standards of the programme and did not want them to focus solely on a single aspect such as AfL.

> *You are assuming that they have done those [AfL] training sessions at their first school anyway… so that assumption is taking place... you [the school] are hoping*

> *that it [AfL] is already been embedded in their teaching… we do not push student teachers doing a certain aspect… we just look at the whole standards that need to be met… so we are judging those standards and making sure they have met the final ones… and secure on those as well… so AfL is quite a small part on that within their teaching on learning and the focus is on the others as well as AfL.* (Interview, Alan, T3)

One implication for Clare coming into T3 was that there would be low demands for her to use AfL and a further deferral of AfL as a tool to be acquired and mastered. According to Alan, the school placed more emphasis on AfL for their NQTs than they did for the PGCE student teachers.

4.1.4 Inconsistencies across schools

In summary, there seemed to be inconsistent purposes and understandings for using AfL across the schools (Boyle & Charles, 2010). Schools had different priorities for using AfL. For example, in contrast to Peabody College, Sydney High placed very high values and demands for both teachers and student teachers in their use of AfL. It is also important to note how the schools were using the label AfL but were frequently referring to AoL. This interpretation raises concerns as AfL is far more than about checking for pupils' understandings (Swaffield, 2011). As I have begun to indicate as well, there seems to be an emphasis on seeing AfL as ‘how’, ‘when’ and ‘why’ strategies in relation to Ofsted expectations. I now turn to the trajectories of the individual student teachers.

4.2 Clare

Clare's learning trajectory illustrates the limited opportunities she had for engaging with AfL in relation to pupil learning in both placement schools. Although given the label AfL

by her teacher mentors, the demands required her to use AoL. There were different motives for using AoL in each school, and Clare remained confused about what AfL meant at the end of the PGCE year.

4.2.1 Learning trajectory in T2

At the beginning of T2 in January, Clare had some awareness of AfL as a potential 'why' or even 'where to' tool, seeing it as a way of helping pupils to progress through reflecting on how they could improve. She saw AfL in terms of activities and strategies such as questioning, quizzes and showing examples of work in classroom practice. There was, however, some ambivalence in her description. It contained elements of AoL, simply checking what learners know, but also reflected her concern with how she might help students move forward.

> *I think it [AfL] is put into lessons in tiny ways. So you ask them a question and then you ask them why they thought that. Or you do a recap half way through, maybe a quiz half way through the lesson and see if they know the answers... It is kind of letting them know what they can do to improve by showing examples of work.* (Interview, Clare, T2)

She was surprised to learn, when she attended a university session on AfL in December 2012, that she was possibly implementing AfL, through employing techniques such as starters, plenaries and open questioning to help move students on. Recognising that she was to an extent using strategies that might be AfL, Clare sought to expand her repertoire. The extract below also indicates the role of the university in helping student teachers connect classroom experiences with public meanings (Edwards, 2009; van Huizen et al., 2005).

> *It was only when we learnt about AfL in the department [university] that I thought 'Oh ok, I have already been doing it a little bit and now I can do and add more things and I need to look more on AfL'.* (Interview, Clare, T2)

i) Low demands for using AfL

Although Clare recognised the 'why' and 'where to' potential of AfL, the demands on her as a learner in school did not enable her to develop this interest. There were a number of targets Mary identified for Clare before focusing on AfL. In T1, it was voice projection. Here we also see Mary mentioning AfL as something to be specifically planned for, rather than integrated in the way Clare had described it. As we shall see, this was not because Mary did not assess her pupils, but she saw AfL as a kind of technical add-on and the phrase 'nobody would do that AfL' suggests that it is form of formal testing for Mary.

> *She could plan the most amazing lessons, lots of AfL but if she cannot get that across [because of a soft voice] then nobody would do that AfL... I think something like AfL needs to be further down the line for someone like Clare.* (Interview, Mary, T2)

At the start of T2, Mary's expectations shifted to differentiation as Clare began teaching top and bottom set year 8 classes. Interestingly, Mary did not link AfL with differentiation.

> *I think she needs to focus particularly on differentiation at the moment… because that is something she has to learn very quickly. So, I do not think AfL is naturally coming to Clare's mind at the moment, but I have another term [half term] with her to work through those things to start of putting more creative ways of assessment for learning.* (Interview, Mary, T2)

It seems that Mary saw AfL and differentiation as different pedagogical tools and separate aspects of teaching. Although she initially suggested that AfL would be a target for Clare later in T2, she subsequently suggested Clare should leave AfL until T3, when Clare would be in another school. However, Mary eventually placed some demands on Clare to use AfL as the term progressed.

Mary's accounts suggest that she saw AfL as a technical feature, to be included through a staged approach to building competence. The lack of demands in relation to AfL was pointed out by Clare: "We do not sit down and say 'Let's discuss your AfL for the week'... that would not happen" (Interview, Clare, T2). There also seemed to be ambivalences in what was meant by AfL, reflected in Clare's surprise that she was actually using potential AfL strategies in November 2012.

> *I am told a lot about AfL but not in a way that is like… this is AfL, this is what you have to do… It is more like these are some of the strategies you should be using.* (Interview, Clare, T2)

Clare was therefore introduced to these assessment strategies as 'how' tools (Engeström, 2007) which were much closer to AoL than AfL; whereas, in university, the 'why' and 'where to' aspects of AfL as a tool had been emphasised to connect AfL with responsive teaching for moving children forward. Mary's demands did not require Clare to engage with these aspects of assessment. This lack of conceptual demand while in school carried implications for Clare's learning to use AfL, her rationale for using it and how she used it.

ii) AfL as how, when and why AoL tools

Closer examination of Clare's use of questions revealed that she was employing AoL to check for pupils' understandings. She made distinctions between questioning aimed at participation and checking for their understanding. The extract below illustrates this distinction and what she understood about AfL in T2:

> *Today I did lollypop sticks which is where everyone's name is on a lollypop stick and then people picked them out and they had to answer. In a previous lesson, I did a fruit machine which is like in an arcade, and they get selected at random and that person has to answer… but before that I did voluntary hands up… different ways of getting people to answer things… [but] those questioning techniques that I just mentioned were not necessarily AfL - that is just participation. Thinking about AfL is more like pushing them in questioning.*

According to Clare, for questioning strategies to be labeled as AfL, there was a need to push them in questioning. Here we can how she is using the techniques to shape her teaching in lessons, but even here there are aspects of AoL:

> *Like, make sure students are learning throughout, so using mini plenaries throughout the lesson rather than just one at the end. Questioning... pushing their knowledge, making sure they know what is going on, so lots of, not just asking just one question but a follow up question and different things like that.* (Interview, Clare, T2)

Although using the label AfL, Clare mainly used questions as ‘how’ tools for the purposes of AoL, checking what pupils knew. She rarely employed questioning strategies as ‘why’ or ‘where to’ tools to inform her future teaching and planning. Clare did note that Mary used questions in her own teaching in ways which reflected observations by Black et al. (2003), that open questions can help promote learning:

> *I picked up like the way that Mary used questioning... like questioning that expanded their knowledge, that kept being one of my targets… so instead of just saying you know 'what's the answer to this?', you ask them a more open question, and once they say something you are like 'oh, why do you think that?'… Just developing their knowledge and expanding their knowledge all the time.* (Interview, Clare, T2)

But Clare's own examples of how she used questions did not reflect that expertise. Interestingly, there was no evidence that this aspect of working with questions was shared by Mary in her conversations with Clare. Instead Mary seemed to focus on the careful accumulation of competence, step by step. Clare's use of questions was therefore primarily a 'how' AoL tool, focused on checking for pupils' understandings rather than gathering information on what pupils knew to modify teaching. The next tool and demand, end of lesson plenaries, also required Clare to focus on the 'when' and 'how' aspects of AoL.

Clare explained that she saw the purpose of plenaries as a 'how' AoL tool which would consolidate what pupils had learnt.

> *When you teach pupils something you can't be sure that they know what it is, so at the end you sort of consolidate their knowledge, you check what they have been taught.* (Interview, Clare, T2)

Key sentences in her descriptions of using plenaries included some 'why' aspects, but they reflected AoL. These descriptions included 'engaging pupils*',* 'consolidates pupil learning'*,*'enable pupils to reflect on what they have learnt', 'recapping what they had learnt', 'write anything they can remember' and 'consolidates knowledge'. Clare focused on using plenaries because it was a constant demand from Mary. Mary explained the purposes for using a plenary:

> *The idea of a plenary is to wrap up, summarise and check learning... it is making sure that all students are moving on at the same level… trying to extend their learning… trying to encourage people that are not quite so bright… it is great, when a plenary works really well and you think* '*yes, everyone gets this now*'. (Interview, Mary, T3)

For Mary, plenaries were emphasised as 'how' and 'when' AoL tools for checking pupils' learning and summarising what pupils had learnt. She expected Clare to use them in the same way in every lesson. But, as we shall see, Mary's emphasis on plenaries was shaped by how Ofsted judgments informed what mattered in the practices of the school.

> *Clare had a focus point of making sure she included plenaries in her lesson and every lesson… it took her a couple of weeks to really get that into her head quite a lot, so… I had to kind of say to her each time I was observing her, I said 'right, your focus point again is this'.* (Interview, Mary, T3)

Although Clare was using plenaries as a 'how' tool, she also had to focus on 'when' she should use it in her lessons and as a 'why' tool to avoid receiving negative feedback. She repeated a comment she received from Mary for not including a plenary in a lesson:

> *[Mary] commented… 'You should always follow through to the plenary' … The problem is… we are kind of judged on what a perfect lesson should be and everybody knows all your lessons can't be excellent but she has a comment there that I did not have a plenary and that was not very good.* (Interview, Clare, T2)

Through her concern with Ofsted's inspection and evaluation of teaching, Mary was mediating demands from what matters (Edwards, 2010a) in the school practices. The demands required Clare to use mini-plenaries whenever possible in order to gauge what pupils had learnt. However, this appeared to be at the expense of Clare's learning of how a plenary

could potentially be used as a 'why' or 'where to' AfL tool to inform how she should adjust her teaching.

> *[Clare] would plan a plenary and she would never deliver it... and with an Ofsted hat on… that has to happen in the lesson, either in the middle of the lesson, end or somewhere where you think… Right, do these students understand what is going on here?* (Interview, Mary, T3)

There were limited demands for Clare to understand the 'why' and 'where to' of using a plenary as an AfL tool. The reference to Ofsted inspections is particularly telling; here Mary was using Ofsted requirements as a benchmark to make judgments about Clare's use of assessment. These external demands were shaping the motives in the practices of the school and mediated in the feedback given to the student teacher.

iii) Challenges in creating a learning dialectic

With the focus on responding to the 'how' and 'when' of using AoL to check for pupils' understandings and the lack of engagement with AfL, it was not surprising that Clare found AfL to be a perplexing concept to learn and use. She described her frustrations in understanding what AfL was and made a comparison with differentiation.

> *I think sometimes because AfL is quite broad it is sometimes difficult to pinpoint where you are putting it in, so I have to actively think 'that is AfL' and 'that is AfL', rather than 'I am sure that it is there in other places'... I just don't pick up on it... because it is such an undefined concept really. I mean Assessment for Learning incorporates so many things that it is hard to tell where it is occurring - hard to pick up on exactly where you are putting it in… I know what differentiation is, for example, but AfL… I could not tell you all of those things because there are so many of them.* (Interview, Clare, T2)

Thinking about AfL in terms of strategies which were introduced to her as AoL strategies unsurprisingly confused Clare. She seemed unable to focus on the 'why' and 'where to' aspects of AfL. As a result, Clare wanted a resource with a simplified version of 'what' AfL was to enable her to learn 'how' she could use AfL in her teaching.

> *What you basically need is a sheet that says 'These are some good strategies of AfL' , 'AfL is this - nice little definition' then everyone would be happy, but the thing is... It is so broad... With a little booklet, I could go through and tick them all off, but trying to think through in my head and ask: Is this AfL? is this AfL? I am sure I would miss something.* (Interview, Clare, T2)

The lack of discussions on the rationale for using AfL in school appeared to have made AfL a difficult pedagogical tool for Clare to employ. Although Mary supported Clare to include AoL strategies in her lessons, the lack of conceptual demands in engaging with AfL's meanings and purposes as a 'why' or 'where to' tool for responsive teaching, were low.

At the end of T2, Clare explained that her rationale for using AfL, given at the start of this chapter, remained unchanged. What had changed was how she began to see how AfL could be incorporated into her teaching: 'Before I might have only thought of a few strategies of AfL but now I see there are lots of ways of getting it into a lesson' (Interview, Clare, T2). However, she was using them as AoL strategies for checking pupils' understanding rather than as a pedagogical tool to inform her future interactions. Trying out ideas she gathered from reading about AfL in response to this study was risky, and she worried whether they would work well in her lessons. In addition she had to perform and deliver good lessons which required using AoL strategies. Clare did not feel she had the opportunity to explore

other ways of implementing AfL and lacked confidence in trying out new things. AfL remained largely a mysterious concept by the end of the first school placement. The next section follows her transition into her new school, Peabody College.

4.2.2 Learning trajectory in T3

i) Low demands for using AfL

There was a change in demands placed on Clare when she entered Peabody College. She learnt that she had to re-orientate herself (Dreier, 1999) to meet the new demands of teaching in a different practice. New competencies (Hedegaard & Edwards, 2014), which included managing behaviour and slowing down her teaching became important focuses. This transition involved a sharp change of demands for Clare, and required her to participate differently in the practice of the new school and on how she positioned herself. Clare initially found it difficult to respond to these demands.

> *Everything just goes a bit slower here; they are slow to get to lessons, they are slower to get started, it's slower to convey what you want, because you have to wait for them, for silence. Everything just takes a good while longer than it did before.* (Interview, Clare, T3)

Working on behaviour management was important in the school and Amy wanted Clare to develop this competency because of possible difficulties encountered if behaviour management failed. The next extract illustrates the change in institutional motives and demands which Clare needed to recognise, carrying implications for what kind of SSD Clare could create and what demands she would meet as she worked her way forward.

> *There are a few certain students or classes that are quite tricky, so it helps if you feel very confident, and it also helps if you make sure that you follow on exactly what you say you were going to do.* (Interview, Amy, T3)

Amy did not set high expectations for how Clare might use AfL as behaviour management was prioritised. Interestingly, she did not require Clare to demonstrate AfL techniques while teaching, as long as Clare was able to meet behaviour demands. Like Mary, Amy saw AfL as a set of techniques that may or may not be employed, but were not central to teaching.

> *If she can do it without AfL techniques, she can say I walked around and I observed them and I could see the way they were answering questions, then that would be fine… Whether she used AfL for that or not then that is up to her. (Interview, Amy, T3)*

Clare struggled to meet the new demands but eventually felt relieved to be at a school where managing behaviour was emphasised over delivering perfect lessons. Clare's movement in her SSD was less restricted compared to Beaufort High. However, meeting and responding to these new demands created fewer opportunities for her to develop her use of AfL as a pedagogical tool.

ii) AoL as 'how' and 'when' tools

There was, however, an emphasis on plenaries. Amy, like Mary, valued plenaries as an opportunity for assessment. Although Clare had been using plenaries since her previous placement, Amy was concerned about how Clare was employing them in Peabody College. She thought Clare's use was often indistinct and wanted her to use the plenary to match pupils' learning to the lesson objectives. Whereas Mary had emphasised the 'when' aspects

of plenaries and consolidating student learning, Amy's demands focused on understanding what pupils had learnt in relation to the lesson objectives. She labeled this focus as AfL and one can see how her attention to learning objectives was not simply AoL, but had implications for how teachers ensured pupils followed the curriculum.

> *I mean the plenary would be your Assessment for Learning… it was making sure that her lessons flowed from starter to plenary, and they all kind of flowed and everything made sense with why they were doing it… so everything to answer your initial learning objectives… so that she came to the plenary and actually understanding 'Yes, they have learnt what I set out for them to learn', rather than kind of just being a vague plenary.* (Interview, Amy, T3)

As described earlier, Peabody College was concerned about compliance with Ofsted demands. We can also see in the extract below that Amy wanted Clare to use AoL as a 'what' and 'how' tool for teaching as well as meeting Ofsted's criteria. Like Mary, Amy saw the importance of using AoL as a 'why' tool to meet Ofsted expectations. These two examples point to how teacher mentors are significant mediators of what matters in the school (Edwards & Protheroe, 2004). However, these demands do not necessary help student teachers like Clare to make sense of AfL as a pedagogical tool in their teaching.

> *Ofsted, when they come in… they would want to see the fact that you were doing Assessment for Learning, the fact that you were doing this and you were doing that… so I think sometimes Assessment for Learning can be put in because of that… They basically want to see good practice… wanting to see students developing… wanting to see progress… wanting to see marking… wanting to see everything really, it is on Ofsted.* (Interview, Amy, T3)

Clare recognised the new demands and began using plenaries to address lesson objectives. Previously pressured to use plenaries as a 'how' and 'when' tool, with 'why' aspects related to her own self-preservation, Clare was potentially able to focus the use of assessment on student outcomes. Yet, her use of plenaries still reflected her T2 attention to consolidation and participation.

> *My learning objectives were to do push and pull factors - it was understanding urbanisation, and describe and explain some push and pull factors… then the plenary was at the end where I said 'just write a sentence pretending you were a slum person, why you were pushed and what might have pulled you', so it was just to make sure they knew it at the end… and they have learnt something. It is just a nice opportunity for them to write down what they have learnt.* (Interview, Clare, T3)

Clare remained confused about what AfL meant. She constantly struggled with the term and the extract below shows that by the end of the PGCE year, her understandings of AfL were limited to seeing it as a set of techniques to check for pupils' understanding and not as a tool to help her work more responsively with pupils.

> *It is just a broad term… 'Assessment for Learning'… covers a lot of little techniques… so when someone says AfL - I mean they could be talking about a lot of things, because it is a lot of little strategies… They are talking in terms of specific AfL techniques… they never use the term AfL.* (Interview, Clare, T3)

4.2.3 Summary

Throughout both school placements, Clare was unable to engage with the 'why' and 'where to' of AfL in relation to pupil learning. There were different motive orientations for using AoL in both school placements. In T2, her motives were to use AoL as 'when' and 'how' AoL tools to check for pupils' learning and as a 'why' AoL tool to avoid criticism

from Mary. Although demands were coming from Mary, these demands originated from Ofsted's criteria mediated by Mary. This stage marked a stage of personal survival and demonstrating competence for Clare (Calderhead, 1987; Furlong & Maynard, 1995). These demands shifted in T3 as Clare aligned her motives to managing behaviour and focusing on whether pupils had grasped the curriculum. However, the focus on some limited aspects of AfL, or more frequently, AoL, as a 'when' and 'how' tool led to difficulties in conceptualising the term. AfL was reduced to AoL strategies to use. As we shall see in the next chapter, the problem was not just the limited demands placed on Clare to use AfL in her teaching, but there was also a need to examine what she brought in terms of her agency in in creating a SSD during her PGCE year.

4.3 John

John was able to create a successful SSD in using AfL in T2. He was using AfL in sophisticated ways and had opportunities to work on his use of AfL in T2. However, the transition to T3 brought an abrupt stop towards his learning to use AfL. The change in demands and focusing on non-AfL demands limited his ability to create the SSD he once had in T2.

4.3.1 Learning trajectory in T2

In January 2013, John saw two main purposes for using AfL - improving his teaching and supporting pupils' learning. Unsurprisingly, as a beginning teacher, he was concerned about the quality of his own teaching (Burn et al., 2003). He put it this way:

> *As a way of assessing my teaching, Is my teaching good?, Is it achieving what I want it to?, What are the things I could be doing better?, Are there things I could be doing for the kids that would be better so is there a concept they are struggling*

> *with?, Could I explain it in another way to help them out? I think those are the two parts, improving my teaching and improving their learning.* (Interview, John, T2)

Here we see how John understood and used AfL to gauge student interest, planned his lessons and adapted the use of these techniques for the different classes he taught. He appeared to recognise the 'why' and 'where to' features of AfL as well as its 'what', 'how' and 'when' aspects.

Although he was using these techniques as 'how' AoL tools to check their understandings, he had clear ideas on what he wanted pupils to learn through his planning and assessment intentions. Throughout T2, he experimented with AfL techniques and responded immediately to the implications of his assessments for pupils' understandings.

> *I try out lots of different techniques in the same way but I then use the outcomes of the AfL often differently... like my year 10's yesterday... I was doing flood hydrographs and it was obvious they were not quite getting it from the questioning I was doing and there was definitely some blank faces. So I put on a video clip of a visualisation of what happens... so it has got a flood hydrograph... and it goes round and you see this river reacting and I thought that was a good visualisation so that was me reacting to the AfL techniques I was using which assessed that there were some students who were not just getting it.* (Interview, John, T2)

John's use of AfL was an interesting finding because the other student teachers tended to remain focused on the the 'how' and 'when' aspects — i.e. how they could do continuous assessment and when they should. John's use of AfL was far more fluid, revealing a stronger understanding of how it might be used as a tool to inform his teaching and support student learning (Broadfoot et al., 2002). Over T2, John saw the importance of AfL as a

'why' tool. In addition, he recognised how the demands placed on him enabled him to take his learning intentions forward.

i) High demands for using AfL

Having replaced Cindy who had mentored John in T1, Darren's first demand on John was to focus on the activities he had planned. He expected more from John than Cindy had and felt that John was using activities to keep pupils busy instead of helping them to learn. Darren did not have specific expectations for John in using AfL. His expectations were focused generally on the teaching. For example, confidence in delivering parts of lessons and understanding the purposes of activities. He felt that these aspects needed to be grounded before focusing on AfL.

Darren suggested that learning to use AfL should develop in discrete stages throughout the PGCE year. First, student teachers should understand what AfL is. Second, they should observe how experienced teachers use it. Third, they should consider how they could use it. Lastly, they should focus on how and what they wanted pupils to learn and how AfL helps pupils to learn. He did not expect them to be able to implement AfL right away.

Having mentored for six years, he knew student teachers had a lot to learn and was concerned about the number of things they had to work on. He therefore wanted them to be competent in other aspects of their teaching before proceeding to more challenging areas of their teaching such as AfL.

> *When they are training they make very good progress then we go into tricky things like AfL, higher order thinking skills, good quality starters and understanding the importance of mark schemes and educate students about exam criteria. And there*

> *may be some other fundamental basics that they have learnt... start to disappear a little bit… The more you train as a teacher [student teacher] the more you have got to juggle.* (Interview, Darren, T2)

Although Darren did not set high expectations for AfL in terms of specific techniques, he expected student teachers to assess pupils' learning in every lesson: 'I would expect them to have ways to, in every lesson, check that students have learnt something... I would expect them to use it [AfL] all the time'. His expectations here, therefore, focused on AoL. In assessing pupils' learning, Darren was aware of the challenges and limitations of student teachers' actions. For example, sticking to what they were comfortable with and therefore relying on a few teaching strategies. He was worried that the repetitiveness of their teaching could lead to poor pupil engagement. Despite arguing for the slow accumulation of AfL skills, he started to place AfL-related demands on John during the first month of his T2 placement.

> *I do not want them to come and assess their learning in a way which is like a tick... 'I have checked it', I would rather want to see a more creative way of exploring it from the students. Because it becomes too much like a routine… The challenge for the teachers [student teachers] is to come up with a wide range of strategies or practices.* (Interview, Darren, T2)

ii) AfL as a 'where to' tool

As we shall see in this chapter, Darren's approach to mentoring was different from the other mentors. He placed demands on John to use AfL; but rather than forcing ideas, he wanted John to reflect on the potential of the AfL strategies Darren had used while John observed him. In the excerpt below, John described Darren's approach to setting demands and he would often introduce AfL strategies for John to reflect on.

> *What Darren tends to do is he will do something when I am observing, and then go 'I showed you that so you know how you could use that', so he often sets the example of how you can do things, and then I go and try out. He suggests a lot of things in mentor discussions, so you will see in the stuff I have given you. There are a few bits Darren says* '*try this out, try this out... see how you get on'*. (Interview, John, T2)

Darren was showing John how rather than telling him how to use AfL, helping him make sense of the public meanings of AfL (van Huizen et al., 2005). It appears that Darren's approach in setting demands for John had an impact on how John began to develop his use of AfL, enabling him to make sense of the 'why' and 'where to' aspects. As we shall see later, John was not only responding to demands set by Darren but also placed demands on himself in using AfL.

Learning to use AfL in increasingly sophisticated ways was one of the leading motives for John in T2 as it enabled him to improve his teaching and help pupils to learn. The challenge for him was finding new ways of engaging his pupils as he initially had a limited repertoire. Darren was aware of student teachers' limited bank of ideas. It was only after Darren introduced a tool called the AfL generator, which was a compendium of more than 100 AfL-related strategies and ideas for teachers, that John was able to focus on the 'why' of AfL without getting flustered over the 'how' aspects. John explained the usefulness of the compendium:

> *You can end up doing the same things over and over again whereas that [AfL Generator] gives you a chance to change things without much work... so I am currently trialling all these different techniques, so if one works... I would put a tick by it and then I leave it because I know that [strategy] works with that class and I will try it with another class later to see what different contexts it works in... but the purpose*

of it is still to find out what the kids know and what I need to do to react or to let them know how far they have come and where they need to go next... so it is still focused on those two goals... letting me know and letting them know where they are and where we are going to go next. (Interview, John, T2)

Over the term, he began seeing the 'where to' aspects of trying out strategies relevant to his teaching in his NQT year. Aware of the increased workload and less preparation time he would have next year, experimenting with the strategies during the PGCE year became an additional motive for him. Here is evidence of John's successful creation of a personal SSD. He was able to propel himself forward, changing his relationships with the practices in which he was located and projecting his view of himself as an early career teacher.

iii) AfL and AoL as 'why' tools

John was aware of the societal expectations for teachers to know where pupils were in their learning in relation to Ofsted requirements and the emphasis on AoL. These demands were clear to him from the outset, and he was keen to set himself standards in relation to them. In the extract below, he used the term AfL while describing AoL. Here we can see how John was able to recognise the public meanings of both AfL and AoL and how both complemented each other, enabling him to respond in a way which was meaningful for him.

It is an expectation in the British system of schooling… with Ofsted and league tables… in order to get good grades, you have to know how the kids are progressing, so all the schools are in the league tables, so if you are not doing very well in managing pupil progress and letting the pupils know where they are, you are not going to do very well... If you do not do AfL, you just do not know those sorts of things, and the kids do not know them, so it is a requirement... It [AfL] is really good for

> *the kids, it is really good for your teaching and then you know how good your teaching is, but also a means to and an end of accountability.* (Interview, John, T2)

John, like Mary was reflecting on the learning dialectic, revealed by Hedegaard's (2014) planes of analysis in Figure 2A. They both point to how the societal plane may shape the school practices, which mediate demands on teachers. John recognised the external demands and the importance of meeting them. He therefore was also using both AfL and AoL as 'how' and 'why' tools to respond to what matters in schools.

Although it may seem that John was motivated to use what he called AfL to address these demands, he maintained that his rationale for using AfL was improving his teaching and helping pupils learn. For John, AoL for accountability was a by-product of AfL for promoting learning.

> *You want to know if your teaching is good and you should always be looking to evaluate your teaching to make it the best it can be for them so that intrinsic motivation to do AfL in order to evaluate your teaching, and make sure your kids are enjoying their learning, but there is that extrinsic motivation in terms of you want to look good if someone comes and observes your lesson, you do not want to look like you do not know where the kids are.* (Interview, John, T2)

Towards the end of T2, it seemed that both Darren and John reached a mutual understanding on the 'why' of using AfL and agreed that John should be using it regularly. In creating his SSD in relation to AfL, John was agentic in his use of AfL. He saw saw the 'where to' aspects in helping pupils learn and in relation to his own development as a teacher to help pupils to learn. His movement through this SSD involved a growing understanding of the 'what', 'how', 'when', 'why' and the 'where to' of using AfL, realising the potential of the

tool in his teaching and his own development as a teacher as well as the 'why' of public demands for using AoL.

> *Probably before the start of T2 I did not really know what AfL was, it was kind of an elusive term, but I think now I definitely have a concrete idea of what I want to do with it, what I think it is and what I am using it for. It is definitely that idea of, 'Is everyone on board with me?', 'Are we making progress?', 'Do I need to improve my teaching?', 'Do they know what progress they're making?'. Those sort of ideas are what I am focusing on when I am doing AfL techniques.* (Interview, John, T2)

At the end of T2, John reported significant changes in his thinking, understanding and use of AfL. He admitted to seeing AfL as just a standalone strategy when he started teaching. Over T2, he learnt the importance of pupil engagement and knew which strategies would work with each group and why. His long term aim of helping pupils love learning was also evident in how he summarised the benefits of good AfL. John did not see AfL simply as a set of strategies and recognised the importance of knowing his classes for AfL to work well:

> *Knowing the kids has probably dawned on me as one of the most important things in AfL... You have to know the classes to get the right sort of AfL in there.* (Interview, John, T2)

As the term progressed, John no longer saw the need for the rigid implementation of AfL techniques. He appeared to have expanded his use of simple 'how' AfL techniques such as circulating around the class for checking pupils' understandings to now include how he could be responsive to pupils as learners. John therefore saw the 'how', 'why' and 'where to' of these strategies. He was not worried about the outcome and delivery of his lessons

because imperfect lessons provided opportunities for him to address what he needed to do in subsequent lessons. Each lesson he taught was seen as a learning opportunity for him to evaluate his teaching as well as how pupils were responding to his use of AfL.

> *I think if you are implementing… things [AfL] like going round the class checking how they are doing, or question and answer… even if your lesson ends up being a lot of 'hang on we need to address this'... then that is better than just teaching the lesson thinking it is gone fine... I think it is always better to do that AfL stuff and sort of have a bit of a disjointed lesson.* (Interview, John, T2)

By the end of T2, John had a good grasp on the potential of AfL as a pedagogical tool and using AfL became an integral 'why' and 'where to' tool that informed his teaching and planning. His learning trajectory marked an interesting stage where he was using AfL in sophisticated ways and learnt the importance of involving pupils before his second school placement. John was set to carry his motives forward in his next teaching placement to continue trialling and learning to use AfL in his lessons to inform his teaching and planning and engage with pupils in the classroom.

4.3.2 Learning trajectory in T3

i) Managing new demands

When John transferred to Sydney High, he started teaching immediately. It took a few weeks to re-orientate himself to the school's expectations as the transition required him to develop new competencies, such as maintaining the pace of his lessons. He found it difficult to use AfL and carry his previous motives forward.

> *There has been a focus on pace, making sure I keep them on task all the way through, and differentiating… I am not used to it… obviously there are mixed abili-*

> *ty sets here, whereas at Beaufort High they were setted, so that has been a bit of a challenge.* (Interview, John, T3)

In addition to the pace of lessons, Sydney High required John to spend more time on his planning. At Beaufort High, John could focus on his actual teaching, partly because he was teaching three year 7s. At Sydney High, he needed to spend more time planning as he was teaching 10 different lessons each week. John did not feel he was ready to begin implementing AfL as he worked with these demands. With the new demands, he felt a dip in his use of AfL. Nevertheless, he felt optimistic that he would soon be able to return to his former self, but it was far from easy.

> *I still get a reasonable amount in there [AfL], but it is just maybe not as quite as polished as it was at Beaufort High… It is not quite at that level where I felt it was, I had loads of different things going on, loads of like really cool things, and I do not feel like I am not at the stage quite yet here.* (Interview, John, T3)

Following up with John two weeks later, it appeared that working with the new demands was overwhelming. Trying out new AfL strategies was placed on the *back burner* as his motives were aligned to responding to new demands. There were limited opportunities to experiment with new strategies and he continued using AfL strategies from T2. Unable to carry his motives forward, his transition to Sydney High appeared to represent a step back for him as an early career teacher. The extract below alerts us to how John's transition to a new set of practices and demands required him to re-orientate himself (Dreier, 1999) and how his transition to Sydney High was consequential (Beach, 1999) to his learning to use AfL. Although he was using AfL, he wanted to do more:

> *I am planning more lessons than I was at Beaufort High, so it is taking more time, so I am using techniques I have already used, rather than going and looking for new ones… So AfL, while I am including it, improving it… trying new methods… is sort of taking a bit of a back burner.* (Interview, John, T3)

Another challenge John faced at Sydney High was responding to the different demands from the teachers he worked with. Liz, his teacher mentor, was only able to see John once every four lessons. The school was split between two sites and John spent more time teaching in classes which were not Liz's. The other three teachers reported to Liz on his progress prior to mentor-mentee meetings. The kinds of interactions and demands differed.

> *You are always encouraged to do slightly different things by different teachers, so they always have different expectations… It is just really difficult because people pick up on things… It can be difficult if they want different things*. (Interview, John, T3)

The different demands John encountered and needed to respond to, inhibited the dialectical construction of his learning trajectory in relation to pupil learning and associated assessment. Working with multiple demands as well as navigating them also meant that John had limited opportunities to learn more about his classes, an aspect which had previously propelled him to see the 'where to' potential of using AfL as a pedagogical tool. John decided it was better for him to meet the teachers' expectations in order to pass the PGCE course, than to try to propel himself forwards as a learner. He recognised the demands from Ofsted's evaluation in teaching and learning and felt that as long as he was complying with the advice of the teachers, he would pass the course.

> *As long as Ofsted would roughly agree with what you are doing, as long as you are not doing anything outrageous, then that is fine as well… but at this point it is more*

difficult, you have to be a bit more meeting them in the middle. (Interview, John, T3)

4.3.3 Summary

John's learning trajectory in T2 involved trialling various AfL techniques for the purposes of informing his teaching and helping pupils to learn. He was not just using AfL as a 'how' tool but also as a 'why' and 'where to' tool for his learning and development as a beginning teacher. In creating his SSD, John was agentic in his use of AfL as a tool. As T2 progressed, John recognised the importance of meeting the demands from what matters at the societal plane and placed demands on himself to meet them. In addition, the sustained demands from Darren, learning opportunities to use and observe AfL and taking ownership of what AfL meant for John, appeared to have enabled him to create a successful SSD in relation to AfL in T2. However, his transition to Sydney High brought disruption to his learning trajectory and motives for using AfL. With new competencies to develop and demands to work with, he had limited opportunities to use AfL and create a SSD in relation to AfL. His focus on using AfL as a 'why' and 'where to' tool was brought to a halt until the final weeks of T3. John's transition to Sydney High appeared to be a step back in his learning trajectory and was consequential (Beach, 1999) to his learning to use AfL. As we shall see in the next chapter, there were other aspects at work in relation to John's learning which prevented him in creating a learning dialectic that could have propelled his learning forward in T3.

4.4 Jane

Jane had limited opportunities to work on AfL as a pedagogical tool across both school placements. Her learning trajectory in T2 highlighted the challenges of learning AfL as a

pedagogical tool when only certain epistemic functions of the tool were emphasised. There were fewer demands placed on her teaching and AfL in T3. However, these demands were calibrated by her new mentor and did not lead her to create a SSD to carry her learning forward.

4.4.1 Learning trajectory in T2

At the start of T2, Jane was using AfL for assessing pupils' understandings so that she could move on in her teaching. Re-teaching lessons were necessary if pupils did not grasp the main ideas of the lesson. The tone of her comment suggests AoL rather than AfL, where AfL might involve responding by trying another way of explaining or engaging as John exemplified.

> *It [AfL] is to see where the students are at and if they understand everything before you move on in your lesson… to increase their knowledge. If you do AfL and figure out that they have not actually caught on to the main ideas, you need to go over it and re-do it.* (Interview, Jane, T2)

Jane recognised the importance of keeping pupils on track and these appeared to be the messages she was getting from Liz and the school. Her initial understandings therefore focused on using AoL to ensure pupils could move on together.

> *To see how much the pupils have learnt and to see if the pupils are on track. To see who is up to what level because obviously some kids will know everything, but some will be like struggling… They [the school] see the point of AfL is so that they [teachers] can come up with ways to bring everyone up to the same level.* (Interview, Jane, T2)

i) Demands for using AfL

As described earlier in this chapter, Sydney High placed high demands on teachers and student teachers to use AfL regularly in classrooms. Like Mary, Liz saw AfL as a technical aspect of pedagogy and did not place high demands on student teachers to use AfL in their teaching. This marked some inconsistency in the demands from the school, but also points to how teacher mentors were in a position to mediate what mattered for them in the activity settings of student teachers and calibrate demands. For example, Liz felt student teachers should be ready to use AfL in their second school placement (T3) rather than the first school placement (T1 to T2).

> *By that point they would have progressed [after T2]… AfL is quite a hard concept to get your head around and integrate into lessons… There is more focus in the second placement.* (Interview, Liz, T2)

Nevertheless, there was also a focus on using an end of lesson plenary as a 'when' and 'how' AoL tool which was built from the start of the PGCE year.

> *One of my major questions when I have seen a lesson is… what did the students learn? How do you know that?… And I guess that is part of the AfL isn't it?… There is a focus on plenaries most definitely… so ensuring… that at the end of the lesson they know what the students have learnt… so you know doing a plenary at the end is built in right from the start.* (Interview, Liz, T2)

ii) Struggles with 'when'

At an early stage of the PGCE year, Jane learnt that she could use various AfL techniques in her teaching to assess for pupils' understandings. However, the rationale for AfL and the demands that she recognised appeared to regard AoL as a way of managing learners, rather

than managing learning. Talking of how the school had helped her from the introductory AfL session, she explained:

> *So the different techniques they gave us I find it useful… otherwise I would not have done it, I would have just come in thinking that the only time they get assessed is at the end kind of thing but obviously there is a need to do it regularly… because… you can bring people up to speed at the same time*. (Interview, Jane, T2)

Although the in-school session had enabled her to recognise how AfL could be used through the use of techniques to keep pupils on track, the lack of demands in relation on 'when' to assess hindered her progress in learning to use AfL.

> *They [the school] have not really told us… They have just spoke about it [AfL] but they have not said* '*we expect you to use it here, here and here*' *… They have just said* '*this is what AfL is'*. (Interview, Jane, T2)

The demands from Liz also pointed to the ambiguity in how student teachers should use AfL and how it was introduced to them.

> *She advises us to use it [AfL], but once again she is not telling us when we have to use it… we have spoken about it and she has said to use it obviously… It is a focus I mean and we have been working out different ways to use it but… she does not really set out you have to do it at this point… at this point… at this point… she is just telling you how to use it… and then it is up to us I guess on how to use it.* (Interview, Jane, T2)

There was a lack of apparent demands made on her to use AfL despite calls from the school for student teachers to use AfL regularly in their teaching. Jane also found inconsis-

tencies in teachers' lessons as not all teachers used AfL regularly. Already unsure on 'when' she should use AfL, she became confused about how often she should be using it.

> *I know teachers do use AfL but I do not think they necessarily use it every lesson or anything like that and they have not told us to use it every lesson*. (Interview, Jane, T2)

iii) AoL as a 'how' and 'why' tools

I followed up with Jane after Liz requested her to use AfL in two lessons. In the extract below, Jane appeared to have picked up the 'why' aspects of AoL rather than AfL in that demand, i.e. keeping students on track to show that she had done her job.

> Jane: *We wrote down what we found out from it [using AfL] so we found out which pupils were on track… yes it made you think more about whether the AfL was working.*
>
> Researcher*: How do you know it is working for you?*
>
> Jane*: Because the kids have written down the right answers… then they obviously have understood so therefore you have done your job.*

The emphasis on keeping pupils on track and ensuring pupils could recall what they had learnt was also evident in the other strategies she had used. Consider for example, two AfL strategies labeled *true and false statements* and *hands up* that Jane was encouraged to use. Although using the label AfL, the strategies were 'how' AoL tools aimed at checking pupils' learning.

> *I did it [AfL] halfway through the lesson, I got them to write down two true statements and one false statement and their partner had to say which one was true or false and then I did a hands up to see who got it right and everyone got it right, so*

> *they all understood it and were on track… it is just to check and assess on what they have learnt*. (Interview, Jane, T2)

Jane consistently used AoL to assess pupils' understandings to keep them on the curricular track. Despite the lack of demands from Liz to use AfL and not knowing 'when' and 'how' often she should be using AfL, Jane saw AoL as a 'why' tool and wanted to make sure pupils had grasped the curriculum. However, the emphasis on keeping pupils on track did not relate to how she might respond to them as learners. Nevertheless, Jane tried to create her own SSD through using AoL.

> *I do use AfL… in every lesson now whether it is at the beginning to check on what they have learnt before or at the end to check if they have learnt after the lesson.* (Interview, Jane, T2)

Making sure that pupils had learnt appeared to be the main motive, making AoL a 'why' tool. Looking back to the beginning of T2 on Jane's conceptions of how pupils learn and the need to assess them regularly, we can see that there had been limited changes in her understandings and use of AoL towards the end of T2.

> *If they leave your classroom and they do not know anything new then you have not really taught them anything.* (Interview, Jane, T2)

The use of questions as an AoL strategy was an important 'how' and 'why' tool for Jane to check for pupils' understanding and keep them on task in the classroom throughout T2.

> *I tried to ask questions all the time in between to make sure they were writing down notes… make sure they were doing it… make sure they were listening and make sure they understood it.* (Interview, Jane, T2)

With the positive feedback Jane received from Liz on how she was using questions as an AoL tool, Jane did not feel she needed to try out how she might use questions in new ways. But, like Clare, her concern was doing well enough to get through the course and comply with the demands it made on her. There was another reason why Jane refused to change her constant use of questions which is discussed in the next chapter. In brief, her use of questions satisfied Liz and reduced the criticism of her teaching.

Despite the lack of demands, Jane did occasionally try other strategies such as the use of traffic lights encouraged in the school. However, she had limited success and eventually stopped using them because pupils were not honest with their answers. She expressed her frustration in using this strategy:

> *The traffic lights ones… I said… to them 'If you colour it in green, then you have to explain it to other people why you have put green'... And they all just started putting orange but they all understood it… They clearly did not want to tell other people… so that did not really work… whereas if you have not said anything… they all would have just put green… so I do not know… it is a difficult one… as a result, they would choose orange because even though they probably knew the answer, they might not know how to explain it.* (Interview, Jane, T2)

The use of traffic lights is a strategy promoted within the AfL literature (Black et al., 2003), but Jane's use of this strategy as a 'how' tool reminds us that implementing AfL is far more than using strategies in the classroom (Pedder & James, 2012) and requires support in realising their potential (Black et al., 2003). One important pre-condition for AfL strategies involving self and peer assessments such as traffic lights is establishing a classroom culture of trust for it to work well (Webb & Jones, 2009).

Despite trying to call forth her agency in learning to use AfL, Jane felt that her efforts were often left unnoticed. There were also fewer demands for using AfL towards the end of T2: 'We have not spoken about it for ages'. Jane's learning trajectory in T2 was marked with difficulties in both her use and learning to use AfL. There also appeared to be constraints for her when she attempted to create a SSD in relation to AfL.

4.4.2 Learning trajectory in T3

i) Low demands for using AfL

When Jane entered Beaufort High in T3, she did not feel a significant change in demands on her for using AfL. She was still using questions as an AoL tool and continued to receive positive feedback on her use of them. We can see in the extract below that her rationale for AoL as a 'how' and 'why' tool appears to have remained unchanged at the start of the term and so was her understanding of AfL. The focus remained on assessing pupils' understandings and recall of factual information, again with a focus on the whole class.

> *I do quite a lot of AfL throughout the lesson, through questioning so like I ask quite a lot of questions and to me that is AfL so they have understood it I can move on… Today we did sustainable stuff and they did not really understand it so I kept trying to ask questions then gave them the example, whereas if they had understood it I would have just moved on, so I guess I have done that and he [Darren] has mentioned before that my questioning is good and it assesses how much they have understood and I do not just ask one person, I ask all of them which helps with the AfL… to make sure that all of them understood.* (Interview, Jane, T3)

The use of questions was an important AoL tool for Jane throughout the two terms and it appeared that other than the positive feedback she received on her use, it's ease of use and preparation was another reason why she continued using questions. There appeared to be a

lack of demands on Jane to expand her use of questions that could have helped her realise the 'why' and 'where to' potential of AfL in relation to her planning and future teaching.

> *Well they just kind of work… At the last school… I used questioning to try to get them to talk and kind of was stuck with it because that was one thing that they said I did really well, questioning… I think it is quite easy to question, you do not have to prepare any resources for it but the kids are still getting something out of it and if you try and ask everyone then you can still assess where everyone is at in the lesson.* (Interview, Jane, T3)

With the limited demands placed on her for using AfL in T2 and T3, Jane appeared to be most confident in using questions at the end of her lessons only. She needed help in recognising how she could use them in the middle of her lessons. Her learning trajectory points to the importance of observing exemplars of practice in order to help her make sense of the tool (Grossman et al., 2009).

> *If we saw AfL regularly it probably would have helped me to know when to do it… what points in the lesson… because still at the minute… I am just using it at the end because I do not really know how else to fit it in the middle… I never really been taught how to do that or seen anyone doing that really. (Interview, Jane, T3)*

Jane recognised her limitations in using questions as an AoL tool and wanted help in learning how to use it seamlessly in her lessons. She was trying to create a learning dialectic but her motives for delivering and not disrupting the flow of her lessons (Edwards & Protheroe, 2003), coupled with limited learning opportunities to observe AfL became an impediment for her in realising the potential of the tool.

> *I do not really know how to fit it in still and I would like to know how to fit it in without it disrupting the lesson completely, because it kind of breaks up the lesson,*

> *doesn't it?… and sometimes you like the nice flow of the lesson, so it would have been nice to be told how to seamlessly fit it in so it does not break everything up.* (Interview, Jane, T3)

Darren had to take a different approach from his work with John when mentoring Jane. In trying to set AfL-related demands for Jane, Darren questioned whether Jane knew what AfL was and whether she had seen or was shown lessons where AfL was used in T2. He observed that Jane had limited understandings of what AfL was and how she should use it. Darren took a coaching approach to support Jane in making sense of AfL.

> *For Jane… well… I would say when she came to me in April… not very polished in her practice around Assessment for Learning… I think she knew what it was… I don't know, maybe she did not know what it was… Maybe she had not seen it being used very much or maybe no one sat with her to show it being used… said to her beforehand [before a lesson] 'look at the middle of the lesson, when we get to this point, I am going to incorporate some formative assessment'… and 'I am going to use that to guide what I do next in the lesson'.* (Interview, Darren, T3)

The accounts from Jane so far seem to give the impression that there were limited demands placed on her to use AfL in T3. However this was not the case as Darren carefully calibrated demands for her after learning about her negative teaching experience in T1 and T2. How Darren calibrated his demands to support Jane's learning is discussed in the next chapter. Jane was unaware that Darren was trying to help regain her confidence in teaching before setting AfL-related demands. It was only towards the end of T3 that Darren felt Jane was ready to implement AfL. Even so, Darren felt that it was probably a bit late for Jane to be learning to use AfL, given that he believed a staged approach was required.

I think, unless people explicitly share that [AfL] with them, so they know what to look for and then can recognise it, it must be very hard for them to know what it is by just reading about it on paper and then we expect them to have Assessment for Learning goggles… and just go 'oh yes there it is!' … they need to be coached in this, I would say Jane started to develop her practice after Easter… April… May? So… quite late. (Interview, Darren, T3)

4.4.3 Summary

Jane's learning trajectory in both placements revealed the limited opportunities she had for engaging with AfL. In T2, not knowing when she should use AfL as well as the lack of demands related to this specific use of the tool limited her learning. An added difficulty came from the inconsistencies between how Sydney High stated it valued AfL and what she observed in classrooms. Her transition to Beaufort High in T3 did not necessary change how she learnt to use AfL as there were still low demands placed on her. She nevertheless had opportunities to begin learning to use AfL in the final weeks of T3. She continued to use questions as a 'how' and 'why' AoL tool in both school placements because of the positive feedback she received and in what is to come in the next chapter, as a 'why' tool to deflect criticism of her teaching. Her learning trajectory in both placements revealed that observing how teachers use AfL-related tools, and discussing how and why they did it, may have helped her to recognise the potential of the tool. However, with the lack of emphasis on the pedagogical 'why' of AfL, it was very difficult for Jane to see the 'where to' aspects of it.

As we shall see in the next chapter, Jane had a challenging teaching experience in T2. Darren placed low demands on her in relation to AfL to help her regain her confidence in teaching. Jane continued using questions as AoL tools but they were no longer a 'why' tool

to please Darren. It was only towards the end of her second school placement where Jane began seeing how AfL could be used as a 'why' tool to inform her teaching and pupil learning.

4.5 Tom

Tom's learning trajectory across both school placements is a sharp contrast with the other three student teachers. He appeared to be working mainly on an identity project of becoming a good practical teacher who fitted in to schools and was eager to identify and work on the institutional demands placed on him by the schools. Although he suggests that he was using AfL, he was actually using AoL as a 'how' and 'why' tool across both school placements. There were limited changes in his understanding and use of AfL throughout both placements.

4.5.1 Learning trajectory in T2

At the start of T2, Tom had strong ideas about what he labeled AfL - checking on what pupils had learnt. He made clear distinctions between the rationale for AfL and the activities in his lessons. The extract below shows how Tom saw AfL as an on-going process of checking for pupil learning:

> *It [AfL] does not really help them to learn, because that is what the main activities of the lesson are doing, that is the content that they are learning. The AfL bit is you understanding what they have learnt, and them also understanding that they have learnt… so the activity, the task of the lesson is getting some information, processing the information, and the AfL bit is checking that they have processed that information well enough and explain things well enough… so they understand that they have learnt... so you are checking for their learning*. (Interview, Tom, T2)

Tom did not see AfL as a tool through which teachers could respond to students as learners. Although he was using the label AfL, Tom was actually describing AoL as a 'how' and 'why' tool to inform him about what pupils had learnt and for pupils to know what they had learnt. AoL was also seen as an on-going process during a lesson.

i) Working with AoL demands

There were marked similarities to how both Tom and Jane recognised Sydney High's motives for using AoL as a 'why' and 'how' tool to inform teachers about pupils' progress and keeping pupils on track. For example, Tom was aware of how AoL would inform his future planning, by ensuring that the class moved forward together through the curriculum.

> *The school is quite hot on AfL and trying to incorporate it into every aspect of the lesson... the purpose of AfL… especially here… is so that you do not move on without them all understanding that concept. So you can scaffold their learning, you can build their learning throughout a lesson… and if you miss out a stage in the middle, they are not going to be able to grasp the higher order concepts later on, so you need to have an understanding of what they have learnt, so then you can build on the next lesson without confusing them or moving on too quickly*. (Interview, Tom, T2)

He also faced a similar problem to Jane. He pointed out the apparent lack of demands from the school and Liz on when he should be using AfL:

> *They have not said you must use this type [of AfL] at this point in the lesson, or you must use this here. It's kind of on our own judgement about how we engage [with AfL]*. (Interview, Tom, T2)

At the same time his emphasis was largely AoL. Here, he interprets the institutional motives and demands in seeing AoL as a 'how' and 'why' tool to check pupils had learnt.

> *The fundamental, important thing about a lesson is that they come out having learnt something... and the only way you are going to know that is by AfL... by checking what they have learnt.* (Interview, Tom, T2)

Tom was encouraged to explore different ways of using AfL. One of the strategies Liz wanted Tom to work on was what was called *closed book*. Although given the label AfL, we can see from the extract below that its purpose focused on checking for pupils' understandings as an AoL tool. There was no mention of how teachers should respond to the information available through the exercise.

> *She will say [to pupils] 'ok open your book, write three things down to do with the last lesson' and then she will pick up some of the answers or she will come and have a look at them later on in the session*. (Interview, Tom, T2)

He labeled strategies such as circulating around the classroom and asking questions as AfL, although the focus was AoL.

> *Anytime that you are checking what they have learnt, that is kind of AfL. So even if you ask a student to answer the question, that is a little bit of AfL, because if they give the right answer you know they have understood it.* (Interview, Tom, T2)

There appeared to be three main purposes for this kind of on-going assessment: to know what pupils had learnt, to inform pupils about what they had learnt and as a motivation tool for pupils. AoL of this kind led him to recap if pupils did not understand. Using AoL as a 'why' tool, Tom suggested on several occasions that there was a need for pupils to

learn what they had been taught or there was a need to re-do a lesson: ‘You have got to redo stuff because they need to learn what you want them to learn’ (Interview, Tom, T3).

In the extract below, we can see the importance and what appears to be Tom's motive orientation for using AoL as a ‘why’ tool. However, he was not using the information gathered from the lesson in an anticipatory way to inform his teaching and planning for future lessons (Moss, 2008). In other words, he was not using assessment as a responsive strategy to help pupils learn. The focus was on whether pupils could recall on what they had learnt in the lesson.

> *If you teach a lesson on New Zealand and then none of them understand it, they cannot tell you any facts about New Zealand, they cannot tell you why New Zealand reacts better than Haiti. You will have to re-teach it*. (Interview, Tom, T2)

Tom's understanding and use of AfL appeared to have remained unchanged at the end of T2. AoL remained a ‘why’ tool to check for pupil learning. Here again, we see assessment connected to a strongly curriculum-led notion with the need to recap facts that had not been grasped.

> *I have got a better understanding of how I can use different techniques, why it is important. It shows today there was three or four occasions where I built that into my lesson plan and there was lots of things I just did naturally like questioning and circulating.* (Interview, Tom, T2)

Throughout T2, there were limited AfL-related demands that could have led him to use AfL as a responsive strategy to respond to pupils' needs. Although not knowing ‘when’ to use AfL, he was able to work around the problem by responding to the demands from the school and Liz by using AoL, and ensuring pupils understood content. At the end of T2, he

suggested he had a better understanding of how he could use various AfL techniques but as we have seen, the use of these strategies were AoL. Whether he was able to have the opportunity to learn to use AfL will be described in the next section as he made his transition to Beaufort High to work with Mary.

4.5.2 Learning trajectory in T3

i) High demands for using AoL

At Beaufort High, Tom did not feel there were significant differences in terms of expectations and practice for using AfL. However, he did recognise the increased expectations on his teaching and placed demands on himself. Mary also held higher expectations for student teachers coming into their final teaching placement.

> *When we get students in after Easter, they have already done their larger placement so we are expecting them to be a certain quality then… They are not just starting like Clare was back in October... They would have been in school till around April... so I would be expecting… that they would take the time table quickly, it would not be slowly building up.* (Interview, Mary, T3)

ii) AoL as 'how', 'when' and 'why' tools

At Beaufort High, Tom continued using AoL strategies such as circulating and asking questions but needed to work with a new demand from Mary. As we saw from Clare's learning trajectory in T2, Mary valued using end of lesson plenaries as a 'how', 'when' and 'why' AoL tool. It was no surprise that Tom had to begin using them as 'why' tools to respond to Ofsted standards of evaluation as mediated in Mary's demands. Tom needed to use plenaries consistently as an AoL tool and Mary was very firm in getting him to always include them.

> *Like the other day… was picked up on the no plenary bit... I ran out of time and she said… 'You should done this and if Ofsted were watching here, it would not have been a satisfactory lesson'… She is… kind of matter of fact about that which is really bad practice.* (Interview, Tom, T3)

There were constant reminders for him to use end of lesson plenaries regularly as an AoL tool in response to Ofsted expectations. Tom felt some pressure for the first time in his PGCE year but was able to work with these demands because he recognised that he was at an advanced stage of the PGCE year. He accepted rather than negotiated these demands because these demands enabled him to continue working on his identity project as a teacher who could fit in to the practices of the school as well as school expectations (Calderhead, 1987). As we shall see in the next chapter, he had a good sense of the kind of teacher he wanted to be.

> *Mary is very hot on it [plenary] and she is always referring to you know… 'Tom, where is your plenary'? or 'You could have developed that a little bit'… She mentions Ofsted quite often... 'You know Ofsted standards require you to have that plenary thing there' … Her expectations are quite high… I am in my T3 placement and they are expecting my teaching practice to be better than my previous school.* (Interview, Tom, T3)

The continued use of plenaries was a constant expectation, and limited opportunities for him to learn other strategies. At the end of T3, he still saw AoL and the main activities in his lessons as separate aspects of teaching and learning. Here he explains the use of an end of lesson plenary in T3.

> *It [AfL] does not help them to learn, it helps them for me to understand what they have learnt. So it is the main activities of the lesson is where they learnt the mater-*

> *ial and the little exit card at the end is to just check that they have learnt the right thing or learnt as much as you hope they learnt from the activities*. (Interview, Tom, T3)

AoL remained a 'why' tool to check for pupils' understanding and as a 'when' and 'how' tool occurring throughout lessons and in plenaries. There was limited evidence that Tom was using AfL as a responsive strategy to take pupils' learning forward in either school placement. Although Tom offered firm ideas on AfL as AoL, he confessed at the end of T3 that AfL was still a vague term and identified AfL as an area to work on during his NQT year.

> *Well, I did not know what AfL was… I still do not know what AfL is… I feel like I do not know AFL as well as I should do… This is something that needs to be worked on because I do not really know it.* (Interview, Tom, T3)

4.4.3 Summary

Tom's learning trajectory in T2 and T3 was more linear than the other three student teachers. He was working to fit in (Calderhead, 1987; Furlong & Maynard, 1995) to the schools' expectations and practices across both placements. Although he was using the label AfL in both placements, the focus of the strategies was AoL. There is therefore little evidence that his very firm ideas from the outset of the study changed in any marked way. His transition to Beaufort High did not appear to be consequential to his learning to use AfL. He was able to carry his previous motives for becoming a teacher forward in using existing strategies and adding plenaries to them. He did become an efficient user of AoL and a competent teacher in school who fitted with school expectations, but his actions raises questions about his learning as beginning teacher. As I will illustrate in the next chapter, Tom was

actually working on his identity project in both school placements and engaged with the demands coming from the schools.

4.6 Chapter summary

This chapter has illustrated the different learning trajectories and stages of learning (Calderhead, 1987; Furlong & Maynard, 1995) of the four student teachers as they learnt to use AfL in schools. With exception of Tom, their learning trajectories were far from linear. A major finding across the four student teachers was the limited demands for using AfL in their teaching. Although student teachers were introduced to strategies which carried the label of AfL, the purposes largely focused on AoL (Newton, 2007). If student teachers did use AfL, they did so through the letter of AfL (Marshall & Drummond, 2006) and appropriated AfL at the surface level (Grossman et al., 1999). The demands did not require student teachers to engage with how AfL could be used to promote pupil learning.

By focusing largely on one or two epistemic functions of the tool (Engeström, 1990, 1999, 2007), most frequently the 'how' aspects, student teachers were confronted with challenges when other functions of the tool needed to be enacted. Only John was able to recognise the importance of knowing his pupils to allow him to focus on the 'why' and 'where to' of using AfL in his teaching but as we have seen, his transition to his second school placement brought an abrupt stop to how he wanted to continue using AfL. Although student teachers were attempting to implement AfL, the lack of demands from most mentors in this aspect of pedagogy appeared to limit their engagement with the conceptual demands and potential of AfL and its relationship with responsive teaching to support pupil learning. The tensions between demands and agency will be detailed further in the next chapter.

The transition to their second school placement brought some disruption to their learning trajectories and carried implications for whether they could create a new SSD for learning to use AfL. Clare had to focus on different demands and therefore had limited opportunities to learn to use AfL. John was unable to carry his previous motives for using AfL as a 'why' and 'where to' tool in his second school. Jane was more fortunate; Darren intentionally placed low demands on her to use AfL because of her previous teaching experience in T2. Tom's transition required him to focus on using plenaries as an AoL 'why' tool, but there was little evidence of learning the pedagogical potential of AfL.

The analyses also indicate some ambiguity in schools about AfL, what it is, how it might be implemented and for what purposes (Boyle & Charles, 2010). Although student teachers had been told of the potential of the tool in university (i.e. the 'why' and 'where to'), the ambiguities of what the term meant in schools carried implications for how student teachers understood the rationale for AfL and its pedagogical use. Consequently, the school placements largely provided limited opportunities for the student teachers to develop their understanding and purposeful enactment of AfL. Student teachers were focused on delivering the curriculum, checking for pupils' understandings and using AoL as a response to meeting the demands of curriculum coverage and Ofsted-led notions of a good lesson. It was therefore understandable that AoL was more prevalent that AfL.

Chapter 5: Cultural-historical dynamics in learning to teach

This chapter looks across the student teachers' learning trajectories discussed in the previous chapter to address the second research question, ‘What does an examination of AfL as a pedagogical tool reveal about student teachers’ learning in schools?’. By comparing how AfL was used as a tool by the student teachers in different settings, the chapter attempts to reveal the implications for understanding how student teachers learn to become teachers in schools. The chapter is organised into six sections. The first section describes the figured worlds of learning to teach. The second section examines the learning dynamic that arises in the figured world of the schools, and its implications for student teachers' learning. The third section will describe the role of mentors and how they shape student teachers' learning. In the fourth section, student teachers' transitions across different school practices will be described to highlight how these disruptions to their trajectories can be beneficial or a step back in their learning. The fifth section will demonstrate that student teachers were capable of addressing more challenging demands and how participating in the study contributed to their learning. The last section summarises the chapter.

5.1 Figured worlds of learning to teach

The learning trajectories discussed in the previous chapter reveal the efforts made by student teachers to read and respond to what was highlighted as relevant in the institutional practices of each school. The four students were all at relatively early stages in developing their identities as teachers and therefore did not have strong sense of themselves as professionals to negotiate the different practices they met while learning to become teachers. Although the study focused on student teachers' learning in schools, it was clear that student teachers were also navigating the practices of the PGCE course at the same time. Their

vulnerability was not strengthened by their need to find their ways through the apparently different practices of both the school and the programme. This finding was surprising, as my assumption had been that the school placement was part of the course. But this was not how it was seen by the student teachers. In this section, I refer back to the idea of figured worlds (Holland et al., 1998) introduced in Chapter 2, to examine the dynamics that were evident between the figured world of schools, the course and students' actions in relation to AfL in their work in classrooms.

In describing how the student teachers found their ways through these figured worlds, I use the terms navigate, comply and negotiate. I shall clarify the meanings in my argument before discussing how student teachers were or were not able to create opportunities to propel themselves forward as learners. By navigate, I mean recognise demands in practices and address them directly and easily or work around them to take forward one's intentions. Navigation therefore means that the learner may avoid some demands that might challenge them and take themselves forward as learners. Compliance is acting in line with explicit requirements but without any sense of engaging personally with the purposes of the action, other than to produce a performance that pleases an assessor.

As we saw in the previous chapter, navigation and compliance marked much, but not all, of the student teachers' responses to school demands in relation to AfL. By negotiate I mean recognising the demands, attempting to make sense of the challenges they present, tackling them and learning. The most obvious example of negotiation was how John was able to work with the ideas offered him by Darren in T2. As I indicated, when discussing a change to an initial research question, negotiation was rare. We have also seen that student teachers' learning trajectories within and across schools were often not smooth, and the

complexity of navigating and negotiating the demands in the practices from both figured world brought challenges to their learning and identities as beginning teachers.

The figured worlds of practice in the placement schools were also informed by and were mediating the national education policy pressures on schools. These in turn, influenced the possibilities for action in classroom activities offered to the student teachers. As a way to illustrate and model the affordances and constraints the student teachers were experiencing in learning to teach in the two figured worlds, I augment the work of Holland et al. (1998) on figured worlds, Hedegaard's (2014) analytic framing for connecting individual learning with societal conditions, and Edwards's (2010a) idea of what matters in practices. Figure 5A is a broad summary of key features in the planes of analysis offered by Hedegaard (2014) in Figure 2A to reveal differences in motives, or what matters, in the figured worlds of the PGCE programme and the schools in which the student teachers are placed. The data sources for what matters in the university education department were the course handbook; discussions with my supervisors who are both involved in teacher education in the department; and Ofsted's (2015) inspection framework. What matters in schools was derived from the data analyses.

	What matters in university education department	**What matters in schools**
Societal expectations	Good Ofsted grades for the PGCE programme. Good quality education research.	Good Ofsted results and examination success.

Institution	University Creating good teachers who are able to work in any school. Developing strong professional values. Equipping them with capabilities for current and future professional development.	Schools Ofsted success. Pupil progress. Pupil Behaviour. Curriculum coverage.
Activity Setting	University Sessions Grasping concepts through practical theorising (McIntyre, 1995).	Classrooms Good performance according to lesson planning based on Ofsted expectations. Good performance and meeting standards.
Expectations on student teachers	Becoming continuous learners, seeking challenges and going beyond the national standards in their teaching.	Pupil progress and examinations. Fitting in to school practices and norms. Depends on teacher mentor.

Figure 5A: What matters at different planes of analysis.

The intention of Figure 5A is to reveal the challenges experienced by student teachers in their learning by indicating what matters in the practices of the two figured worlds. For example, what matters at the societal level for the PGCE programme are good Ofsted grades for the programme and good quality research for the education department; while good Ofsted results and pupils' examination success are what matters for schools. In addition, the figure illustrates some of the demands student teachers may come across as they navigate the figured worlds of university and school practices and their different activity settings. In both sets of practices, the student teachers are temporary actors with little

agency within the practices. The figure therefore acts an orientating device to help understand the ways in which student teachers' learning is positioned within the schools and within the university department of education, responsible for the overall programme. As I will show, student teachers were navigating the figured world of the schools and with one eye, on the figured world of the PGCE course. Their navigation between two different figured worlds revealed the complexity of the contexts in which they were to develop as teachers and highlighted their vulnerability as learners.

5.1.1 Challenges in exercising agency in the figured worlds of placements schools

Key issues here were the student teachers' felt need to comply with school demands mediated by their mentors, as a way of navigating the demands of the PGCE programme. For example, Clare found it difficult to address the demands made on her at Beaufort High in T2. Developing a good relationship (Haggarty, 1995) with Mary and responding to her explicit demands were actions that mattered for Clare. To succeed in the figured world of the course, Clare needed to navigate and pick her way carefully through the explicit demands made on her in school by Mary. Her leading motive focused on passing the course.

> *Different people will think different things but you kind of have to take their opinion. If you did not get on with your mentor, I think the PGCE experience would be rubbish because you have got to be in school with that person every day, having them watch you… then set your targets… so if you did not get on, it will be awful… They are above you in status, and they are setting everything for you and saying how well you are doing.* (Interview, Clare, T2)

The need to navigate both the demands of the course and school made it difficult for Clare to agentically create a SSD that could propel herself forward as a learner. These tensions

suppressed her agency to negotiate and respond to the demands she identified that might carry her own learning intentions forward. Though at times, even compliance was problematic. In the extract that follows, we see there was no opportunity for Clare to negotiate differences in interpretation of learning targets.

> *There were a couple of times where targets were set and I thought that I was following them... and on the observation forms it was like... 'Please read the targets I [Mary] last sent you so you know what you are meant to be achieving'... I would look back and think 'I was following them' but she would have different ones that she thought of.* (Interview, Clare, T2)

The added challenges in exercising agency arose when different demands from the figured world of the school and course were presented to her in the form of demands to comply with. For instance, Clare was given a set of contradicting demands from both Mary and Nina (university tutor) who both observed the same lesson. Mary wanted Clare to focus on her use of warnings, but Nina emphasised the use of praise in Clare's lessons. Compliance with these demands were necessary because Clare's motive focused on passing the course. However, the need to please two significant individuals from both figured worlds added difficulty. Navigating the demands from both figured worlds inhibited Clare's creation of a successful SSD:

> *I just do what the target everyone is watching. Personally… I probably, in my own teaching… use the praising one more like my curriculum tutor suggested and do not really use the warnings - but when my mentor is watching me… I tried to use the warnings to make her happy about my progress, when the curriculum tutor watches me, I need to use praise to make her happy about my progress.* (Interview, Clare, T2)

John faced similar challenges in navigating both figured worlds at Sydney High in T3. Compliance towards school demands and developing a good relationship with Liz and other teachers he worked with mattered. However, this meant that he could not act agentically and negotiate demands made on him. One tension John faced was getting pupils to write down geographical definitions. This was a valued activity at Sydney High, but not in Beaufort High. While working with Darren at Beaufort High, John learnt it was more helpful for pupils to investigate the geographical terms themselves. Nevertheless, John complied with these demands and pointed to the challenges on how responding to these demands curbed his agency as a teacher as he needed to navigate these expectations in order to pass the course. He was expected to fit in (Calderhead, 1987) to the practices of the school and wanted to be seen as a competent teacher. His motives shifted to responding to these new demands to pass the course, but did not allow him to create a learning dialectic which mattered to him.

> *If they just want definitions written down, while I will not do it next year… for this year I will do that… I would give them a word fill to fill the definition or something, rather than causing an argument with someone when it is not my class… I really want to do well here, I do not want to upset anyone and cause them problems, and also I want to pass the course… so it is just a bit easier to meet the expectations of different teachers.* (Interview, John, T2)

The figured world of practices at Sydney High similarly presented Jane in T2 with explicit expectations in ways which appeared to inhibit her learning. The example of Jane is, however, a more extreme case of how a diminishing of student teacher's agency in the figured world of the school can be detrimental to their learning and identity as a beginning teacher. As described in the previous chapter, Jane was constantly using questions as an AoL tool

in both school placements. However, in Sydney High, the use of questions also became a way of avoiding criticism on her teaching. Reflecting on her experience of T2 during T3, Jane revealed that using questions became a strategy for deflecting potential criticisms and surviving the negativity surrounding her placement at Sydney High. She was dealing with difficulties and trying to survive her school placement (Furlong & Maynard, 1995). Her sense of self as a teacher was put at risk by the ways in which school demands were mediated and her survival strategy was a low level of risk-taking through visible compliance in one area where she could successfully perform: 'I just question a lot and they have always said that I am good at questioning so I have just stuck with it… if it is working, what is the point of changing it?' (Interview, Jane, T3). In brief, she did not engage with the figured world of Sydney High and avoided creating a SSD that might help her progress as a beginning teacher. She did not lose her sense of personal agency, but exercised it defensively in ways which inhibited her professional development. We can also see how her emotions and sense of self affected the quality of participation in her teaching (van Huizen et al., 2005) at Sydney High:

> *I do not know how I coped… I just kind of got on with it… To be honest by the end of that school [Sydney High] I was so annoyed... I just kind of took everything they said with a pinch of salt... There was so much negativity and it was affecting the way that I am teaching because I am stressing so much about the teaching, that I am not doing a good job or whatever, so I kind of just tried to find positives for myself from the lesson and then by the end I did not even bother speaking to the teachers about how the lessons had gone because I did not want to know anymore.* (Interview, Jane, T3)

5.1.2 Having control over how and what one teaches

The challenges in exercising agency extended to not only needing to comply with or navigate the demands made on them, but also to how and what student teachers could do in their lessons. There were differences across the four student teachers. As we have seen in Chapter 4, John's learning trajectory in T2 clearly involved experimenting with various strategies to expand his teaching repertoire and take his own learning forward in relation to AfL. He also had more autonomy over his classes in T2 compared to T3: 'I feel a bit more pressured that it is not my class' (Interview, John, T3). Not having what he saw as a sense of ownership of the classes in T3, John had to re-orientate himself (Dreier, 1999) and be less ambitious about what he could and wanted to try in his lessons. This constricted freedom of movement inhibited his creation of a successful SSD in T3, compared with T2. In T3, John wanted to avoid the potential disruption and disapproval of his actions in an environment where his identity as a beginning teacher (Edwards, 1998) was already suppressed from not being able to carry his motives forward. Nevertheless, he tried to remain agentic, but needed to be prepared to respond if things went wrong from his attempts.

Like Jane, John found that the figured world of Sydney High was risk averse and criticism was a possibility, limiting his opportunities for action to be creative in his teaching. He reflected on an AfL strategy he used in T2 to engage pupils but would not attempt at Sydney High. He was unable to continue experimenting in the way he had while at Beaufort High: 'Like I tried out the snowball plenary where kids stood up with answers, screwed them up and threw them at each other, I would never try that here [Sydney High], just would not dream of it' (Interview, John, T3).

In the extract below, we can see why it was important for John to have control of his classes and how it enabled him to create a successful SSD in T2. However, the tight regulation

of John's actions in Sydney High inhibited him from taking forward his previous motives which focused on his learning and development as a beginning teacher and helping pupils learn.

> *I think once I have got my own class I will feel like I am in control of the classes, I am much more likely to just go with my ideas because that is the thing, they are risky in terms of when they do not pay off, like that lesson… I could have easily done that myself in fifteen, twenty minutes and given it to them… [but] where is the learning? Where is the independence in that?* (Interview, John, T3)

Jane also reflected on the limited control she had over her lessons in T2 and how compliance to demands was necessary to deflect potential criticism. However, even compliance to demands was difficult as Jane had to carry out actions which she did not agree with. She reflected on the challenges in working with demands from Liz and other teachers where the delivery of lessons at an appropriate pace was emphasised and not negotiable (Edwards & Protheroe, 2003).

> *We were always told you have to get the timing right, you have to do this and that, so I was always very strict on activities and how long they had to take, so even if they were not finished, I would move on which is a bit pointless really because if they have not finished then they have not done what they needed to do.* (Interview, Jane, T3)

The comparison of experiences in reading and responding to the demands of the figured worlds inhabited by Clare, Jane and John indicates the difficulty they found in exercising their agency and restricted possibilities for actions in tightly regulated activity settings where compliance to school demands mattered. Tom was a different case and did not experience these difficulties because he was working on his own identity project. He was aim-

ing at compliance in order to become the kind of teacher who fitted with the school practices, exemplifying the view that student teachers try to avoid potential disruptions in their lessons in order to preserve their fragile identities as beginning teachers (Edwards, 1998).

Their learning in schools was further complicated by the need to attend to both the demands from the figured world of the course and school. Consequently, creating a SSD was difficult when they decided that the navigation of demands required compliance rather than agentic engagement with them. What follows in the next section is an examination of what the student teachers brought in terms of their agency in creating the dialectical conditions in which they could learn while in the figured world of schools.

5.2 Creating learning dialectics in the figured world of the schools

The previous section revealed the challenges the student teachers had in exercising their agency and the limited control they had over their learning but did not discuss the dialectic between the learner and the learning environment. A major theme in this section is that the calibration of agency and demand seems to be crucial if student teachers are to be able to create a SSD during their school placements. When thinking about the dialectic of agency and opportunities for action, there appear to be two core dimensions. One dimension pertained to what student teachers brought to their placements in terms of their agency. The other dimension reflected the demands placed on student teachers' actions in activities. As way to tentatively model what is going on, Figure 5B was created to reflect the dialectic between demand, opportunity for action and agency for each student in each school.

These dimensions are represented as intersecting axes in Figure 5B. The horizontal axis represents the degree of agency student teachers could exercise in their school placements

from high on the far left to low on the far right. Moving from the bottom up along Figure 5B's vertical axis reflects the strength of demands placed on student teachers. For example, less tight regulation related to fewer demands and moving up the axis represents a greater need to comply with demands. The student teachers' reported experiences are located on these dimensions in relation to each placement. The intention is to provide a way of orienting to the learning dialectics which were or were not created by the students. The dimensions are not orthogonal (i.e. not independent and opposite), one might expect high self-agency when regulation is relatively low. Nonetheless, the distribution of students in Figure 5B reveals differences between students as well as differences between mentors and their interactions with students.

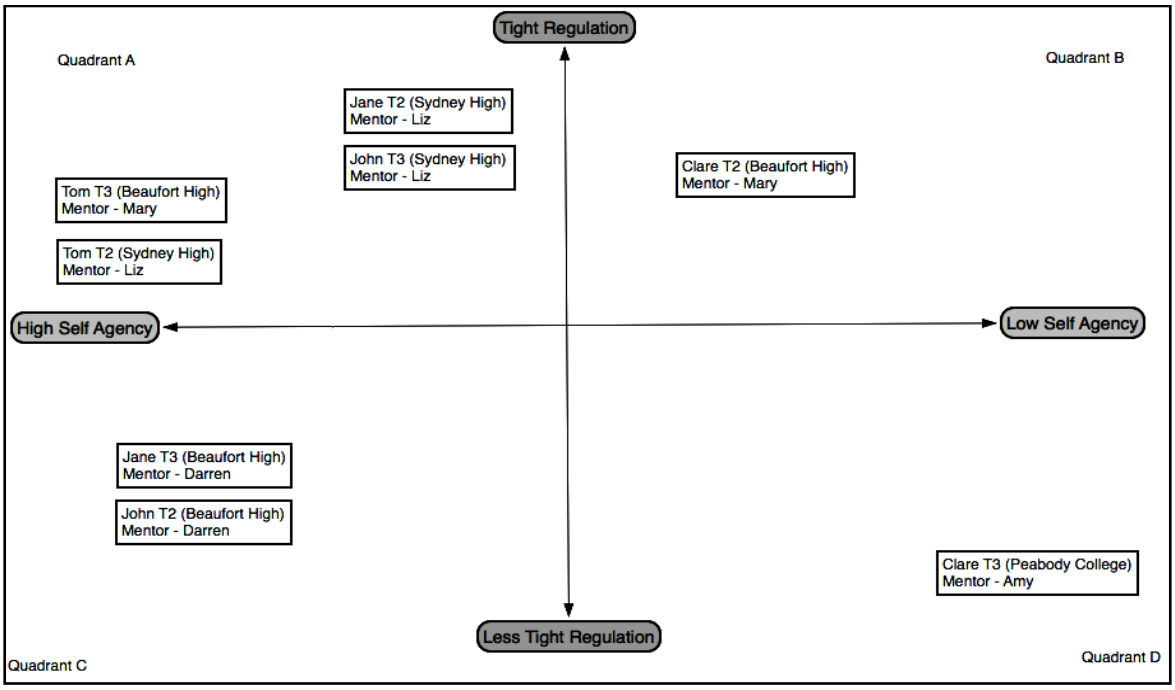


Figure 5B: Learning dialectics in the figured world of schools

For John, compliance to demands dominated in his second school placement. The consequent lack of dialectic between his agency and demands from teachers and pupils in the

figured world of at Sydney High appeared to limit the extent to which he could create a SSD and take his learning forward. John points to some of these problems. He attributed this difference in relation to the shorter term time in T3, but also to the space for him to exercise his agency as well as the amount of control he had over his classes.

> *You have got to remember we are only here for like eight weeks, so for them to let us have control is a little bit more risky… It is not like a three month placement where kids can build up a rapport with the teacher… It is very short and sharp, they get to know us and we are gone again*. (Interview, John, T3)

Jane was trying to survive in T2 and compliance to the demands such as using questioning as an AoL strategy was a tactic she used to deflect potential criticism. She struggled to stay motivated in T2 and recognised how little she had progressed as a result of the calibration of her own agency, and school demand being weighted towards demand. The extract below points to the fragile sense of herself (Edwards, 1998) when she was in T2 and how the feedback practices in the school suppressed her ability to create a learning dialectic when the focus was on what went wrong in her lessons. The extract also shows that the feedback given to her was not AfL in nature.

> *I do not like it when they just focus all on the negatives because you can come up with a lesson and think that it is gone alright and then they just tell you the negatives to begin with, and I do not think that is helpful. You do not need to come out of a lesson to be then be told that this is bad, this is bad... oh but that was alright… Because in class you are supposed to use praise and negative on a ratio of 4:1, but in Sydney High… my praise to negatives ratio was like 1:5… 5 being negative... There is quite a lot of negativity and I do not think that helps because especially when you are first beginning, but obviously they need to tell you bad stuff, they need to tell you what went wrong, but they could focus on what went well as well*

> *because I never really found what went well from most teachers, they did not tell me what went well they told me what went bad.* (Interview, Jane, T3)

On the other hand, the figured world of Beaufort High in T3 afforded Jane learning opportunities to create a learning dialectic. With less tight regulation of her actions in activities, she was able to focus on her teaching and pupil learning in T3. The creation of a learning dialectic brought changes to Jane's identity and how she was able to position herself more confidently at Beaufort High. She was able to work on her teaching and identify her lessons as interesting and fun. How she saw herself at Beaufort High was a sharp contrast to her former self at Sydney High. There was also less emphasis on delivering the curriculum and using questions to deflect criticism of her teaching. Jane's case illustrated the opportunities for action and her ability to exercise her agency when there was less tight regulation of her actions. There were demands made on her from Darren, but these were calibrated to suit her learning needs and will be detailed in the next section when transition is discussed.

> *I used to just go from one activity to the next whereas now I think it is more interesting and if they need to take longer on an activity they can, whereas before I was quite conscious of time... My teaching is a lot more interesting now, I do a lot more fun activities*. (Interview, Jane, T3)

The demands placed on learners are important and as we shall see in the example of Clare. The less tight regulation and low demands made on her in T3 did not call forth her agency to create a learning dialectic. Compared to T2 where compliance to demands mattered, Clare was able to position herself more confidently in T3 and navigate the demands made on her:

> *I think at Beaufort High, mainly because I was just starting out and did not feel like I could voice my opinion so much, but also just because of the way everything was there, everything was a bit more pressured and probably like, their opinion rather than mine… Here [Peabody College]… I would be able to put in my two cents about it… whereas at Beaufort High I would not have questioned what they set for me.* (Interview, Clare, T3)

Compared to the challenges of maintaining a good relationship with Mary in T2, her relationship and interaction with Amy was informal. Clare also appeared to have more control over her actions in T3: 'It is quite informal… quite relaxed and she hasn't actually been a mentor before, so in a lot of ways I am kind of telling her how it goes… which is a bit unusual… It is quite nice for me to be a little more in control' (Interview, Clare, T3). However, the low demands made on her from Amy did not produce a dialectic in which Clare might learn. Although Clare had more control, the lack of demands and less tight regulation over her teaching did not appear to call forth her agency. She was also not seeking to create a learning dialectic in T3 because the lack of demands appeared to help her feel competent in her teaching; she seemed to be recovering from T2 rather than placing demands on herself. Her reflections in T3 point to the lasting effects of demands that suppress agency from her experience in T2:

> *I think I learnt everything in Beaufort High really… I do not feel like I have got more to learn… I just mean it is nice to not be criticised. I did feel criticised at my last school…[and] when you have it all the time, it is quite draining.* (Interview, Clare, T3)

Tom, is an interesting case who demonstrated that people can create their own demands from the demands they identified and addressed. In both school placements, he placed de-

mands on himself as a beginning teacher who could fit in to school expectations. He did not see the value of the university elements of the programme and turned away from the figured world of the course. Determined to be a good practical teacher, he was more keen to learn from his experiences in school, from watching and listening to teachers (Calderhead, 1987). He therefore, positioned himself to be a competent and responsive student teacher in both placements.

> *I think everything, all your expectations, all your teaching practices... come from schools… and the teachers around you and picking it up from them… Do not get me started on the value of the university side of this course… I could rant of for a while… I think the university side can have far more value and be more worthwhile then it is… The mentors in the school basically do everything and you learn so much quicker by doing it and watching other teachers.* (Interview, Tom, T3)

Throughout the PGCE year, Tom aligned himself to engage with the figured world of schools instead of navigating both the figured world of the school and the course as a whole. He appeared to manage his own learning by creating a learning dialectic which was entirely focused on responding school demands to shape himself as a teacher. Throughout both terms, he responded to the demands from the teachers and mentors he worked with because these demands provided opportunities to learn how to teach, rather than compliance. Teachers in schools were seen as cultural resources (Holland et al., 1998) with years of experience and practical knowledge for him to learn and model from, as he worked on his identity project. However, this strategy meant that he accepted what the teachers were doing without question. His approach to learning during the PGCE year raised questions about the extent to which he was learning and preparing himself for a life of continuous professional learning.

> *So there was one year eight lesson where I had written a mapping task and Ruth [one of the teachers] said to me 'I do not think that is going to work very well, I think you should change it a little bit and these are my suggestions' and looking back on it, it would not have worked because she knew the class and she knew how things work because she is a teacher, she has been teaching for eight years.* (Interview, Tom, T3)

Although Tom is placed as highly agentic in Figure 5B, the extent to which he was engaging in a learning dialectic he developed as a continuous learner remains open to question and is difficult to interpret. He valued the practical aspect of teaching and did not question what schools offered to his learning: 'Teaching is such an on the job thing, practical on the job… it is getting that first hand experience from teachers which helps us learn the most' (Interview, Tom, T3). He managed his own progress and found that the best way to learn in the figured world of schools was to be adaptive and fitting in to the practice of each school.

Looking across the learning trajectories of the student teachers over the two terms revealed that calibrating agency and demand when supporting the learning of student teachers cannot be done in a formulaic way. Figure 5B reminds us that it is important to examine what student teachers bring in terms of their agency and motive orientations to understand their learning. This view echoes Hedegaard and Edwards (2014) writing about children's learning: 'The dynamic tension between the agency of the child and the demands and affordances of an activity setting, as played out in each activity, is where learning occurs' (p. 186). Nonetheless, the analyses do point to the dangers of relentless demands without the opportunity for the student teacher to exercise agency, and to the dangers of the lack of demand to the extent that the agency that leads to learning is not called forth.

This section also illustrates that although it is difficult to navigate both elements of the course. Clare, John and Jane appeared to have learnt while negotiating and navigating the demands in the figured world of schools and the course. Tom appeared to create a learning dialectic almost entirely from the demands of the school and demands he placed on himself while creating his identity as a teacher. However, the section also raises questions about how the teacher mentors provided opportunities for social situations of development to be created by the student teachers as learners. When the opportunities for agentic action are limited, the dialectic is difficult to achieve, and when demands are very low there is the danger that a student teacher with low self-agency may not learn. In this section I have therefore begun to point to the role of the teacher mentor in calibrating demands in relation to student teachers' agency. Their role should not be understated and the next section looks more closely at the mentors and the part they play in helping student teachers learn.

5.3 Mentors mediating learning

The previous sections highlighted the need to examine what student teachers brought in terms of their agency in creating a learning dialectic and the challenges in navigating and negotiating the demands in the different figured worlds. Figure 5B also points to the importance of teacher mentors when we see how student teachers were positioned and how they were able to create a learning dialectic in different schools. This section describes the role the teacher mentors had in mediating student teachers' learning and in particular how one mentor, Darren, was able to create and calibrate demands for his student teachers to help them to create a SSD. The teacher mentors were trying to help their student teachers learn but as we shall see, the new mentors needed help in seeing what their role as a mentor meant and how they could better support the learning of their student teachers.

In Chapter 4, we have seen how the dynamic tension between John's agency and demands from Darren enabled John to create a successful SSD. Darren did not only set demands but also provided 'pedagogical opportunities' (Edwards & Protheroe, 2004, p. 188) through modelling and demonstration to help his student teachers make sense of ideas and demands in the classroom. He calibrated their engagement with the demands he placed on them by drawing on his knowledge of student teachers' learning as well as the challenges of implementing AfL. Looking across the learning trajectories of student teachers and how student teachers were positioned in Figure 5B, we can see how both Jane and John benefited from working alongside with Darren. As described in Chapter 4, Darren was good at identifying what student teachers needed to be able to do and was aware of their own concerns, seeing them as agentic learners with intentions:

> *They are very worried about planning a lesson… finishing a lesson plan. They get bogged down in that [and] they are not willing to be very fluid with their planning. Probably because they are nervous… they are learning… they get concerned with getting to an end point… and they measure themselves by the end point not by what they [pupils] have learnt.* (Interview, Darren, T3)

As described in Chapter 3, schools and teacher mentors held higher expectations for student teachers coming into their second school placement in T3 and expected them to be at an advanced stage of learning to teach. Yet, there were differences in demands placed on both John and Jane by Darren. When Darren took over the mentoring role from Cindy in T1, he observed that John was able to teach and deliver lessons competently. He wanted more from John in his teaching and placed higher demands on him throughout T2. For Jane, Darren required a different approach after learning about her experiences in T2. He

calibrated his demands for her by placing small and achievable demands to build up her confidence in teaching. These demands were inherently low, given that student teachers were expected to go beyond the basic qualification standards in their second school placement. In the extract below, we can see how Darren was trying to create a possible SSD for Jane through these demands.

> *It was a different process for Jane… when I inherited Jane's situation… Jane's targets were very small and easily achievable to start with. So that she felt like she could make progress… so lots of the things that we did to start with was planning together … teaching together… so that she could get that feeling in the classroom of when the lesson has gone well, and you need to get that, you know…'This has been a really great lesson today'…'I feel good about it'… 'I am getting a good sense from the students'… and I wanted her to feel that. But I knew that because of where she was coming from a really low confidence point that we had to do that together. So, probably, the lesson was maybe sixty percent me, forty percent Jane but I told her that she had the ownership of the lesson. She was the teacher. I was just going to help her. So, through that, built her confidence until she was able to stand and deliver lessons on her own again and not have those confidence issues that she did previously. And, from that then we could focus down on the nitty gritty details of the practice*. (Interview, Darren, T3)

When looking at how Darren worked with both Jane and John, he was not mediating demands from the societal and institutional level, but focused on the needs of his student teachers by recognising their learning trajectories (Dreier, 2003). In that way, he was able to navigate the demands and requirements of the course to support their learning trajectories. However, not all mentors were able to take an approach like Darren's.

Mary and Amy, as beginning teacher mentors, felt they needed help in seeing their role and how they could better support student teachers' learning. The previous chapter illustrated

the apparent lack of demands related to both Clare's teaching and use of AfL in T3. It appeared that Amy placed low demands on Clare because she felt unprepared about what she could offer to support Clare's learning. She was abruptly given the mentoring role when Clare moved to Peabody College in T3, with little preparation for what the role entailed: 'To be honest, this school didn't even really speak to me during the time, so it is very much if you are mentoring, you are on your own' (Interview, Amy, T3). She found the mentoring role to be an isolating experience and described the difficulty in guiding Clare's use of AfL and what she could offer in terms of her expertise as a beginning teacher mentor:

> *I think it [AfL] is quite a hard concept to kind of teach… and obviously this is my first time mentoring… I have never taught a teacher how to teach before, so it is all kind of new to me but I would… just give her strategies and also during observations, give her formative feedback about how they [AfL] are working.* (Interview, Amy, T3)

While Amy felt that she could offer little support for Clare, Mary's approach seemed to largely involve using her knowledge from her previous experience as a student teacher and passing on what student teachers needed to know and do in their teaching (Haggarty, 1995; Valencia et al., 2009). She felt that student teachers would learn best by observing and replicating her advice in the classroom: 'To be honest, I just sort of went on what I needed to know at that point in my PGCE... what was useful for me to have experience in' (Interview, Mary, T3). Her directive style in mentoring was reflected in the controlling demands and critical feedback received by Clare in T2. As a new teacher mentor, Mary also felt some pressure to perform as a teacher and teacher mentor from the student teachers she worked with:

> *I might have to deal with a difficult situation… showing them what is a good atmosphere in a classroom, what is a good activity, what is a good assessment, what is a good AfL, what is rubbish AfL, what is a good start to a plenary… You know, anything at all, I just feel as though they were always watching me, they are always thinking - I guess they look at a teacher and think* '*that is how it should be done*' *even though I have stressed to them a lot of times that I don't do it perfectly.* (Interview, Mary, T3)

Like Amy, Mary struggled to offer ideas and suggestions to support her student teachers' learning and teaching. Other than offering advice from her PGCE experience, she also turned to her experience as a former NQT to support her student teachers: 'I struggle for creativity, because I teach so many lessons and so many classes, I find it hard to stop and think… because there is only a certain amount of hours in day… you get to the stage where you just think… oh just do the same that I did last year [NQT year]' (Interview, Mary, T3). Added challenges surfaced for her when student teachers had difficulty in coming up with ideas of their own especially when they were expected to do so in the second school placement. For example, Mary wanted Tom to use a variety of plenaries in his lessons but often had to intervene instead: 'I found that [supporting Tom] quite hard because it got to the stage where I was thinking like, you are not coming up with any ideas, let me just tell you, and that is not coaching at all… It is quite hard to mentor somebody like that' (Interview, Mary, T3). What is interesting about this extract was Mary's expectations and surprise that Tom was not at an advanced stage of his teaching. By the same token, it also an example of how Tom complied in order to fit in rather than taking an initiative to take his own learning forward. By working and being dependent on demands from schools with which Tom wanted to comply, he struggled to address challenges when it

came to coming up with his own ideas. The extract also suggests that Tom had not moved on in his teaching during the second school placement.

It appeared that Mary's resulting directive style of mentoring may have made it difficult for student teachers to create a learning dialectic because of the high levels of control she placed on them. Mary felt that she needed to pass on her knowledge on teaching: 'Everything that they need to achieve, I need to exemplify really… I need to show them how it is done' (Interview, Mary, T3). We saw how Mary valued the use of questions as an important compliance tool for Ofsted in Chapter 4 and may explain why she was worried about giving too much control over her classes to student teachers: 'They basically take over the class, and you kind of have to trust that what they are doing is right' (Interview, Mary, T3). Mary was therefore mediating demands from Ofsted and was more concerned with the learning of her pupils than the learning of student teachers (Edwards & Collison, 1996).

There is therefore something to be learnt from how student teachers were able to create a learning dialectic from Darren's approach to mentoring. Darren was doing more than setting and tailoring his demands. He helped his student teachers see and make sense of the demands made on them by providing a combination of what Grossman et al. (2009, p. 2058) labelled as 'representations of practice', 'demonstration of practice' and 'approximation of practice' for the student teachers he worked with. Both John and Jane received multiple opportunities to observe and engage with ideas in authentic classroom settings. These ideas did not just focus on AfL but also included ways of getting pupils engaged in the classroom.

Mary's case points to the challenges in how teacher mentors are positioned in different practices and have to focus on what matters in schools (Edwards & Protheroe, 2004). Consequently, she heavily controlled the actions of her student teachers. In these situations, creating a learning dialectic becomes challenging for student teachers as their motives are directed towards the evaluation of their performance by their teacher mentors (Edwards & Protheroe, 2003) and seeking approval through compliance (Bertone, Ménard, Euzet, Ria, & Durand, 2003), leaving little room for student teachers to interpret and reflect on their actions. This compliance and limited reflection appeared to inhibit their ability to connect their own experiences with the public meanings that underpin teaching (van Huizen et al., 2005), though, as we have seen, one set of public meaning, Ofsted criteria were made explicit. The findings here show, in line with earlier observations (Edwards & Protheroe, 2003), that student teachers are at risk of being not learners, but very efficient performers in delivering the curriculum. These points were clearly reflected on how Clare and Tom had to focus on AoL and deliver lessons at an appropriate pace while working with Mary. On the other hand, Amy had concerns over what and how she could offer in terms of her own expertise in teaching as well as in AfL to Clare and was unable place sustained demands on Clare to enable her to create a learning dialectic in T3.

5.4 Transitions and implications for their learning

This section focuses on the transitions between figured worlds (Holland et al., 1998) and how the transitions (Beach, 1999) brought disruptions to the student teachers' learning and identities as beginning teachers. It begins by describing the kind of transition, consequential or otherwise (Beach, 1999), as experienced by the student teachers, before providing a summary of their transitions to their second school placements in relation to learning di-

alectics they could or couldn't create. The four student teachers were all expecting the final placement to continue to prepare them for becoming a teacher, that is, to support their learning. The assumption in the course design was that this kind of repositioning in the second placement school would allow the student teachers to perform beyond the basic standards for qualification and begin to flourish as beginning professionals. They therefore, in Beach's (1999) terms, expected the transition to the second placement school to be consequential as involving 'changing relations between persons and social activities represented in signs, symbols, texts, and technologies or, more generally in systems of artefacts' (p. 114). The findings indicate that their transition to their second school placement carried implications and consequences for them as learners in different ways.

5.4.1 New and different learning dialectics

The key message arising from their transitions is the potential disruption to their learning, arising from the dynamics at work between the institutional demands and what student teachers brought in terms of their agency to their second school placements. While student teachers' leading motives, passing the course and becoming a teacher, remained unchanged as they moved between practices, they nonetheless had to recognise the motives in the new practices they inhabited. Earlier motives had to be restructured as they entered a new practice (Hedegaard & Edwards, 2014), requiring student teachers to develop new motives and recognise new demands, which they then needed to be able to work with. They each worked with these demands in different ways with different implications for creating a SSD.

John anticipated the move to his second school as a positive consequential transition in helping him move further forward as a beginning teacher. However, he soon became dis-

appointed as he was unable to create the learning dialectic he once had at Beaufort High and gradually became disengaged from his teaching as his agency was suppressed. He questioned whether he had made the right move in choosing teaching as a career which was uncharacteristic of him when we look at his learning trajectory in T2:

> *At the end they [Sydney High] were like,'John, you have been amazing… it is great to have you' but I have never really felt that when I was there… I just was not enjoying it so I was constantly counting down which meant I was not as interested in the teaching and this has been the first time I questioned whether I wanted to go into the profession, which at Beaufort High I would never have done.* (Interview, John, T3)

It was only in the final weeks of the term John felt he had some room to exercise his agency to continue how he wanted to teach in his lessons: 'Now I think towards the end, maybe because there is a light at the end of the tunnel… I am being a bit more creative and using AfL more effectively to make sure that everyone at the end of the day is motivated' (Interview, John, T3). John's case is an example on how transitions can bring about detrimental implications for the motivation and learning of a beginning teacher who was able to create a successful SSD in the previous school placement. His transition to Sydney High also illustrates how student teachers may revisit earlier stages of learning they had progressed through (Furlong & Maynard, 1995).

We can see the importance of transitions in a different way with Clare as she moved from a tightly regulated environment to an environment with low demands on her as a beginning teacher. The transition initially presented Clare with difficulties in reorienting her learning trajectory as she confronted a sharp change in demands in her second school placement. She needed to develop competencies quickly in managing behaviour and slowing down the

pace of her teaching to work with the more difficult school catchment at Peabody College. By the middle of the term, she was able to position herself more confidently in working with these demands. However, the lack of demands placed on her actual teaching did not lead her to call forth her agency to create a learning dialectic. The transition was a disruption but one that allowed Clare to recover from the high levels of control exercised by Mary in T2. In T3, she avoided demands rather than take her learning forward.

On the other hand, Jane moved from an environment where she was trying to survive and avoid criticism, to a situation where she was able to create a learning dialectic which mattered to her in T3. Her transition and ability to propel herself forward with Darren's help also remind us of the importance of working alongside a mentor who is capable of calibrating demands to meet the needs of the student teacher. Her sense of identity as a teacher was rescued by Darren through his managing of demands and her transition was consequential because it allowed her to position herself in the practice of a school with growing competence.

Tom's learning trajectory reflected the kind of teacher he wanted to be. He did not observe significant changes in demands which might have required him to re-orientate his learning trajectory. There is a lack of reflection in the following interview extract when it is read in the light of Mary's earlier comment on how Tom remained dependent on ideas from her during his second school placement.

> *I am now at my second placement school… you know they are expecting my teaching practice to be far more secure, far more well rounded... when you are in your first placement, they can kind of let a few things slide… But I think now that, my general teaching practice is okay. I can pass as a teacher… my mentor had been*

> *picking up on things a little more harshly then Liz did… It is probably because of the stage of where I am this year.* (Interview, Tom, T3)

He was able to carry his earlier motives forward to his second school placement, but this ease of transition and focus on compliant performance point to how his actions in activities in both sets of school practices were oriented to performing as a competent teacher, within the expectations of the schools. This interpretation of Tom's learning trajectory raises questions about how much he had learnt or developed as a beginning teacher. For example, he did not reflect on the increased demands placed on him by Mary, but instead saw himself as a good beginning teacher. These demands included Ofsted-related standards, which he accepted because he was oriented towards becoming the kind of teacher who could fit into school expectations:

> *Ofsted has been mentioned quite a bit here… All teachers are thinking about Ofsted all the time really aren't they? Because that is their bar, that is their level, that is what they are marked against. So I guess maybe Mary is just trying to get me to think a little bit more about that in my teaching practice, the way I plan lessons and things.* (Tom, Interview, T3)

Tom's trajectory is interesting because it revealed no struggle between the demands of university and school. He had decided who he was and wanted to be, and used the year to work on a convincing performance. He did not seek or recognise difficulties, again raising questions about how much he had developed as a thinking professional in responding to pupils needs.

5.4.2 Disruption to learning

The opportunities to create a SSD in which learners were able to propel themselves forward differed for each student teacher and their transitions remind us of the non-linear nature of their learning trajectories in the PGCE year. In each case, the transitions worked differently and with different implications for their learning and the development of professional identities. The changes in demands and motives were not the only features of their transition. The student teachers also exercised their agency differently across these transitions.

Both John and Tom were able to make the transitions work for them because they had a strong sense of the kinds of teachers they wanted to be. But whereas John's transition had consequential potential, Tom did not experience a disruption by changing schools, but continued his personal identity project by working hard at fitting in. Tom's leading motive was to be a good practical teacher and was managing his learning throughout both placements. He relished the opportunities to observe and learn from teachers in the school as well as work on the demands placed on him without question. However, his learning trajectory seemed to be leading towards the kind of professionalism Evetts (2009) would label as organisational professionalism because of his motivation to work towards compliance such as Ofsted standards. There seemed little interest in Tom for working towards the kind of occupational professional (Evetts, 2009) that John was becoming.

The transition was far more difficult for John but worked for him in different ways. He became disengaged from teaching in much of T3 as his motives shifted to passing the course and fitting in the school. Although the transition was disruptive to his learning, he was able to work around the demands and use that difficulty as an opportunity for reflection of a consequential kind on the type of teacher he wanted to be in future, enabling him to define

a ‘possible self’ (Ronfeldt & Grossman, 2008, p. 44) in the kinds of practices he would engage in for his upcoming NQT year. In a way, the transition helped John to define and strengthen his professional identity as a novice teacher.

The transition was also consequential for Jane's learning trajectory but the low demands together with the need for her to develop her confidence meant that, although beneficial, the transition became consequential slowly. Although she was able to create a learning dialectic in the second school placement, her learning and sense of self as a beginning teacher was largely rescued by Darren and she exhibited and it appeared that she needed more time to develop as a professional.

Clare's transition was also consequential, she found that she could be another kind of teacher, in a less pressured environment and found the change to be a relief. She adjusted her motives within the less pressured environment by avoiding demands that would have helped her learning. Clare appeared to have taken on a diminished view of what it means to be a early career teacher in the final weeks at Peabody College: ‘I think now that I have been here, I can see that you can still be a good teacher and not get a massive amount of work down in their books... I think you can be a good teacher in other ways, so by having a calm environment and a well-behaved environment, I think that makes you as good a teacher’ (Interview, Clare, T3).

By the end of the final teaching placement, the student teachers arrived at different points in their learning trajectories as beginning teachers and were at different stages in their learning (Calderhead, 1987; Furlong & Maynard, 1995). The study has also revealed the limited agency they had in negotiating the demands made on them, the differences in how

they were supported as learners and how they were enabled to become increasingly self-directed. As we shall see in the next section, the student teachers were capable of recognising and engaging with challenging demands to take their learning forward, if presented to them.

5.5 Learning through participation in the study

The chapter has pointed to the lack of demands placed on student teachers by most of the mentors in relation to using AfL in their teaching and the challenges they consequently had in creating a SSD while using AfL to support pupil learning. This section describes how participating in the study enabled student teachers to begin thinking more about AfL and how they were able to take in additional demands for using AfL in their teaching.

5.5.1 Participation in the study

The interviews emerged as an important stimulus for the student teachers to reflect on their use and understandings of AfL in their teaching as well as on their learning in schools. Drawing from student teachers' responses during interviews, a common theme was that they would not have thought about and experimented with AfL as much if they had not participated in the study. While student teachers felt they benefited from participating in the study, it appeared that John in particular gained from the study in relation to his development as a beginning teacher.

Throughout the study, Clare struggled over what AfL meant and reflected on how the study enabled her to understand more about AfL but still felt she had more to learn about it at the end of the study:

> *Doing these interviews has made me more aware of it [AfL], because if I had not had to think about it so much, I might not have twigged it… I am just gradually understanding it more… I probably still do not know all the methods of AfL or what I could do improve.* (Interview, Clare, T3)

For Jane, the study helped her to think more about AfL and mobilised her agency to discover other ways of using AfL in her lessons despite the difficult teaching experience she had in T2.

> *It has made me think more of the AfL and made me think that I should use it more… I think when I first met you… I was kind of, 'how do you fit AfL in?' I was not really sure and so it made me look at the AfL PowerPoint I found. I did look at it and it just made me think on how to use it… If I had not have done this I probably still would have used it but I probably would not have experimented as much with it.* (Interview, Jane, T3)

Similarly, Tom reflected on how he would not have thought about AfL as much if he had not participated in the study: 'I would not have thought about it as much. I would not have talked about it as much. I would not have… implemented as much' (Interview, Tom, T3).

On the other hand, John appeared to have taken away more from the study. The interviews prompted John to rationalise his actions in activities and stimulated his thinking on the 'where to' (Engeström, 2007) aspects for using AfL. John's reflections involved a 'present-future' (Heritage & Heritage, 2013, p. 180) and 'anticipatory' (Moss, 2008, p. 252) orientation towards his use of AfL by focusing on how he would use AfL in his future lessons to help his pupils learn.

> *I have to rationalise what I have done… articulate it and that, for me, has helped me to understand what it [AfL] is and to be able to implement it in my lessons to a*

> *much greater degree than any other point... When we have had these conversations I have gone away and thought about what I could do differently and how I could do things more creatively and get more kids involved I would go away and think,* '*Right, what am I doing in my next lesson? How can I make my AfL more creative? How can I feedback in a more creative way?' So it is those sorts of conversations that I then started to do different things again and it is that just having to reflect on it makes you want to do better with it*. (Interview, John, T3)

These responses illustrate how their participation in the study had benefited them in their learning, understanding and use of AfL in their lessons. What is also clear from the student teachers was that they were able to take on additional demands in using AfL in their teaching. The key message from their reflections was how they would have thought less about AfL if they had not participated in the study, which raises questions about their learning to use AfL if they had not done so. The next sub-section describes how consistent and clear demands would have propelled student teachers to make sense of AfL in their teaching.

5.5.2 Capacity to take on challenging demands

Tom was managing his own learning by working on his own identity project and managing his own learning. He was seeking demands with which he would comply rather than recognising challenges that would take his learning forward. He did become an efficient user of AoL and positioned himself as a competent teacher in school, but as I have argued, his actions raises questions on about his learning. The other three student teachers reflected on the lack of demands on them to use AfL in their teaching and how they were capable of taking on additional demands for AfL. Clare had limited opportunities to develop her understandings and use of AfL in both school placements. She reflected that she was able to take on additional demands in using AfL but without understanding the 'what' and 'why'

of AfL, in addition to the demands she had to meet, she found it difficult to use AfL in her lessons:

> *If you have got somebody looking at what you are doing, they are looking at a particular thing you are just more likely to work on it, you get the feedback on it, you can improve it. Whereas if it (AfL) is just vague… you are not focusing on one thing to improve… it is hard*. (Interview, Clare, T3)

Jane echoed Clare's concerns over the need for demands to use AfL in her teaching. We saw how Jane had limited opportunities to use AfL in T2 when she had to focus on using questions as an AoL tool and curriculum delivery. Opportunities for her to use AfL only arose at Beaufort High with Darren. Jane reflected on her teaching experience and pointed to the importance of demands for her to use AfL:

> *I would use AfL more if I was told that I had to and it was not an option… It would probably make me use them more and I would think about putting them throughout the lesson.* (Interview, Jane, T3)

John, who experimented with AfL the most amongst the student teachers, commented on the need for sustained demands in order to be thinking actively about AfL. He reflected on his experience in T3 when there was an apparent lack of demands for him to use AfL:

> *You kind of forget unless you really think back that you were actually sort of told and at times it can seem like you are not really told anything about it and there will be weeks and weeks and weeks where no one mentions anything about AfL in your lessons.* (Interview, John, T3)

The study informs us that the student teachers were potentially agentic learners and capable of tackling additional demands, but these demands needed to be clear, sustained and

strong enough for student teachers to recognise and respond to them. As we have seen in the previous sections, the over control of Mary or the lack of demands from Amy carried implications for whether student teachers were able to create a SSD in which they could propel themselves forward as learners. The student teachers also observed that the demands rarely related to AfL as understood in the literature; instead demands were related to AoL. In addition, in all but the placements with Darren, student teachers found it easier to comply and navigate than negotiate while participating in school practices.

5.6 Chapter summary

In this chapter, I have looked across the four trajectories discussed in the previous chapter to answer the second research question 'What does an examination of AfL as a pedagogical tool reveal about student teachers' learning in schools?'. The four student teachers went through the early stages of becoming a teacher in their first placements and then moved to their second placements where there was an expectation that they make the most of the short period of time and transform themselves into self-directed learners and teachers. Yet, what we have seen in the previous sections is a very a mixed picture of how the student teachers have progressed throughout the two terms. Their learning across the two terms was far from smooth and their learning trajectories were complex. There was a clear non-linearity on the learning trajectories for Clare, John and Jane. We also saw a clear example of the detrimental nature of John's learning trajectory from his transition to Sydney High. Yet for Tom, working on his identity project throughout both school placements and acting accordingly to the demands placed on him and which he was working on raises questions on his development as a beginning teacher. By comparing the four trajectories, the chapter reminds us of the need to examine how the student teachers were able to make the most of

the learning opportunities presented to them. The idea of figured worlds highlighted the challenges in navigating or negotiating the demands and practices of the figured worlds of the course and the different schools they worked in.

Student teaching has also been a key discussion point. I have suggested that tightly regulated environments inhibited student teachers' creation of a learning dialectic; while loosely regulated environments did not call forth their agency to take their learning forward. I also pointed to the need to examine what student teachers brought in terms of their own agency. The chapter suggests that there is no formulaic way of creating demands that will help student teachers take their learning forward but there is a clear indication that relentless demands do more to curb their agency than help them take their learning forward. Darren's careful calibration of demands to support two very different student teachers' learning and to nurture an agentic, responsive and occupational version of professionalism, seems to offer some useful lessons.

The idea of transition (Beach, 1999) as a key concept emerged only when the data on T3 were analysed. Their transitions to their final placement revealed the disruption to their learning trajectories in different ways. There was an expectation in the programme that student teachers will be able to read and negotiate the figured worlds of their second placement very rapidly and agentically take control of themselves as learners but this did not happen. As I have already indicated, the transitions to the second placements were in different ways consequential, but not in ways that met the intentions of the PGCE programme.

Chapter 6: Discussion

The study centred on student teachers learning to use AfL as a pedagogical tool in schools, seen from a cultural-historical theoretical perspective. The focus has been to understand their actions in activities from the perspective of student teachers. Examining how student teachers learnt to use AfL became a focus of enquiry in the thesis to examine not only how they learnt to use AfL but also their learning in schools. While there were some consistencies with the findings discussed in the literature, there were also surprises arising from the study. The chapter is divided into five sections. The first section addresses how I answered the two research questions in the study: (a) How and why do student teachers use AfL in teaching secondary geography? and (b) What does an examination of AfL as a pedagogical tool reveal about student teachers' learning in schools? Next, the implications for practice and ITE are presented. This section is followed by the contributions of the study to cultural-historical theory and AfL. The fourth section includes methodological reflections, limitations of the study and directions for further research. The chapter concludes with final reflections on the study.

6.1 Answering the research questions

6.1.1 How and why do student teachers use AfL in teaching secondary geography?

The thesis revealed the different ways in which AfL was used, understood and for what purposes by student teachers in schools. The misinterpretations and misappropriations of what AfL was and how it was used in schools (Swaffield, 2011) had implications for what student teachers were actually learning about AfL. The ambiguity over what AfL was and

how it might be implemented in classrooms supports Boyle and Charles's (2010) findings on the lack of consistency in what schools understood about AfL and the purposes it served. The thesis adds to the literature by highlighting how AfL was introduced to student teachers as sets of strategies to use which focused heavily on the letter rather than the spirit of AfL (Marshall & Drummond, 2006). Closer examination revealed that the purposes of these strategies were mainly AoL (Newton, 2007). As student teachers worked with these strategies and complied with school demands, with the exception of John, they lost opportunities to learn how AfL could be used to inform their teaching and planning and respond to pupil learning (Broadfoot et al., 2002; Cowie & Bell, 1999).

The idea of demands in practices is a central concept and brought an added dimension to understanding student teachers' actions in activities. It afforded an understanding of how or whether they were able make sense of AfL as well as their ability to create a learning dialectic in relation to using AfL in their lessons. With the exception of Darren's interactions with John and Jane, there were low levels of demand on student teachers for engaging with AfL as a pedagogical tool. Schools and teacher mentors foregrounded the 'how', 'when' and 'why' aspects of AoL rather than the 'why' and 'where to' aspects of AfL emphasised by the university. The lack of demands in engaging with the epistemic functions (Engeström, 2007) of AfL and ambiguity surrounding its use created barriers for student teachers to expand their understandings and use of AfL when other functions of the tool were foregrounded.

The problem with AfL in schools is perhaps linked to how it is seen as 'deceptively simple' (Mansell & James, 2009, p. 11) and this simplicity may mask the complexities and demands for its successful implementation and integration in classrooms. The lack of de-

mands and oversimplification of AfL, so that it becomes AoL with an emphasis on ‘how’ to do it brought added challenges to student teachers' activities. For example, it was difficult for them to shift from AoL to types of AfL, which required the active participation of pupils, such as self-assessments. Here, the lack of demands in relation to AfL reflected the sociocultural dimension of assessment at the classroom level (Gipps, 1999). Both Jane and Clare had limited success with the use self and peer assessment, which might have enhanced pupil learning.

The present study suggests that AfL strategies requiring self and peer assessment by pupils can be seen as higher order strategies for student teachers to learn and implement as it involves changes in the relations and dynamics involved in teaching (Pedder & James, 2012; Perrenoud, 1991). This finding lends support to Webb and Jones (2009) findings with in-service teachers, that using these strategies requires establishing a classroom culture of trust and honesty to facilitate pupil involvement and participation. Knowing the ‘how’ and ‘when’ functions of these strategies were insufficient for successful implementation. Establishing a culture of trust in classrooms takes time and the study raises questions about whether student teachers would be able to realise the potential of these tools with the limited time they have in each school placement and when the focus is on the ‘how' and ‘when’ aspects of AoL in classroom teaching. Student teachers will need additional support to try these types of activities and may need to think carefully about the structures, routines and guidance they provide to pupils when using these tools on school placements.

Tracing their learning trajectories also revealed the interconnections between their developing identities as teachers and their use of AfL or AoL. Their use of AfL and AoL began to indicate the broader purposes for using these tools with implications for the develop-

ment of their identities as teachers and how they positioned themselves in schools. Jane recognised the demands for using questions as a 'how' and 'why' AoL tool in her lessons, but also began to use this successful strategy to deflect potential criticisms of her teaching and protect her fragile identity as a beginning teacher. Similarly, Clare used end of lesson plenaries as a 'how', 'when' and 'why' AoL tool to check for pupils' learning and demonstrate compliance to her mentor's demands. These two student teachers were using AoL as a 'why' tool (Engeström, 2007) and a cultural resource (Holland et al., 1998) to survive and pass their school placement. By using AoL in this way, they were also navigating the demands of both the figured worlds of the course and school.

There were also differences for John and Tom. On one hand, working and engaging with AfL-related demands enabled John to see the longer term purposes, the 'where to', of learning to use AfL during the PGCE year to help him develop and prepare his role as a certified teacher in his upcoming NQT year. On the other hand, Tom was able to create a SSD entirely out of school based demands and worked on AoL to position himself as a competent beginning teacher who could fit into the demands and practices of the schools. The different ways and purposes for using AfL and AoL by the four student teachers supports Engeström's (1990) argument that 'a tool always implies more possible uses than the origin operations that gave birth to it' (p. 174). They had different motive orientations for using these tools in their activities and what they wanted to achieve. These tools were not only used for classroom teaching but also served the purposes of building and protecting their identities as beginning teachers.

This identity work and motive orientations continued when they moved to their second placements. As I have already indicated for Clare, Jane and John, their transition to their

second school were consequential (Beach, 1999) to their learning trajectories in relation to AfL. Student teachers had to align their motives with the motives and demands of the second school and develop new competencies (Hedegaard, 2012). When demands conflicted with earlier motives that had been developed in the previous school placement, these changes had detrimental consequences for their learning trajectories in the case of John. While studies such as Grossman et al. (1999) and Smagorinsky et al. (2003) indicated that student teachers were able to develop conceptual underpinnings of pedagogical tools or concepts by the end of their teacher education course, the thesis challenges the idea of the transfer of knowledge in learning to use AfL across practices that these studies have pointed to. For example, John's case does not lend support to Grossman et al.'s (1999) suggestion that student teachers, who have appropriated the conceptual underpinnings of a tool 'are likely to able to make use of it in new contexts and for solving problems' (p. 17). It was not that John lacked the conceptual underpinnings of AfL, he was simply unable to deploy it in his second school placement. Working on different demands in the practices of his second school prevented him from using AfL and hindered his ability to focus on the 'where to' aspects of AfL in his teaching. John's case highlighted the need to recognise the challenges and implications for student teachers' learning trajectories arising from the transitions (Beach, 1999) they make across different schools and how they could be better supported in carrying their motives forward.

With exception of John, the three student teachers exited the PGCE programme with a narrow view of AfL as a pedagogical tool for promoting pupil learning. Given that student teachers had heard about the 'why' and 'where to' features of AfL in the university, it was perhaps surprising that they did not seem to challenge and contest the meanings and pur-

poses for using AfL as well as the demands placed on them in schools. If the meanings and purposes for using AfL are left unquestioned and unchallenged by the learners, the tool itself has the potential to only become a 'how' tool (Engeström, 2007) where only the surface features are recognised (Grossman et al., 1999). Clare, Tom and to an extent Jane, remained in varying degrees of confusion on 'what' AfL was by the end of the study. Only John was not confused as he had opportunities to work with AfL-related demands at an early stage of the PGCE year and was able to engage with AfL in T2. Student teachers did become more efficient users of AoL in delivering the curriculum (Edwards & Protheroe, 2003) but they did not learn to become responsive in using assessment to promote pupil learning. It was also evident that the teacher mentors were not working with the ideas given to the students by the university, raising questions about the nature of partnerships in the training of teachers.

6.1.2 What does an examination of AfL as a pedagogical tool reveal about student teachers' learning in schools?

Addressing the second research question revealed the complex nature of learning to teach and the opportunities student teachers had for creating a SSD through examining their uses of AfL. The learning trajectories and concerns of the four student teachers were far from the linear progress that Fuller and Bown's (1975) model of student teachers' learning would indicate. These four student teachers were at different stages of their learning and development as teachers during the year (Calderhead, 1987; Furlong & Maynard, 1995). Similar to the student teachers in Calderhead's (1987) study, Clare was able to move through more than a single stage in a single term. Clare was initially trying to survive in T3, but gradually relaxed by the middle of the term. As Furlong and Maynard (1995) indi-

cated in their broad stages of development, student teachers may revisit initial stages of learning in the duration of the teacher training year. In the later sections, I will indicate how the present study adds to their work by offering an explanation of how and why student teachers can revisit these stages as a result of moving to a second placement school, through the idea of consequential transitions (Beach, 1999).

Student teachers were navigating the demands in the practices of the figured worlds (Holland et al., 1998) of the school and the course. These aspects pertained to the evaluation of their performance as part of the course and responding to demands of their teacher mentors. As a result, they appeared vulnerable at times as beginning teachers. The challenges for them in exercising agency extended to not only needing to comply with or navigate the demands made on them, but also to how and what student teachers could do in their lessons. When passing the course became a leading motive, learning to teach became a high stakes activity where performance of actions dominated over the meaning of their actions (van Huizen et al., 2005). There was also a heightened concern over actions that would lead to criticisms of their teaching (Gonzalez & Carter, 1996). Consequently, student teachers avoided taking risks in their lessons to ensure that they were delivering the curriculum and not disrupting the flow of lessons (Edwards, 1998; Edwards & Protheroe, 2003).

Opportunities for the student teachers to develop as competent users of AfL differed in each school placement and demonstrated some of the potentially adverse effects on their learning in tightly regulated settings as well as those settings where there were low demands. Examining their learning in these settings enriches our understanding of such environments, particularly the demands placed on the student teachers and how they were not

able to negotiate these demands. Student teachers who taught in tightly regulated settings where compliance to demands dominated, had a suppressed sense of agency which limited their opportunities in creating a learning dialectic. Echoing Anderson and Stillman (2011), student teachers learnt more about what not to do in their lessons rather than what they should be doing to help pupils to learn in these settings.

Yet, examining the demands in these settings offered a partial explanation for how they were learning. There was also a need to examine the extent to which student teachers were also able to interpret and respond to demands in ways that were important to them as learners (Edwards, Gilroy, & Hartley, 2002) and in accordance with their motive orientation (Hedegaard, 2014). For example, Tom saw demands in tightly regulated settings as opportunities to learn and to comply with what was expected of him as a teacher while Clare found tight regulation an impediment to her learning.

On the other hand, one would expect that student teachers would be able to create learning dialectics under less tightly regulated settings (Hedegaard & Edwards, 2014). This expectation was upheld for both Jane and John because there were still demands at Beaufort High; however, it did not happen for Clare as there was a lack of tension between personal agency and demands from the environment at Peabody College. The findings on their learning in different settings support Dreier's (2003) assertion that the environment does not determine the learning trajectory of the learners. The study suggests the importance of the following: (i) looking closely at what student teachers bring in terms of their agency and motive orientation (Hedegaard, 2014) and how they engage with the motives and demands in activities; and (ii) the dangers of over control and lack of control when mentors

attempt to support student teachers as learners who are attempting to create their SSD while placed in schools.

The different disruptions to their learning trajectories arising from their transitions invites us to consider Beach's (1999) argument about the kinds of consequential transitions that are beneficial rather than detrimental: ‘We need to address what sorts of consequential transitions we wish to support through education and which we choose to work against, for much that is consequential may not be what we hope for’ (p. 139). Instead of working beyond the standards in relation to AfL in T3, the lateral transitions (Beach, 1999) did not advance their learning to use AfL. John continued using old AfL strategies from T2; while Clare was still using plenaries as an AoL tool. Although Tom worked with increased demands, he was still working on AoL and his identity project. Jane apparently needed the lowered and well calibrated expectations she received from Darren to help her recover from T2 but was still using questions as an AoL tool.

Moving across different school placements involved changes and reconstruction of knowledge rather than the transfer and reproduction of knowledge (Beach, 1999). Yet, there was limited support in schools to help student teachers read their new figured worlds (Holland et al., 1998). Student teachers were left on their own to identify these demands and what was significant in their new figured worlds. Focusing on these aspects took time and energy for them to re-orientate their learning trajectories (Dreier, 1999). Their transitions raises questions about the purposes of the second school placement because the entry into new figured worlds did not enable them to propel themselves forward in becoming self-regulated learners who were using AfL to help pupils learn.

The study suggests that teacher mentors' interpretations and use of AfL as well as the kinds of feedback and support they provide to their student teachers were influential in mediating their learning to implement AfL in schools. With the exception of Darren, discussions in interviews about mentor feedback indicated that feedback focused on the performance of action to meet the demands from their teacher mentors. Darren did give the opportunity for reflection and consideration of the 'why' and 'where to' aspects of AfL, but the other mentors offered little room for interpretation and sense making, a point already found in previous research (Clarke et al., 2013; van Huizen et al., 2005). Compliance to demands involved modelling closely the advice of their teacher mentors (Gonzalez & Carter, 1996) in order not to disrupt the regular flow of teaching (Edwards, 1998).

As I have already indicated, the ways in which teacher mentors created demands were significant and had implications for whether student teachers were able to create a SSD. The study suggests that there were three ways in which these demands can facilitate or inhibit student teachers from creating a SSD. Firstly, demands that were calibrated to focus on student teachers' personal learning trajectories rather than educational trajectories (Dreier, 1999, 2003), i.e. what was expected of them, were helpful in enabling student teachers to create a SSD. The study points to the importance of placing student teachers with teacher mentors who are willing to navigate the demands of the course and school and provide feedback and support based on student teachers' learning needs as they develop over the year of the programme.

Secondly, demands that drew from the mentor's experience as a former student teacher and what had worked for them when creating demands for student teachers (Haggarty, 1995;

Jones & Straker, 2006; Valencia et al., 2009) offered fewer opportunities for student teachers to create a SSD. These demands positioned student teachers as guests (Edwards, 1997; Nolen et al., 2011) and 'proxy teachers' (Edwards & Protheroe, 2004, p. 194) in their classrooms. Student teachers were required to follow these demands closely as a way of delivering the curriculum and not disrupt the flow of lessons (Edwards & Protheroe, 2003).

The third kind of demands derived from what matters (Edwards, 2010a) or the institutional motives of the school: for instance, the use of AoL mediated by Ofsted's criteria of teaching and learning. While Butterfield et al. (1999) indicated how accountability pressures in schools provided fewer opportunities for student teachers to engage with AfL, the present study revealed how the dominance and use of AoL (e.g. end of lesson plenary) were presented to student teachers in the form of criteria compliance (Torrance, 2007). The demands arose from the institutional motives in responding to Ofsted's criteria in teaching and learning, which were mediated by the teacher mentors. The two types of demands here suppressed the agency of student teachers and inhibited the creation of a SSD. Yet, compliance to these demands were necessary to pass the course.

6.2 Implications for practice and teacher education

6.2.1 Design of teacher education programmes

The analyses of student teachers' transitions and their learning has implications for the design of ITE programmes. Although student teachers had informal preparation in the university prior to their second school placements, these aspects did not surface during the interviews. Except for John, the student teachers were unprepared for taking over their

own learning trajectories after the PGCE year to create the kind of occupational professionalism described by Evetts (2009). If the final placement is meant to be a period for student teachers to go beyond the standards and develop a heightened process of reflection and professional growth as beginning teachers, thought must be given to the way in which their transitions to different schools are organised and the kinds of support that are offered from the schools and university to support their learning in their second school placement.

To facilitate their transitions, steps could be taken to help them read their new figured worlds prior to moving to the second school placements. The hand over sessions conducted in the university at the end of T2 and before the start of T3 could be useful meetings for both former and future teacher mentors to initiate conversations about where student teachers are in their learning trajectories and provide explicit expectations about what is to come in the second school placement. Schools and teacher mentors would need to recognise and be sensitive to how student teachers may arrive at different end points in their learning trajectories by the end of first school placement.

I agree with Edwards's (2009) suggestion that there is a need think of ways to see these consequential transitions as ‘important pedagogical opportunities’ (p. 157) for student teachers and how they can be better supported as they move across different school placements. If these aspects are defined and structured, teacher educators can better support student teachers to read and navigate their new figured worlds and prepare them for future challenges as they work towards becoming professional teachers.

The findings indicated the low demands made on student teachers in using AfL but also indicated that student teachers were capable of tackling additional demands. One element

of Furlong and Maynard's (1995) study was an intervention to challenge their student teachers to reflect more critically on their teaching and pupil learning. Teacher educators or researchers could intervene and present demands at appropriate points of their learning trajectories for student teachers to work on AfL. Also, as I discussed in Chapter 3, my presence helped challenge the participants' views of AfL.

6.2.2 Training of teacher mentors

The role of teacher mentors as significant mediators of knowledge (Edwards & Protheroe, 2004) cannot be overemphasised. Three of the teacher mentors indicated the difficulty of implementing AfL in their day to day teaching, but what appeared more difficult was knowing how to support student teachers in their use and learning to implement AfL in classrooms. At the surface level, there seem to be particular, and self-perpetuating, problems in this area; as the literature informs us that teachers often lack training in assessment (Mertler, 2009; Smith, 2011) and AfL (Mansell & James, 2009; Hill et al., 2010) in pre-service training and continuing professional education. A more challenging problem for the teacher mentors was creating pedagogical opportunities (Edwards & Protheroe, 2004) to support student teachers learning and use of AfL in their teaching. Teacher mentors need to know how to provide feedback on the use of these strategies and be able to guide student teachers in using assessment to help pupils learn and inform their teaching and planning (Athanases & Achinstein, 2003). Consideration needs to be given on the provision, training and selection of teacher mentors who are knowledgeable in both AfL and AoL and are able to provide learning opportunities for student teachers to make sense of these tools in their teaching.

6.2.3 Developing as beginning teachers

Learning to use AfL involves more than using strategies in the classroom (Pedder & James, 2012). Yet, the study illustrated that the demands in schools focused on using AoL strategies which went no further than checking for pupils' understandings. The present study indicates that student teachers need to be presented with demands for them to think carefully about the purposes of these strategies and what they are meant to achieve (Coffey et al., 2011). Focusing on planning for subsequent teaching and instruction from evidence gathered in the classroom has been identified as one of the most difficult and important aspects for implementing AfL in classrooms by teachers (Heritage, 2009; Oláh et al., 2010); however, if we want student teachers to realise the potential of AfL, these aspects need to be emphasised and be part of the demands for student teachers to work on in both schools and the university.

Although this implication for practice is going beyond the data, we can begin to see what kinds of teachers these four student teachers were turning into at the end of the study. Even if Tom has emerged as a kind of fully fledged teacher, he appeared more likely to become a teacher who is organisationally oriented (Evetts, 2009). His development is in contrast to John who was occupationally oriented. For both Clare and Jane, their learning trajectories at the end of the PGCE year raises questions about their level of development and how prepared they are for their NQT year (Hobson et al., 2007). Clare indicated that one could get by from teaching with little effort; whereas Jane had only begun to develop and focus on her teaching in the second school placement. When these two teachers go into their new schools, they will not be in the same level of professional development as John or even Tom. The kinds of support for them will need to be sensitively refined by the schools when they enter the NQT year (Hobson et al., 2006).

6.2.4 Initial teacher education

The final implication relates to the importance of creating ‘common knowledge’ (Edwards, 2012, p. 23) between both the university and partnership schools as a resource that can be used to support student teachers' learning and development. According to Edwards (2012), common knowledge is made up of what matters in each practice, i.e. the motives shaping each practice. She argues that it is a resource that can be used to mediate collaboration. Important issues to be worked out in the programme at the centre of the present study include common knowledge about both AfL and AoL. There were clear inconsistencies between the meanings given to these concepts in the schools and between teacher mentors. Stronger common knowledge built between partnership schools and the university department might also ease the transitions of students, both into schools and between schools. The Oxford University Department of Education's ‘Deanery’ was set up as a way to work on different objects of activity in practices in creating common knowledge and as a collaboration tool to support the learning trajectories of student teachers (Fancourt, Edwards, & Menter, 2015).

6.3 Contributions to cultural-historical theory and research on AfL

6.3.1 Cultural-historical theory

The study built upon and tested Hedegaard's (1999, 2014) analytic heuristic (Figure 2A) which was originally devised for understanding children's learning and development. It has recently been employed to examine the learning of teachers (Chan, 2014) and student teachers (Childs et al., 2014). I have employed the analytic framing in the study to indicate how it could be used to understand how the collective practices of AfL in schools created conditions and demands for student teachers as users and learners of AfL as they learn to

teach. Although primary attention in the present study was given to what student teachers did in the activity settings of classroom teaching, the analytic heuristic provided a strong theoretical and analytical framing to illuminate the kinds of demands that arose in schools in relation to AfL. Figure 2A also brought attention to how the actions of student teachers in classroom activities were mediated by the wider set of demands and constraints to be found in organisational expectations and national policy. It offered a way of recognising how the motives that shape the practices of the schools afforded or constrained student teachers' opportunities for action in creating their SSD. For instance, a key example was how Ofsted school inspection rubrics and demands can shape AfL practices in schools (MacBeath et al., 2007), which are then mediated as feedback that teacher mentors provide to student teachers in terms of both explicit and implicit mediation (Wertsch, 2007). Hedegaard's attention to demands and motives also informed us that when student teachers move from one practice to another, conflicts in motive orientation and changes in demands can either hinder or facilitate new learning (Hedegaard, 2014).

Following the advice of Hedegaard (2012), the study followed the perspective of student teachers as they worked and experienced the demands in their activities, and saw how each of them experienced different SSD and with different consequences for their learning trajectories. The study revealed the challenges in their learning trajectories when they were at times navigating the figured world (Holland et al., 1998) of the programme and school and how little control they had over what they could do in their lessons.

Vygotsky's concept of SSD has been used to think about children's development rather than adult learning. Edwards (in press-b) has stretched Vygotsky's notion of the concept to particularly focus on the dialectic of agency and demand and I have employed the concept

in the study to analyse and understand how student teachers learn in activities located in the institutional practices of the schools. Looking at their SSD in this way foregrounded the importance of demands in practices and what student teachers brought in terms of their agency to create a SSD in which they could propel themselves forward as beginning teachers. The study indicated that student teachers need to be supported in recognising these demands in order to engage with the learning potential in the activities in which they engaged. The student teachers were not passive learners and dealt with the demands in different ways.

Examining their SSD revealed a divide between student teachers who were able to make demands on themselves and those whose agency was so suppressed by the demands placed on them that they were unable to place demands on themselves. Another key point was the importance of recognising how the calibration of demands can help them be more agentic and create a SSD. This finding has implications for the role of teacher mentors in creating learning opportunities by creating and calibrating demands. The concept of SSD allow us to think about how student teachers propel themselves forward as learners; the kinds of professionalism (Evetts, 2009) they have thought about creating for themselves; and how they worked with those features to take their learning forward.

The problem of transfer has often been examined by looking at problems faced by student teachers as they attempt to transfer learning from university to schools (Korthagen et al., 2006). By working with the idea of consequential transitions (Beach, 1999) across practices, the study has shown that this problem can also exist within an ITE programme, when student teachers move to different schools as part of their professional learning. Following students and their transitions in this way allowed the study to avoid accounts of learning to

teach which emphasises knowledge transfer, by examining instead on how learning arises from the dialectical relationship between the student teachers and the environments they are placed. In addition, following the student teachers offered a way of capturing what student teachers brought from one practice to another (Zittoun, 2014), how their learning arose from the dynamic between their new environment (Hedegaard & Edwards, 2014), how they needed to reorientate their learning trajectories (Dreier, 1999) and what they brought in terms of their agency (Edwards, 2010a).

To this end, Beach's (1999) conceptualisation of consequential transition is generative for grasping the implications on their learning trajectories as well as their identities as beginning teachers. It drew attention towards the developmental change between the student teachers and their environment and provided insights into the dialectical relationship between them and the environment. Different practices provided different demands, learning opportunities and conditions for student teachers as learners (Hedegaard, 2012). With this in mind, entering a new practice required student teachers to recognise and work with a new set of organisational motives which could be different from and even conflict with the motive orientations they developed in their first school placements (Hedegaard & Edwards, 2014).

6.3.2 Assessment for Learning

The literature to date on AfL has focused on looking on how the strategies (Black et al., 2003) are used and the effectiveness of professional development initiatives in helping teachers integrate AfL in classrooms. While there are studies on student teachers that have examined their assessment literacy and conceptions of assessment, there is still limited research that investigates how student teachers learn to use assessment to promote pupil

learning and a lack of theoretical orientation in examining how they learn to use AfL. The study has attempted to address this gap in the field of educational assessment and ITE by employing Engeström's (1990, 1999, 2007) work on artefact-mediation (Figure 2B) to analyse what student teachers were learning about AfL. In doing so, the study extends our current understandings on how AfL is used and understood.

Drawing on Engeström's (1990, 1999, 2007) typology of tools helped to indicate the type of demands that were emphasised in using AfL and the implications resulting from the lack of demands for engaging with AfL in student teachers' teaching. The study contributes some important insights into the need to engage student teachers with the 'why' of AfL in order for them to see the 'where to' of the tool in their teaching as well as their professional learning. AfL and AoL were not only tools for teaching but also tools for building and protecting the identities of student teachers. This finding contributes to Engeström's (1990) argument that such tools can have more than one possible use.

6.4 Methodological reflections, limitations and further research

6.4.1 Methodological reflections

As I have already indicated, undertaking the study in a different context and country required considerable attention to the school environments and how I presented myself. Having no involvement in the teacher education programme appeared to bring a different kind of power relationship in conducting the study (Clift & Brady, 2005) and interviews (Kvale, 2006), from undertaking it in Brunei.

My experience as a teacher educator in Brunei was, however, an advantage in working with student teachers. I sympathised with the amount work and challenges they had. More

importantly, I was able to be sensitive on how emotionally charged (Malderez, Hobson, Tracey, & Kerr, 2007) the teaching experience was for a few of them. Being attentive to what they had to say and to their challenges in schools were ways of building trust and rapport with the student teachers over time. As trust and rapport developed, student teachers became more comfortable in disclosing and sharing information as the study progressed (Crewell & Miller, 2000). Equally important was building relationships with the teacher mentors to understand the history and progress of the student teachers they worked with.

6.4.2 Limitations of the study

The primary concerns of the study were student teachers' learning trajectories as learners of AfL which over time came to include a focus on their professional learning in schools. The aim of the study has not been to point to their learning from both the university and the schools, but to examine what student teachers were learning about AfL in schools and what their use of AfL revealed about their professional learning in schools. There were time and resource limitations which made it impossible to study both elements of the PGCE programme within a DPhil studentship. Nonetheless, I acknowledge that examining what student teachers had learnt in the university about AfL and their professional learning would have been useful. By not focusing on the university, I may have missed aspects that were important but were not brought up by the student teachers.

While the study of the four cases is sufficient to answer the research questions and reveal the complexity of their learning over the two terms, the small number of cases from a secondary subject area indicates a degree of caution when developing conclusions and the implications of the study. A greater number of cases would have enabled additional per-

spectives to be gathered, allowing for more cross-case comparisons to be made with student teachers as well as the schools they were placed in. However the additional cases would present challenges in collecting data with the current design of the study.

The study drew from the perspectives of student teachers' reflections on using AfL in their teaching and expectations of AfL in schools. Although I interviewed the teacher mentors and other teachers, I did not examine how teacher mentors or teachers used AfL. In addition, although the data were gathered in geography lessons, there was no specific focus in the interviews on the distinctive nature of AfL in relation to the geography curriculum. Some focus on the particular demands of geography teaching may have provided insights to how the geography departments interpret and employ AfL (Butt, Weeden, Chubb, & Srokosz, 2006). I therefore cannot make strong claims that the teacher mentors' use of AfL is representative of the schools' and geography departments practices and expectations about AfL. However, the study was able to reveal the dominance of AoL from the demands made on the student teachers in schools.

Plans were made to interview teacher mentors at the start of T3 term but this idea was flagged as undesirable by them during the recruitment stage. Although I did conduct follow up interviews with teacher mentors after the PGCE year, I was unable to capture the initial demands that were made on student teachers teaching in the beginning of the second school placement.

I also need to acknowledge that I have developed quite intensive relationships with the four student teachers. Each of them reported that my presence had been a disruption in the sense that I encouraged them to think more about AfL than they might have done. This

kind of disruption is not unusual in qualitative studies, and my only intention was to do good rather than harm through my disruptions. Yet there is a paradox arising from their participation. Although they had thought more about AfL, they had learnt very little about AfL during the two terms. The study raises questions about what they would have learnt about using AfL if they had not taken part in the study. I can only speculate from the findings that it would not have been an aspect that they would considered and focused on heavily in schools.

6.4.3 Further research

My analyses of student teachers' transitions across different schools highlighted the potential disruption of their learning trajectories during the PGCE year and how the lateral transitions had worked for them differently. Although student teachers were asked to reflect on how they adjusted to their new settings and compare the practices and demands in both school placements, I may have missed opportunities to examine and how they initially reorientated their learning trajectories (Dreier, 1999) in order to navigate the figured worlds of their new school placements. A further study that involves collecting data on how student teachers are handed over to their new teacher mentors and what these initial expectations were, could potentially shed light on how prepared student teachers are before moving to their new school placements and the extent to which these expectations are consistent and useful in helping them read their new figured worlds. Another possible contribution arising from this initial examination of consequential transitions within an ITE programme would be further research that examines consequential transitions after student teachers have completed their second school placements to show how their learning trajectories are played out in schools as certified teachers.

Another avenue for further research might be greater attention to the interactions that student teachers have with other teachers in their placement schools. This approach would afford a stronger recognition of how student teachers work in the subject department. The culture of criticism in Sydney High and interactions with other teachers were experienced negatively by John and Jane with implications for their senses of self as well as how they positioned themselves in the school. Carrying out this study would require a research design that enables the researcher to be in schools for short but intensive periods of time (Burn, Childs, & McNicholl, 2007).

Another valuable contribution to teacher education and AfL would be an ethnographic study conducted in a school along the lines of Douglas's (2014) one year study with student teachers working in different subject departments. Such a study might capture the learning opportunities in subject departments, AfL practices and the demands for using AfL and student teachers' teaching. It would be able to reveal and compare the consistency of demands made on student teachers and how different teacher mentors mediated the demands on the student teachers.

The post-lesson interviews in the present study focused on isolated lessons that student teachers selected. Collecting data for consecutive lessons or a topic could potentially provide stronger insights into how and whether student teachers adjusted or modified their lessons for subsequent lessons. Such a study could also include a focus on how student teachers dealt with marking pupils' work. The current research design had less flexibility as it involved four different timetables and two schools in T2 and three in T3.

In their recent critique of teacher preparation research, Cochran-Smith et al. (2015) reported that there is still limited research that has attempted to examine the consequences and implications of student teachers' learning on pupil learning. Future research could focus on the impact of student teachers' learning about AfL on pupils' learning. Schools and university teacher educators could collaborate to examine the connections between student teachers' learning to use AfL and pupils' learning in schools.

Lastly, future research could include an intervention study in both schools and the university. One example is the 'The Developing English Teaching and Internship Learning' (DETAIL) project led by Ellis's (2008, 2010) in England. Framed from a CHAT lens, the study involved working with teacher mentors, the researcher, and student teachers to work with problems of professional practice and to develop a curriculum in both school and university settings. Drawing from the present study, conducting a similar intervention study with both the university and schools could potentially open up the practices and purposes for using AfL to draw attention to the dominance of AoL in schools and work on providing opportunities for student teachers to engage with AfL.

6.5 Epilogue

Conducting this study has been a long, difficult and rewarding journey and has been a very useful experience for me as a novice researcher and as a teacher educator in conducting a study outside of my comfort zone and in a very different context and country. Working closely with the student teachers over the two terms enabled me to better understand the differences among student teachers and their personal tendencies, how they engaged in activities, their struggles and how they emotionally dealt with learning to teach in schools. This experience has been beneficial to me as a teacher educator.

Without this opportunity to understand whether and how student teachers learn to use AfL, I could have easily seen learning to use AfL as a classic transfer of learning problem. Instead I have developed insights into how student teachers learn to use AfL as a pedagogical tool within and across practices. I began my research journey through conducting a pilot study in England, surprised that student teachers did not have to use AfL regularly in their lessons.

A cultural-historical lens has helped me make sense of the process of learning to teach in schools as well as how student teachers were making sense of AfL as a pedagogical tool. By taking a closer look at the learning dialectics and opportunities student teachers were able to take advantage of, I learnt a new appreciation for the importance of the relationships between institutional demands and the agency of the learner as she or he learnt to teach in schools. I am more aware of how student teachers are able to act in activities in schools as well as the challenges they face in navigating school demands.

I had decided to conduct the study in England rather than Brunei, hoping to understand more about AfL and how student teachers learn to use AfL in a context where AfL is better understood in comparison to Brunei. As a teacher educator, I learnt that there is still great ambiguity surrounding AfL, despite the massive amount of research and development work that has been conducted in relation to the tool. It is challenging to support student teachers' learning of the tool when the uses and purposes are inconsistent and easily interpreted to mean AoL. When AfL is reduced to 'how' strategies and there is a lack of engagement with the potential of the tool, student teachers will just take for granted that they are actually using AfL to help pupils to learn when they are not.

Would the findings be any different if the study was conducted in Brunei? I would not be surprised if the findings will be similar as there is still great ambiguity surrounding AfL in the country. It may be even more difficult for student teachers and teachers to begin learning to use AfL in their teaching within expectations from a society which has a long tradition of examinations. My personal experience growing up in Brunei is that the education system is little different from Confucian-heritage societies (China and Hong Kong) where the introduction of AfL in the national education system remains challenging (Berry, 2011; Carless, 2007).

The research process has informed me about ways in which student teachers can be better supported in schools in not only their learning to use AfL but also their other learning in schools. The Masters of Teaching programme in Brunei has a similar structure to the PGCE programme in England. Student teachers will be teaching in two main school placements, yet the transitions they make are hardly recognised as a significant point in their learning trajectories in developing and becoming professional teachers. This would be an area of interest to study which I would like to take forward from the thesis.

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Appendix 1 - Approved ethics application



University of Oxford

CENTRAL UNIVERSITY RESEARCH ETHICS COMMITTEE (CUREC)

CUREC/1A Checklist for the Social Sciences and Humanities

The University of Oxford places a high value on the knowledge, expertise, and integrity of its members and their ability to conduct research to high standards of scholarship and ethics. The research ethics clearance procedures have been established to ensure that the University is meeting its obligations as a responsible institution. They start from the presumption that all members of the University will take their responsibilities and obligations seriously and will ensure that their research on human subjects is conducted according to the established principles and good practice in their fields and in accordance, where appropriate, with legal requirements. Since the requirements of research ethics review will vary from field to field and from project to project, the University accepts that different guidelines and procedures will be appropriate. Please check the CUREC website to ensure that you have the correct form for your project.

This form does not cover research governance, satisfactory methodology, compliance with the requirements of publishers when administering their tests or questionnaires, or the health and safety of employees and students. As principal investigator, it is your responsibility to ensure that requirements in these areas are met. Please carry out a risk assessment of the project, in consultation with all researchers involved, using the checklist and CUREC's other documentation.

The use of an asterisk in this form indicates a phrase defined in the glossary. The glossary and further information on the University's research ethics procedures are available from the CUREC website:

www.admin.ox.ac.uk/curec

This form is designed largely for research that falls within the Divisions of Social Sciences and Humanities and which does not involve a high-level of risk to the subjects. Elite interviews, field work and oral history are included in the CUREC process. Please take a moment to read through it and if you have any questions or doubts as to whether it is the appropriate form, please review Section A or consult the CUREC website.

Note on anonymised data and audit: you do not need to obtain ethical approval for your study if:

you are using previously collected anonymised data about people which neither you nor anyone else involved in your study can trace back to the individuals who provided them (e.g. census data, administrative data, secondary analysis). Please refer to the definition of *personal data in the glossary and FAQ no. 6 for further guidance; or

you are conducting research on behalf of or at the request of a service provider that matches the definition of *audit in the glossary.

If your research is audit or uses prior-anonymised data, please check this box:

You do not need to seek ethical approval from CUREC, and you do not need to complete any more of this form. However, please check with your department's requirements, as some departments require you to lodge this form with them.

Office use only: IDREC Ref. No. _____

Date of confirmation that checklist accepted on behalf of IDREC: // //

SECTION A	Yes	No
1) Are you using research methodologies commonly used in biomedical or behavioural laboratory sciences?		✔
2) Is there a significant risk that the research will induce anxiety, stress or other harmful psychological states in participants that might persist beyond the duration of any test or interview in which they are participating?		✔
3) Will the research involve human participants recruited by means of their status as present or past NHS patients or their relatives or carers or present or past NHS staff, or will the research, in whole or in part, be carried out on NHS premises, use NHS facilities or assess NHS facilities or services?		✔
*4) Does the research involve *human participants aged 16 and over who do not have *capacity to consent for themselves? See the Mental Capacity Act 2005*		✔
5) Is the study to be funded by the US National Institutes of Health or another US federal funding agency?		✔

If you answered 'yes', please stop work on this checklist and
for questions 1 and 2, complete CUREC/1 instead (available from www.admin.ox.ac.uk/curec);
for questions 3 and 4, submit your proposal to the appropriate NHS ethics committee (see www.nres.npsa.nhs.uk and www.admin.ox.ac.uk/rso/clinical for further information);
for question 5, or if you answered 'yes' to questions 1, 2 or 4 and your research will take place outside the EU, submit your proposal to OXTREC, which uses separate documentation (www.tropicalmedicine.ox.ac.uk/oxtrec).
If you have answered 'no' to all questions in Section A, please complete Sections B-E. This form and any supporting materials should be typewritten.

SECTION B

**Principal investigator/ supervisor/student researcher (title and name):*	*MR DESMOND TAN CHIA CHUN*
Name of supervisor (STUDENT RESEARCH PROJECTS ONLY):	*PROF. ANNE EDWARDS AND DR ROGER FIRTH*
Degree programme, e.g. DPhil, MPhil, MSc (STUDENT RESEARCH PROJECTS ONLY):	*DPHIL*
Department or institute:	*EDUCATION*
Address for correspondence (if different):	*ST CROSS COLLEGE, OX1 3LZ*
Email and phone contact:	*desmond.tan@education.ox.ac.uk* / 07428162460
Title of research project:	*Secondary geography student teachers learning to use Assessment for Learning in Schools.*
Brief description of research methods and goals plus description of the nature of participants (including the criteria for inclusion/exclusion, method of recruitment), explanation of how professional guidelines and/or CUREC protocol(s) will be applied (if relevant) and expected use to which the results/data will be put. Please describe how you will obtain informed consent. Approx 400 words.	

Aims of Research (Pilot Study)

The main aim of the research is to explore on how secondary geography interns (PGCE student teachers) in Oxford learn to use Assessment for Learning (AfL) during their teaching in their placement schools. In particular, what do the interns see as the purpose of AfL during their teaching and how do they negotiate with AfL practices in the school.

Research Methods and Design

The research adopts a qualitative approach and will involve two secondary geography interns who are completing their PGCE course at the University of Oxford and their teacher mentors in a PGCE secondary partnership school in Oxford. The main aim of the pilot study is to explore how the interns learn to use (AfL) during their school placements. Data collection will involve interviews with the interns and their teacher mentors. Interns will also be observed during their teaching in classrooms. Prior to the interns teaching, pre-lesson interviews will be used to investigate their intended actions of AfL. After the lesson, post lesson interviews in the form of stimulated recall will be conducted to elicit interns' actions in the classroom. The stimulus used for the interview may be related to their teaching, assessment activities, questions used, feedback given and interactions with pupils. Analysis of relevant written artefacts by pupils may be used by the researcher during interviews. The purpose of using written artefacts such as handouts or classroom worksheets is to facilitate stimulated recall interviews with the interns. The focus is to elicit information of what was done in the classroom by the interns and not for records of individual pupils. The interns will be instructed that written artefacts will need to be made anonymous or coded before the researcher can use it as stimulus. For instance, photocopying a copy and removing the pupils name. During Mentor and Mentee feedback sessions, their conversations will be audio recorded with the researcher's digital recorder. The interns will audio record the sessions and return the digital recorder to the researcher after each session.

Sampling and Protocols

Participation of this research is voluntary should the school, interns and teacher mentors gives permission to conduct the study. The sampling of the nominated school in which the research will be conducted is opportunistic and convenience. The researcher and supervisor have visited the school a few times. A research summary outlining the background of the study and how data will be collected will be sent to the head teacher, interns and teacher mentors. They will each receive a research plan detailing the essential information and necessary participation required . Formal informed consent and approval will be obtained from the head teacher, interns and teacher mentors. The research falls under Group A activities and does not alter pupils classroom experience and the main participants of the study are the interns. To protect the participants (including the teacher mentors) of the study, the following steps will be taken. Participants will be informed that they can choose to opt out at any stage without educational risk. They will be assured that the audio recordings and other relevant materials will be kept strictly confidential. None of the subjects are to be identified in the audio recordings and data collection. No authorized access to data will be permitted to non participants of the research and data collected will be used only for the purpose of this research. In any written reports or publications arising from the research, identities of the participants , samples of written artefacts and their schools will be concealed or coded. The schools and participants will be informed that a brief report of the study can be made available upon request. There will be no financial awards given to the participants and schools who are willing to take part in the study. I also attach a statement from the Police Head Quarters from Brunei Darussalam and my passport for the committee's perusal. The researcher also has an Enhanced CRB Disclosure Certificate (001354604435) from 22nd February 2012 which will be photocopied and given to the head of the school.

SECTION C
Methods to be used in the study (tick as many as apply: this information will help the committee understand the nature of your research and may be used for audit).

	Please tick
Interview	✔
Questionnaire	
Analysis of existing records	
Participant performs verbal/paper and pencil/computer based task	
Measurement/recording of motor behaviour	
Audio recording of participant	✔
Video recording or photography of participant	
Physiological recording from participant	
Participant observation	
Covert observation	
Systematic observation	
Observation of specific organisational practices	✔
Other (please specify)	

SECTION D
Have you read one or more of the following professional guidelines and do you undertake to use the principles listed there as a guide for your own work? Please note that this is not intended to be an exhaustive list. Links to the guidelines listed below are included on the CUREC website.

	Please tick
British Society of Criminology: Code of Ethics for Researchers in the Field of Criminology [www.britsoccrim.org/codeofethics.htm]	
British Educational Research Association Ethical Guidelines for Educational Research [www.bera.ac.uk/publications/guidelines/]	✔
Academy of Management's Code of Ethics [www.aomonline.org]	
Association of American Geographers Statement on Professional Ethics [http://www.aag.org/cs/about_aag/resolutions/statement_on_professional_ethics_]	
Oral History Society of the UK Ethical Guidelines [www.oralhistory.org.uk/ethics/index.php]	
American Political Science Association (APSA) Guide to Professional Ethics in Political Science (Section H) [www.apsanet.org/content_9350.cfm]	
British Psychological Society Code of Ethics and Conduct [www.bps.org.uk/the-society/code-of-conduct/code-of-conduct_home.cfm]	
Ethics Guidelines of the Association of Social Anthropologists of the UK and Commonwealth [www.theasa.org/ethics/guidelines.shtml]	
Social Research Association: Ethical Guidelines [www.the-sra.org.uk/guidelines.htm]	
Statement of Principles of Ethical Research Practice from the Socio-Legal Studies Association [http://www.slsa.ac.uk/content/view/247/270/]	
Statement of Ethical Practice for the British Sociological Association [www.britsoc.co.uk/equality/Statement+Ethical+Practice.htm]	
Other professional guidelines (please specify):	

SECTION E

Please put a tick in the yes/no column as appropriate to indicate your response.

1) Will you obtain informed consent according to good practice in your discipline before participation?	**Yes**	**No**
	✔	
2) Will you ensure that *personal data collected directly from participants or via a *third party is held and processed in accordance with the provisions of the Data Protection Act?	**Yes**	**No**
	✔	
3) Does the research involve as participants *people whose ability to give free and informed consent is in question? (This includes those under 18 and vulnerable adults.)	**Yes**	**No**
		✔
4) As a consequence of taking part in the research, will participants be at serious risk of rendering themselves liable to criminal prosecution (e.g. by providing information on drug abuse or child abuse)?	**Yes**	**No**
		✔
5) Does the research involve the *deception of participants, as part of the investigation/experiment?	**Yes**	**No**
		✔
If any of your answers above are in a shaded box, please indicate whether those aspects of your project are fully covered by the following.		
6) Research protocol(s) which has/ve received IDREC/CUREC approval?	**Yes**	**No**
If yes, please give protocol number(s): SSD/IDREC/2009/P15.1	✔	
7) Professional guidelines that you will be following, as noted under Section D?	**Yes**	**No**
	✔	

If any of your answers in Section E are in a shaded box and are not covered by a protocol or by professional guidelines, please complete CUREC/2, available to download from the CUREC web-site. Then submit both this form (you need not complete section F) and the CUREC/2 to the Social Sciences and Humanities IDREC.

If all your answers in Section E are in the unshaded boxes or your answers in shaded boxes are covered by a protocol or professional guidelines, complete Section F and submit this form and any accompanying documents to the Social Sciences and Humanities IDREC or to the relevant officer/ committee at departmental level (see notes and address below).

FINAL CHECK

Please check each of the following before submitting the checklist. Failure to provide this information could delay the start of your research.

Have you completed Sections A-E? ✓

Have you defined all technical terms and abbreviations used? ✓

Have you included all supporting documentation that you will be using, including – as appropriate – questionnaires and participant information, consent forms/form or note of procedure for recording oral consent, advertisements and surveys to be used? ✓

Are all pages (including appendices and attachments) numbered? ✓

SECTION F

You can submit this checklist by email and/or as a signed hard copy; if it is being sent by email only, the checklist, and any email from the head of department or nominee separately endorsing its submission, must be sent from a University of Oxford email address (i.e. as a minimum, the checklist and supporting documents must be submitted by the head of department or nominee indicating his/her approval from a University of Oxford email account).

Complete this section only if you do not need to submit form CUREC/2.

I understand my responsibilities as principal researcher/supervisor/student researcher as outlined in the CUREC glossary and guidance on the CUREC website.

I declare that the answers above accurately describe my research as presently designed and that I will submit a new checklist should the design of my research change in a way which would alter any of the above responses so as to require completion of CUREC/2 (involving full scrutiny by an IDREC). I will inform the relevant IDREC if I cease to be the principal researcher on this project and supply the name and contact details of my successor if appropriate.

Signed by principal researcher/supervisor/student researcher:…… ……
Date:…24/4/2012……
Print name (block capitals) DESMOND TAN CHIA CHUN
Signed by supervisor:……(for student projects)
Date:……
Print name (block capitals)_____

I understand the questions and answers that have been entered above describing the research, and I will ensure that my practice in this research complies with these answers, subject to any modifications made by the principal researcher properly authorised by the CUREC system.
Signed by associate/other researcher: …….
Print name (block capitals)……
Date ……

I have read the research project application named above. On the basis of the information available to me, I:
(i) consider the principal researcher/supervisor/student researcher to be aware of her/his ethical responsibilities in regard to this research;
(ii) consider that any ethical issues raised have been satisfactorily resolved or are covered by relevant professional guidelines and/or CUREC approved protocols, and that it is appropriate for the research to proceed without further formal ethical scrutiny at this stage (noting the principal researcher's obligation to report should the design of the research change in a way which would alter any of the above responses so as to require completion of a CUREC/2 full application);
(iii) am satisfied that the proposed project has been/will be subject to appropriate *peer review and is likely to contribute something useful to existing knowledge and/or to the education and training of the researcher(s) and that it is in the *public interest.
(iv) [FOR DEPARTMENTS/FACULTIES WITH A DEPARTMENTAL RESEARCH ETHICS COMMITTEE (DREC) OR EQUIVALENT BODY - PLEASE DELETE IF NOT APPLICABLE] confirm that this checklist (and associated research outline) has been reviewed by the Department's Research Ethics Committee (DREC)/equivalent body, and attach the associated report from that body.

Signed:……..
(Head of department or nominee e.g Chair of DREC, Director of Graduate Studies for postgraduate student projects)
Print name (block capitals)……
Date:……
Please check with your department about its procedures for the approval of CUREC forms. If your department indicates that the checklist should be submitted directly to the IDREC, please send it, together with any supporting documentation, to the following address(es), keeping a copy for yourself:
Secretary of the Social Sciences and Humanities IDREC Email: ethics@socsci.ox.ac.uk
University of Oxford Social Sciences Division
Hayes House, George Street
Oxford, OX1 2BQ
IDRECs and/or CUREC will review a sample of completed checklists and may ask for further details of any project.

Appendix 2 - Interview schedule for teacher mentors

Institutional Practices on AfL

1. What is the school's policy with regards to AfL?

2. How do teachers in the school work with the policy?

3. What do teachers see as the purposes of AfL?

4. Can you give me some examples of what AfL looks like in practice in the school?

5. In terms of priorities, where does the school put AfL in the school policy?

6. What kinds of support do the teachers get to improve or learn more about AfL?

7. What does the school do if teachers are not doing very well in AfL?

8. What are the expectations on interns in relation to AfL during their placement?

Subject Department Practices on AfL

9. How does the geography department view the policy in AfL?

10. What does AfL look in practice in teaching secondary geography?

11. Can you give me some examples?

12. What are the purposes of AfL in teaching secondary geography?

Mentors' purposes and expectations

13. What do you see as the main purposes of AfL in your own teaching?

14. What expectations do you have on your interns in relation to AfL?

15. What kinds of support do the interns get to improve or learn more about AfL?

Appendix 3 - Interview schedule for professional tutors and deputy heads

Institutional Practices on AfL

1. What is the school's policy with regards to AfL?

2. How do teachers in the school work with the policy?

3. What do teachers see as the purposes of AfL?

4. Can you give me some examples of what AfL looks like in practice in the school?

5. In terms of priorities, where does the school put AfL in the school policy?

6. What kinds of support do the teachers get to improve or learn more about AfL?

7. What does the school do if teachers are not doing very well in AfL?

8. What are the expectations on interns in relation to AfL during their placement?

PT'S and DH's purposes and expectations

9. What do you see as the main purposes of AfL in your own teaching?

10. What expectations do you have on your interns in relation to AfL?

11. What kinds of support do the interns get to improve or learn more about AfL?

Appendix 4 - Interview schedule for student teachers (start of T2)

Background

1. What made you decide to become a secondary geography teacher?

2. What are you trying to do when teaching geography?

- What do you see as important

3. What do you consider as good secondary geography teaching?

- Can you give me an example?

4. How do you think pupils learn best in secondary geography?

- Can you give me an example?

Institutional practices of AfL in the school and expectations on the interns

1. In your current school, what do you think your school sees as the purpose of AfL?

2. What about your department?

3. What about your teacher mentor?

4. What expectations does the school hold for you as an intern in using AfL in your teaching?

5. What about your teacher mentor?

6. What are your current interactions on AfL with your current mentor?

7. Is there anybody else whom you talk to to discuss about AfL in your school?

Appendix 5 - Interview schedule for student teachers (end of T2)

What do student teachers see as the purpose of AfL in teaching secondary geography?

1. In our previous conversation, you mentioned that you saw the purpose of AfL as [....], has this purpose changed in any way?

- Currently in your teaching, what do you see as the purpose of it it now?

- Could you describe and explain a lesson reflecting this purpose?

2. In our previous conversation, you mentioned that you saw the purpose of AfL in teaching secondary geography as [...], has this purpose changed in anyway?

- Could you describe and explain a lesson in which you have used AfL in teaching?

How do student teachers negotiate the purposes and practices of AfL in schools?

3. In our previous conversation, you mentioned that you started implementing AfL in your teaching because of [...], has this motivation remained the same for you? Do you have any new reasons or motivations for implementing AfL in your teaching?

- Could you tell me in detail on these change/s and what has caused this change/s?

4. In our previous conversation, you mentioned that you did not use/use AfL regularly/ irregularly in your teaching, has this changed in any way?

- Could you tell me in detail on these change/s and what has caused this change/s?

5. During the course of this term, could you tell me in detail about the kinds of things you have done to learn more about AfL and implement AfL in your teaching?

6. How did you go about in finding these information?

7. Are these information available in your school?

8. Was there anything else which has been helpful to you along the way to help you implement AfL in your teaching?

9. What are some of the things that you believe have stood in your way in implementing AfL in your teaching?

10. What do you think could have helped you in making more progress along the way?

Appendix 6 - Student teachers' consent form

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DEPARTMENT OF EDUCATION
15 Norham Gardens, Oxford, OX2 6PY
Tel: +44(0) 1865 274024 Fax: +44(0)1865 274027
general.enquiries@education.ox.ac.uk
www.education.ox.ac.uk

Director Professor Anne Edwards

Informed Consent Form - Student Teachers

I volunteer to participate in a research project by Desmond Tan from the University of Oxford. I understand that the project is designed to gather information about student teachers learning to use Assessment for Learning in schools. I will be one of the two student teachers being interviewed and observed in the classroom for this pilot study.

Consent for Participation in Interview Research and Classroom Observation

1. My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty. If I decline to participate or withdraw from the study, there will be no educational risks involved.

2. If I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.

3. Participation involves being interviewed by the researcher. The interview will last approximately 1 hour. Notes will be written during the interview. A digital recorder will be used to record the interview. If I do not want to be recorded, I will not be able to participate in the study.

4. I understand that the researcher will be observing my lessons and will conduct pre lesson and post lesson interviews.

5. I understand that should the researcher needs written artefacts such as pupils work, I will conceal the identity of the pupils work before handing it to the researcher.

6. Faculty and administrators from the Department of Education will neither be present at the interview nor have access to raw notes or transcripts. This precaution will prevent my individual comments from having any negative repercussions.

7. I understand that the researcher will not identify me by name in any reports using information obtained from the interviews, and that my confidentiality as a participant in this study will remain secure.

8. I understand that this research study has been reviewed and approved by the CUREC (Central University Research Ethics Committee) in the University of Oxford. For research problems or questions pertaining to the study, the CUREC may be contacted through [curec@admin.ox.ac.uk]

9. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

10. I have been given a copy of this consent form.

My Signature	Date
My Printed Name	Signature of the Researcher

For Further information, please contact:

Desmond Tan
DPhil Student
University of Oxford
Department of Education
Desmond.tan@stx.ox.ac.uk

Appendix 7 - Contact summary sheet

Contact Type	**Contact Date:28/2 /2013**
Observation / Interview	**Time: 11:00**
Number: 3	**Site: Sydney High**
Student Teacher / Mentor / Tutor - TOM	**Written by: Desmond**

1. **What were the main issues and themes that struck you with this contact?**
AfL seen as a way of gauging and checking pupils understanding and knowledge
Strong physical geography background

2. **Summarise the information you got (or failed to get) on each of the target questions you had for this contact?**
- School Expectations : High on AfL and key aspect of school policy
- Good geography teaching : Enthusiasm for the subject
- Pupil learning in geography: Applying theories in geographical theory (relating around us such as plate tectonics)
- Ways of using AfL in his teaching:
A) Traffic Lights (Lesser Extent) - how much of the subject you know
B) Exit Cards (Lesser Extent)
C) Diagrams (Large Extent)
D) Circulating (Large Extent)
E) Questioning (Large Extent)
F) Info Sheets (Large Extent)
G) Feedback (Large Extent)
- Interactions with Mentor: Building AfL to Lesson Plan (Checked before lessons), incorporate to every lesson, Mentor asks "How will you check their learning". Lesson plan given in advance not necessarily AfL but more about ideas.
- Learning AfL in school: Have not really used books. Mostly discussions with mentor and other teachers. Aware that there are resources such as the powerpoint with plenary stuff.
- Meanings of AfL: Good Teaching, Any form of questioning and circulating is part of AfL, checking if pupils know what they have learnt, gauge level of understanding. "Anytime you are checking on what they have learnt that is AfL"
- Why use AfL: "For teacher to know what the kids know and for pupils to recognise what they know"
- Purpose: Helps you understand and find out if they have learnt something from your lesson. If pupils can describe back to you , it shows that they have understood your lesson (1509)
- Contested concept: (1208) Broad Concept , Weird Concept
- Different Classes: thinking and planning of AfL no less different
- Other interactions with AfL: Not with other student teachers but on mentors and tutors

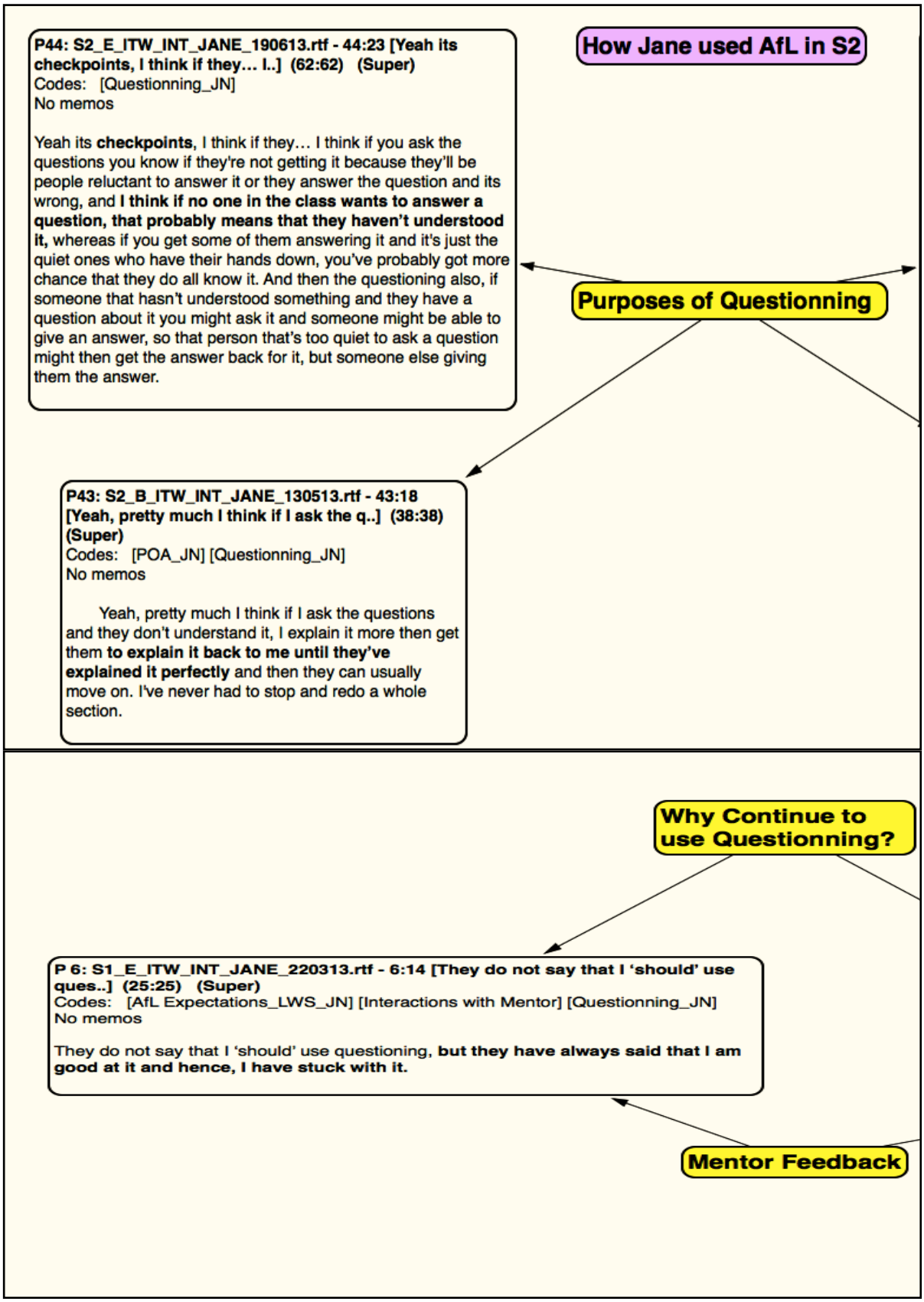
3. Failed to get Questions: How his use of AfL reflects how he sees pupils learning and teaching of secondary geography.
Other questions for end of term interviews
1. You have mentioned that it is important to build in activities for your AfL. Normally you would start of with lesson objectives and build on to activities. How do you decide where to put AfL in your teaching?
2. From our conversations, these are the strategies of implementing AfL in your lesson. I was wondering if we can talk about these and if you could provide me the purposes of using these AfL. Has your thinking about these strategies changed in anyway and in what ways?
3. I think you have mentioned that there are many ways of using AfL as well and you also have mentioned that it is important from what you found out from using these strategies. I was wondering if you could comment on in what ways AfL and if there are types of AfL, you have found useful in your teaching?
4. I know that you have learnt about AfL in both in the university and school. Do you think it is possible to seperate on what you have learnt from the school and university? Are there aspects which are more useful or which you found more useful in your learning?

Appendix 8 - Structural code sample

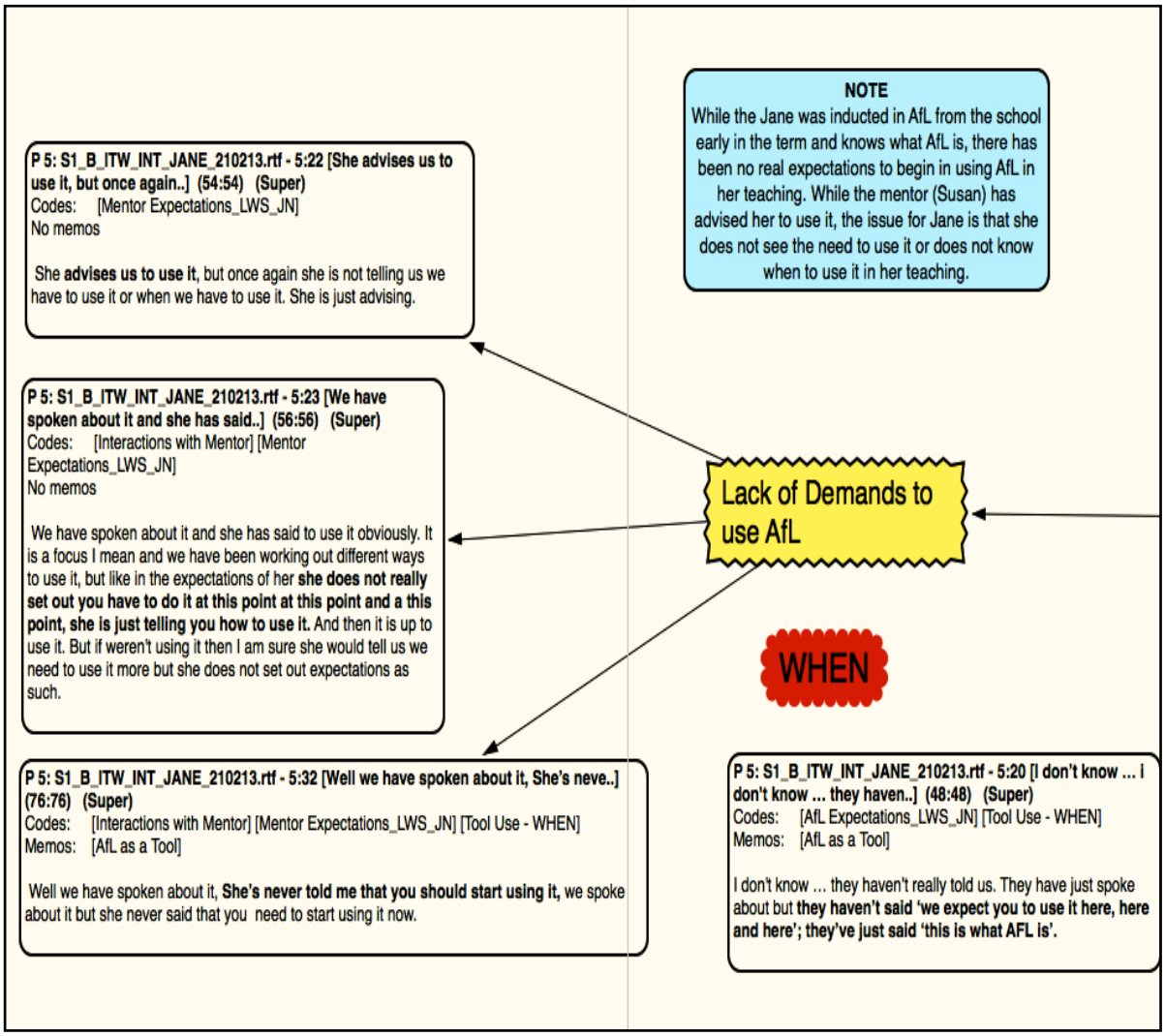
Structural Code: In what ways did they use AfL to help pupils to learn (January to March 2013)

John	Clare	Tom
A lesson where I've involved this is they sort of do peer assessments. They had to do a story board of the events so we'd learn about elephant hunting in Chobe, which is in Botswana, it's legalized elephant hunting, and they had learnt about it through a card sort, then we had a little chat about it, a question and answer session and then they had to draw a story board summing up the issue. So they drew the 6 things that went on, and they swapped them with a friend who did a what went well, so they wrote a point about what was good about it, so lots of information is really accurate, and then they put an EBI which is even better if. So they are reflecting on their friend's work, seeing what would be a good piece of work, then they get theirs' back, they look at the EBI, so this would have been even better if you included more information with your drawings, or you'd written about this bit of the elephant hunting, and then they have to go and improve on that so that's just a way of peer assessment but you could do that with your own work. If you are doing an exam question, you could do it, and then you give them the marks, which maybe you have broken down for them.They can go look at that and thought I'd have got 3 marks, how can I improve that to get 6 marks. p.8	I think the purpose is to … just … helps progress student's learning, they can see themselves how they are doing which enables them to focus on how they can improve should they want to. p.10 I think it is put into lessons in tiny ways. So you ask them a question and then you ask them why they thought that. Or you do a recap half way through, maybe a quiz half way through the lesson and see if they know the answers. This way they know if they had been listening or not. It's kind of letting them know what they can do to improve by showing examples of work. Yeap … I think it is just mini stages through the lesson. p.10	It doesn't really help them to learn, because that's what the main activities of the lesson are doing, that's the content that they're learning. The AFL bit is you understanding what they've learnt, and them also understanding that they have learnt what the material in the activity was. So the activity, the task of the lesson is getting some information, processing the information, and the AFL bit is checking that they've processed that information well enough and explain things well enough and giving to them so they understand that they have learnt as well … yea … AFL is an on-going process rather than specific intervals within a lesson. p.11

Appendix 9 - Concept map sample (extracted part #1 from main)



Appendix 10 - Concept map sample (extracted part #2 from main)



Appendix 11 - Analytic memo sample

MEMO: S1 - Clare (Super, 2013-09-04 14:26:37)
Type: Memo
First interview with Clare
PGCE FOCUS
It appears that AfL was not really a focus for Clare to start with. She had other things she wanted to focus on. It also appears that her motivation to use and learn AfL is not something which is of concern to her during this interview. She talks about this not bothering to attend CPD and even interacting with other interns. Maybe all interns do not really talk about AfL much?
Motivation to Learn more about AfL
10/09/2013 09:59:58
PASSING THE PGCE
It is worth looking at this code and quotations because it clearly shows that Clare was in conflict on the suggestions and feedback made by the individuals assessing her. While she is told to include plenaries from her mentor, she does not actually see it much in practice and is not sure how purposeful it is in her teaching when other teachers are not using it. It indicates that she is not blind about it and can be critical. Jane also talks about this in my interviews, not seeing others using AfL.
In Clare's case, she is more concern about getting through the course and passing the whole programme rather than trying to start an argument or negotiating why she has to do all the things that has been told to her.
28/11/2013 17:03:52
Already using AfL before she knew it

Clare is always keen on using questionning in her teaching and getting the pupils to expand on their answer. She suggests that she has been doing this for awhile before AfL has been introduced to her. When she came to the departmental session on AfL, she did not realise she has been doing AfL all along. What she did learn in the department was something I did not explore. But what she had learnt in the department must have confirmed her ideas about what AfL was and somehow corrected the idea that "yes" she has been doing AfL all along.
03/12/2013 13:04:53

Not told on the purposes of using AfL
She came to the school it seems not to be told on the purposes of using AfL. What appears to have happened is she being fed the strategies of AfL but not told on the purposes of using AfL in her teaching. Without knowing the purposes of using AfL, she appears to be carrying out or following the advice of her mentor.
03/12/2013 13:06:22

Although Clare claims that she does not know much about AfL and where to include it. She does demonstrate that she knows when and where to use peer marking in her teaching.
28/11/2013 14:57:16

This is a very difficult case study to write. First she does not show a lot of motivation in learning to use AfL in her teaching and secondly she had a lot of things to work on while in S1. Looking at the demands in using AfL, I notice a couple of things.

One, there is not a lot of demands in using AfL to begin with.
Secondly, Clare had to work on other aspects of her teaching. These included using plenaries and questionning.
Thirdly, She felt pressured in school with all the demands she had in using AfL in her teaching.
Fourthly, She disagreed to a large extent to what she was told to do especially in using plenaries because people or other teachers did not use it.
Fifth, Being judged by Ofsted standards at such an early stage indicates a lot of pressure for her because she had to deliver the perfect lesson.
Sixth, She did not really take on the whole purpose of some of the things but did things to ensure that she pleases people.
07/02/2014 16:42:47

But what was happening with Clare is, she'd plan a plenary, and she'd never deliver it, she'd never get them to do it because she was either running out of time or she'd forgot or she think she's finished and she wasn't. And in terms of, with an Ofsted hat on you know, I think that has to happen in the lesson, either in the middle of the lesson, end or somewhere where you think "right, are these students understanding what's going on here", and so I try to get her to think of a variety of ways that she could do that.
Clare seems to have been judged or assessed through an Ofsted Hat.
07/02/2014 17:30:36
Demands in using AfL for Clare

Earlier on the description, I have indicated what was expected from Mary on Clare in her teaching and the demands in using AfL. Data from Clare seemed to confirmed these expectations and there is indeed less focus on AfL. To begin with, Clare had suggested that there was hardly any discussions on AfL midway teaching in S1. It is possible that such discussions have not occured because Mary wanted to Clare to focus on a number of things before implementing AfL in her practice. The demands from Mary depends on what she felt Clare needed to improve or perform. For example,

"It depends on what you are doing worst at, at the time. So if AfL was not that great but if something was worse, you would be focusing on the worst thing other than AfL."

……