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OPPORTUNITIES FOR ALL LEARNERS TO ACHIEVE THEIR POTENTIAL: AN INVESTIGATION INTO THE EFFECTS OF LEARNING TALK IN THE SECONDARY SCHOOL CLASSROOM

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A thesis in partial fulfilment of the
requirements of Anglia Ruskin University
for the degree of Doctor of Philosophy

This research programme was carried out
at Anglia Ruskin University

Submitted: March 2014

Acknowledgements

I am indebted to Brian, my husband, for his consistent and unconditional support, and grateful thanks go to my supervisory team, Jaki Lilly and Brian White.

ANGLIA RUSKIN UNIVERSITY

ABSTRACT

FACULTY OF EDUCATION

DOCTOR OF PHILOSOPHY

OPPORTUNITIES FOR ALL LEARNERS TO ACHIEVE THEIR POTENTIAL: AN INVESTIGATION INTO THE EFFECTS OF LEARNING TALK IN THE SECONDARY SCHOOL CLASSROOM

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March 2014

A major challenge to contemporary education is to meet the Government's directive, depicted in OFSTED guidelines and the Department for Education's Teacher Standards that all our learners make progress, are autonomous and are able to engage in independent learning. However they offer no guidance as to how this can be achieved. The research has built on earlier theories to close the gap between Government measurements of the quality of teaching and twenty-first century educational theories, with particular focus on learning talk.

The primary intention of this research was to determine the impact that dynamically dialogic learning conversations, that is learning talk, have on deepening learning, and how they may be used to enable teachers to meet OFSTED's requirement for *all* students to make progress.

The data for this case study was collected through a process of lesson observations, interviews and focus-group discussions over a period of one year. Sixteen lessons were video-recorded for a variety of topics and the recordings were analysed in depth against established theories of learning and the complex patterns and relationships between the different types of student and teacher learning talk observed in the classroom. The outcome of the analysis is a set of observable characteristics of learning talk which form an Observation Database.

The findings support the premise that learning talk in the classroom leads to deeper learning. The Observation Database contains of a set of tools for observing, evaluating and enabling learning talk in the classroom and therefore offers teachers the opportunity to demonstrate OFSTED criteria. The process of developing the Observation Database and the tools developed have been shared both locally and nationally to heighten awareness of learning talk in the classroom and its link to deeper learning.

Key words: dialogic; learning talk; learning to learn

CONTENTS

OPPORTUNITIES FOR ALL LEARNERS TO ACHIEVE THEIR POTENTIAL: AN INVESTIGATION INTO THE EFFECTS OF LEARNING TALK IN THE SECONDARY SCHOOL CLASSROOM

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Chapter 1: Introduction to this research project

This research took place as a direct result of Government initiatives introduced into schools in 2004, in order to improve personalised learning approaches. The necessity to have a measure by which to assess teacher effectiveness also led to the revision of OFSTED (The Office for Standards in Education) criteria and the development of renewed Teacher Standards. The primary intention of this research work is to identify and analyse those strategies used by secondary school teachers in the classroom which allow students to engage dynamically in dialogic learning conversations thereby enabling teachers to meet OFSTED's requirement for *all* students to make progress.

The research questions addressed in this thesis are as follows:

1. To what extent is it possible to enable classroom teachers to demonstrate specific OFSTED criteria and satisfy the Government's regulated Teacher Standards?

2. In what ways might a teacher influence the nature of learning talk in the classroom?

3. How might it be possible to create effective, robust methods for evaluating and measuring learning talk?

Learning talk is defined, for the purposes of this research, as being those interactions between students and teachers which enable students to use higher order thinking skills and to engage in deeper learning opportunities. This definition is based on, and developed from, existing research and presents a concept which, while valued by many academics, is not universally present in observed classroom practice as this research will show.

My research methodology adopted a case-study approach, collecting data from video-recorded lesson observations, interviews with four teachers, and focus-group discussions with both teacher and student research cohorts. An Observation Database was designed and developed throughout the research process, supporting both the observation and analysis processes. This is explained in greater detail in chapter 3.

The decision to choose a case-study methodology based within my own school had both advantages and disadvantages, which are discussed in chapter 4, in particular those issues

related to the nature of participant observation and the relationship between researcher and participant.

The changing context of the research school during the period of the data collection and analysis inevitably had an impact upon the research journey. The main developments within the school were with regard to a changing student curriculum, and the physical movement of teachers and students into an entirely new building. Two additional aspects were particularly important to this case being studied and as such merit inclusion in the thesis. The first of these examples concerns the previous implementation within the school of a 'Learning to Learn' package which was taught as a discrete subject to all students. This strategy had a clear impact in terms of the value placed upon the concept of 'learning how to learn' by both teachers and students, and it thus proved important to take this into account when choosing the research cohorts. Those teachers who had been involved in the delivery of the Learning to Learn programme had received training in terms of both content and teaching approaches. Secondly, the entire teaching staff was involved in a teacher-training programme throughout the year, designed to improve student interaction and encourage creative teaching methods. This training programme formed an important element of the research design and ensured the direct involvement of the teaching cohort in this research through the medium of focus-group discussions.

This thesis makes a direct contribution to both theoretical knowledge and pedagogical practices in a number of ways. It combines the provision of a coherent taxonomy of existing research and theory in the field with positive suggestions for future pedagogical strategies. In practical terms, the conclusions it draws from the contextual analysis of complex relationships between the various teaching methods observed, feed into recommendations and innovative proposals relating to further teacher training and classroom observation at the research school. In addition, the thesis identifies and develops new pedagogical strategies for enabling learning conversations which, if implemented, will ensure greater progress for many students. Other practical impacts are demonstrated by the way in which my research findings have been shared with local schools through existing teaching and learning networking groups, and have provided the basis for the creation of common observation programmes and on-going research strategies.

I wanted to discover ways in which teachers could meet the Ofsted requirement of ensuring that all students made progress and were effectively learning in each lesson. This expectation was delivered in Ofsted documentation and the teacher standards, but with little definition of what this looked like in the classroom, nor how to achieve it. Current and historical research was plentiful in terms of how students learn, but the links between how students learn, and what the teacher can do to encourage this learning, was not as easy to find.

Following government initiatives into personalising learning, ensuing research had suggested that students learn better when they take responsibility for their own learning: that an empowered, autonomous student was a more effective learner. This particular theory was prevalent in the concepts of the Learning to Learn programme, a programme of discreet lessons which the research school had just embarked upon.

It fell naturally therefore that the first literature searches examined those concepts in more depth. Each of the researchers who espoused learning to learn, had their own theories based in other, earlier research, as well as their own practice. One of the key features of interest to my research was that of student voice – in particular the act of articulating learning through 'learning talk'.

Early literature searches enabled the drawing up of a set of characteristics which was suggested showed effective learning. I started by putting this list into a database, with the intention of having a set of observable features to match to the lesson observations I was going to undertake. In order to further ground these in practice, I wanted to talk to those people who were teaching the learning to learn programme in the research school. The design was forming, whereby I would interview the Learning to Learn teachers, make connections to the existing theories and observe these features in the lessons being observed.

I decided to choose ten teachers, with a view of observing them twice during the period. Rather than observe a class of thirty students, I asked each teacher to choose five students from their class. The thinking behind this was for ease of observation, but in hindsight, it became obvious early on that it was not going to be possible to just focus on those students. Some teachers put them in groups, some split them up so there was one on each

table, and some just left them to their normal groupings. I had deliberately not insisted on a particular approach, as I did not want the lesson to be artificial in any way, but if this was to be done again, I would not have chosen such a small number of students. Fortunately I had sent a letter home to all parents of this year group, to alert them to the fact that research into learning was taking place, so I was able to comment on whatever features I saw, regardless of which students were involved. (See chapter 5).

At each point in the study, the Observation Database was being added to. (Table 4.6, p.124). The process therefore was an iterative one, which added information at each stage, and led to further evaluation and robustness through constant literature searches into a variety of learning characteristics.

The aim was not to compare what happened in each lesson, but to note which teacher characteristics led to what type of student learning. Whether that learning was effective or not meant forming a measurement device based on existing theories. There were three main theories which came to the fore early on in the research. These were

1. West-Burnham's and Coates's Models of Learning (2005, p.35)
2. Mercer's and Hodgkinson's 'Four Classes of Communication Approach' (2008, p.21)
3. Bloom's Taxonomy – affective and cognitive domains (Beirne and Velsor, 2012, p.22).

Initially the analyses of the observations were based on which characteristics were noted – by ticking each of them in the Observation Database. The development of this was to match these learning characteristics to one or more of the four theories. This gave a 'judgement' on whether the learning could be considered effective or not.

The final analyses revealed links between each of the teacher actions and certain learning characteristics, which then fed into the four theories to develop my own, evidence-based models.

The novel context of the research school led to this research having to be a case study. Where the evaluations and processes are replicable, the specific findings are, arguably, particular to this school. All of the teachers during this year were taking part in a CPD

programme which developed their skills in questioning and their understanding of higher order thinking and deeper learning attributes. Students were also being taught how they learn best, through the Learning to Learn programme (which was only delivered to Year 7 at the start of my research but consecutive year groups became part of the programme each year, so all students had the language of Learning to Learn by the end of my research.) The impact of this on the development of their learning power has to be taken into account.

The findings also enabled me to draw up ways in which we could observe these features in normal day-to-day observations and how we could train teachers to deliver lessons which led to deeper learning. Observation forms were developed alongside lesson planning forms, which featured heavily those characteristics which were found to have an impact on learning - specifically collaborative activity and questioning for sustained conversation. Outcomes of the sharing of this research have led to positive developments in the research school (an Ofsted Good) and the CPD of a local network of schools has included a focus on strategies to increase learning power in students. Delivery of the findings at a national conference is also planned for later this year. These sessions include aspects of questioning and collaborative learning for increasing effective learning, as well as an exploration of observational tools for senior leaders based on the methodological processes of this research work.

The following diagram outlines the design process of this research, highlighting in particular the derivation of the Observation Database (examined in greater detail in chapter 4) and the sequential development of the models related to the research findings.

Table 1.1: Research Framework

Identification of study	OFSTED expectation of all students learning effectively. Apparent mismatch of theory to support OFSTED expectations. Government initiative into personalising learning. Literature suggests deep learning is connected to classroom discourse.

Derivation of questions	What does effective learning look like? Does learning talk have an impact on effective learning? How can teachers encourage learning talk?
Selection and deployment of Case method	Needed to determine what existing literature said about effective learning, and learning talk. Needed to determine the role of language in cognitive development – historical theories and research. Needed to find out how the governments' views on learning had developed and how their expectations matched the development of theories of learning. Importance of the process being completed within one year to ensure consistency of cohort.
Distillation of data	Initial structure of the Observation Database based on literature searches and interview of Learning to Learn teachers. Observation Database developed following first round of observations and supported by further literature search which enabled classification and categorisation of characteristics.
Conclusions	Lesson observation transcripts, placed within the Observation Database. Enabled visual display of connections between types of teacher activity and types of learning talk. Different learning talk from students led to deeper learning or higher order thinking. This was established through a direct analysis of observation data alongside four theories from: 1. West-Burnham's and Coates's Models of Learning (2005, p.35) 2. Mercer's and Hodgkinson's 'Four Classes of Communication Approach' (2008, p.21), 3. Bloom's Taxonomy – affective and cognitive domains (Beirne and Velsor, 2012, p.22), 4. OFSTED's (2012) indication of rates progress.
Recommendations	The outcomes from the observation pattern matching led to three models suggesting good practice from teachers to encourage positive learning talk leading to deeper learning and higher order thinking.

	Observation forms for senior management to look specifically for behaviours which encouraged positive learning talk from students. The potential use of the Observation Database through the processes employed in the case study.
Downstream of deployment of outcomes of the study	Training of staff in the research school in the stated teacher activities; use of lesson planning and observation forms to direct teachers to utilise questioning and collaborative learning activity for positive learning talk. Networking with senior leaders in partnership schools to enable joint observation and sharing of those practices which were found to develop positive learning talk. Joint INSET days with partnership schools to share practice. Invited to share findings at national education conference (over four hundred schools) expressly to share the processes and findings of the research. Specifically - processes of development and novel use of the Observation Database, observation *pro formas* and practical findings regarding deep learning and its link to higher order questioning and collaborative activities. OFSTED grading of the research school as Good, highlighted positive learning activities evident from the research. Evidence of a change of language of staff and students in the research school displaying how the metacognition of these new practises have formed a part of the day-to-day working of the school.

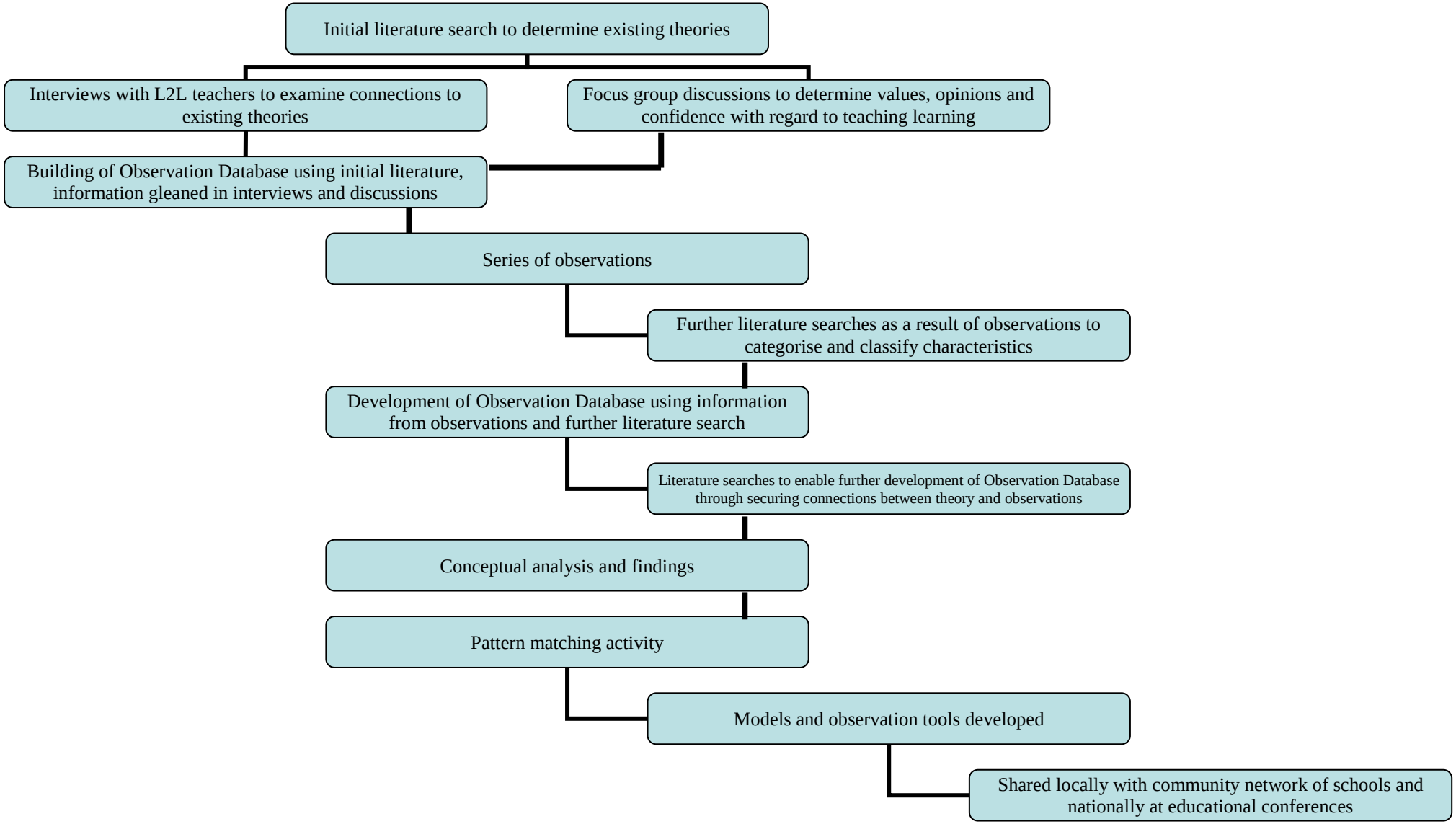


Figure 1.1: Diagram of conceptual links

Table 1.2 describes the timeline for the research activities as they took place throughout the research.

Table 1.2: Process of research

Process of research for this case-study *Chapter numbers indicate where this is detailed within the thesis*			
	Activity	**Intention and outcome**	**Chapter number indicates where this information is detailed within the thesis**
1	Initial literature search	1) Current and historical theories into learning, learning talk, classroom interaction 2) Ofsted, teacher standards and other related government initiatives regarding learning in the classroom 3) Current and historical theories of learning, particularly those which related to cognitive development and theoretical claims of a connection between language / talk and effective learning.	Chapter 3 – Theoretical Perspectives; chapters 6, 7 and 8 - Findings and Analysis - student and teacher
2	Interviewing Learning to Learn teachers	To establish what teachers said effective learning looked like in those lessons. To determine which Learning to Learn theories had a positive impact on effective learning. To examine connections to existing theories.	Chapter 4 - Research Design
3	Classification of responses Early construction of the Observation Data-base	Preparation for observing these in practice and further study of specific learning theories related to interview data. To provide lists of characteristics to look for in observations	Chapter 4 - Research Design Chapter 3 - Theoretical Perspectives; chapter 4 – Research Design
4	Initial focus group discussion with teacher cohort.	To determine values, opinions and confidence with regard to teaching learning	Chapter 4 – Research Design

	Focus group discussion with students	To fine-tune the characteristics to form the Observation Database To gain students' opinions about learning To explain about the process of the research	Chapter 4 – Research Design Chapter 4 – Research Design
5	First round of observations	To examine those characteristics listed from existing theories To begin to look for any patterns	Chapter 4 – Research Design; chapters 6, 7 and 8 - Findings and Analysis - student and teacher
6	Teacher focus group discussion 2	To deliver initial CPD sessions based on existing theories and how these were evidenced so far in practice	Chapter 4 – Research Design; chapters 6, 7 and 8 - Findings and Analysis - student and teacher
7	Transcripts placed in Observation Database. Initial analysis.	To begin to establish patterns and frequency of characteristics – ready to be viewed in next round of observations Re-classification of headings and suggestion for elimination of some aspects	Chapter 4 – Research Design; chapters 6, 7 and 8 - Findings and Analysis - student and teacher
8	Independent work whole school at same time as research	Sharing of findings with all staff through whole school CPD on use of questioning and collaborative activity. Work with students on learning and creation of student 'learning' ambassadors	Chapter 9 – Conclusions and Contributions to Knowledge
9	Second round of observations	Decided on four main theories – which later formed the basis of the models	Chapter 3 - Theoretical Perspectives; chapters 6, 7 and 8 - Findings and Analysis - student and teacher
10	Literature search	– connection between what theorists saw as effective learning and the role of language and LT in making this happen	Chapters 6, 7 and 8 - Findings and Analysis - student and teacher
11	Conceptual analysis findings Pattern-matching activity	Further refining of Observation Database. Highlighted connections between teaching approaches and learning activity	Chapters 6, 7 and 8 - Findings and Analysis - student and teacher; chapter 9 – Conclusions and Contributions to Knowledge

12	Development of models Development of observation forms	To demonstrate these connection and suggest future CPD for teachers to enable others to look for the same aspects which the findings suggested had an impact on student learning	Chapter 9 - Conclusions and Contributions to Knowledge

The chapters in this thesis are as follows:

Chapter 2: The Local and National Context for the Research Work

This chapter outlines the unique context of the school and the impact of educational initiatives on the research.

Chapter 3: Theoretical Perspectives

This chapter examines those theorists, both historical and existing, who established a link between learning talk and deeper learning, progress and higher order thinking.

Chapter 4: Research Design

This chapter describes the methods employed in the research and the iterative processes which led to the development of the Observation Database and the recommendation of new models for good practice.

Chapter 5: Ethics

This chapter outlines the context of the school and how the potential ethical conflicts were addressed.

Chapter 6: Findings and Analysis – Students: types of talk

Chapter 7: Findings and Analysis – Students: questioning and reflection

Chapters 6 and 7 examine the transcriptions made from the lesson observations and link these to the literature described in Chapter 2, regarding types of learning talk. These chapters are specifically exploring student learning talk.

Chapter 8: Findings and Analysis – Teachers

Where Chapters 6 and 7 looked at student learning talk, this chapter is dedicated to types of teacher talk, and the impact this has on student talk.

Chapter 9: Conclusions and Contribution to knowledge

This chapter makes recommendations for good practice for teachers, based on the findings and analysis, and sets out three models of good practice and contributions to knowledge

Chapter 2: The Local and National Context for the Research Work

Until September 2011, I was an Assistant Head Teacher at a secondary school in the East of England, with a responsibility for staff development and training. I am now Vice Principal at the same school, which is the school chosen for my research. Much of my work during the last ten years has been related to the quality of teaching and learning. The fortnightly training sessions for teaching staff (known as Professional Learning, and for which I had responsibility) have been based around learning: planning for learning; monitoring and improving progress; assessment for and of learning; thinking skills and, in 2008, the introduction of a 'Learning to Learn' initiative which involved both staff and students. Middle Leaders (in our school this refers to Subject Leaders and Teaching and Learning leaders) had been given the task of developing standardised observation programmes and of providing consistent support for developing teachers.

The research school was in an unusual situation in that it was the sole non-selective school in a borough of only 12 secondary schools. The effect of this was that the school's intake was vastly different from others in the area, with the majority of our cohort being of low ability. At the time of my research, eight of the other schools in the borough had a selective intake based on a variety of different criteria such as religion, academic ability, and artistic talent. In order to maintain the anonymity of these schools, precise detail has not been provided. However, to understand the complexity of the context it is necessary to note that all the other schools were either fully or partly selective, were in special measures, or were special schools.

This aspect had an inevitable impact on the students' self-esteem and confidence in the research school, as well as on the skills required by teachers to meet the needs of the student cohort. This feature provided an important driver in my desire to raise learning standards, as evidenced in my research, and in my rationale for focusing on the social cognitive learning theories as demonstrated through the work of Vygotsky and developed by later theorists including Barnes (1976), Alexander (2008), and Hargreaves (2008), as presented through the thesis.

Another distinguishing feature of the school was that in 2008 it had the lowest A*-C grades in the authority (including English and Maths) at 32% which was in contrast to most of the other selective secondary schools in the authority (Appendix 1, p.282).

This was arguably one of the consequences of being surrounded by selective schools. An additional impact of the school's status within the locality was that the cohort at the research school was made up of students mainly from outside the catchment area and, anecdotally, it was known that local parents preferred to send their children elsewhere. When I started working for the school in 2002, attainment was low, behaviour was unacceptable, and the reputation of the school in the area was poor.

The gradual improvements in student attainment prior to the start of this research were due, in part, to the development of new teaching and learning strategies to support student progress. Perhaps inevitably, for many years, teaching had focused on students at the lower end of the ability range, with their more able colleagues receiving inadequate attention and failing to achieve the progress one would expect. A strong support-service within the school offered much needed counselling to students, effective SEN support, and dedicated non-timetabled staff dealt with the behavioural issues – of which there were many. The school context explains my rationale for wanting to address the processes of learning within the research school; other influences came from educational proposals being introduced at Government level.

In 2004, teachers were presented with a new initiative in a statement issued from David Milliband, the then Education Secretary, which expressed the Government's desire to see the adoption of personalised learning strategies in schools. This initiative was presented two years later in Christine Gilbert's report on '2020 Learning' (Gilbert, 2006). She outlined how education should be tailored to the needs, interests, and abilities of every child, describing how this approach to personalisation would have the 'potential to transform education' (Gilbert, 2006, p.3).

This report proved an important motivator at a time when the research school needed to improve and change. At the time, increasing student success, and the attainment of Media Specialist Status for the school, meant that the intake was beginning to change. The average level of ability of the students joining the school in Year 7 was considerably

higher than before and the *range* of abilities within the classroom was far greater. (There is no available data to validate this; see Appendix 1, p.282). For the school to continue to improve it was essential for teachers to address progress in the classroom for all learners, and the school began to examine current research and to adopt approaches that would help quicken the pace of this progress.

One area on which the report focused was the need for teachers to offer opportunities for students to be able to take more responsibility for their own learning in the classroom by enabling them to talk about their learning. This greater student participation, it was argued, would lead to a more balanced partnership between teacher and student, with the premise that they would be able to 'move learning forward together' (Gilbert, 2006, p.12). The notion of language shaping learning were significant features of Vygotsky's theories, and Gilbert's reference to talk influencing the nature of students' learning, led to the concept of learning-talk as a focus for my research.

There were two positions that were clear from this aspect of the report. The first was the need for students to have a voice; the second was the vital role the teacher had to play in encouraging this newly balanced teacher-student relationship.

> 'Teachers use their skills and knowledge to engage children and young people as partners in learning, acting quickly to adjust their teaching in response to pupils' learning.'
>
> (Gilbert, 2006, p.4)

2008 also saw secondary schools embarking on major changes in the National Curriculum, (National Strategy: Department for Education, 2007) notably, with respect to this research, in Years 7 – 9. The Department of Children and Family Services described the new, flexible approach as having 'less emphasis on setting out the content of lessons' and more on 'key concepts and skills'. Consequently, teachers were obliged to consider different approaches to both the delivery and the content of their lessons. The Qualification and Curriculum Authority set out the challenge to schools to enable all young people to become successful learners, confident individuals and responsible citizens by developing a programme which would help to develop the wider skills for life and learning. In summary then, the new initiatives focused on students taking more responsibility for their learning,

greater learning conversations between teacher and student, and the need to develop those skills required for life-long learning.

Having explained and implemented their new education strategies, the Government needed to consider the ways in which these initiatives could be measured and evaluated. Existing measurements such as OFSTED and the Qualified Teacher Standards had, therefore, to be adapted by the use of terminology which emphasised, in particular, the need to demonstrate progress for *all* students, and the requirements to enable each of them to interact in a variety of ways in the classroom, thus personalising the learning for all students.

For example, one of the Teacher Standard descriptors was modified to state that teachers must:

> 'Have a knowledge and understanding of a range of teaching, learning and behaviour management strategies and know how to use and adapt them, including how to personalise learning and provide opportunities for all learners to achieve their potential.' (Qualified Teacher Standards, updated 2007)

Another descriptor requires that teachers use 'explanations, questions, discussions and plenaries effectively.' (Qualified Teacher Standards, updated 2007) and to 'support and guide learners to reflect on their learning, identify the progress they have made and identify their emerging learning needs' (Qualified Teacher Standards, updated 2007). The teacher standards and criteria from OFSTED are not explicit in their meaning; the use of the word 'effectively', for example, gives rise to a range of possible definitions. Equally OFSTED do not offer guidance as to how their descriptors are to be achieved. One focus of my research therefore was to clarify these directives and develop clear strategies for their implementation in the classroom, examining whether teachers can provide opportunities for learning talk to demonstrate these specific OFSTED criteria and meet the teacher standards.

The closing chapters of this thesis show how the Government's methods of measuring schools effectiveness moved forward rapidly throughout the period of this research, so that over the space of just four years, the 2012 OFSTED framework was produced, and the

newly applied descriptors of the Teacher Standards were even more finely tuned to support the earlier agenda.

Given that it was imperative that the teaching and learning approaches in the research school changed in order to meet the success criteria established by OFSTED, and given the almost total lack of practical strategies provided in their publications, the overarching question for my research was how to enable teachers to demonstrate OFSTED criteria in their lessons.

These influences led to my intention to examine a concept which Mercer and Hodgkinson described as 'learning talk' (Mercer and Hodgkinson, 2008, p.110) and to explore whether enabling learning talk could in turn develop a greater power for learning. I therefore set out to identify the extent to which learning talk was a feature of classroom teaching in the research school and to evaluate how successful it was. This in turn would enable me to develop the necessary strategies to underpin the future success of the personalised learning agenda.

Educational theories of how we learn have undergone several transformations over the last century. The most notable is the movement from Behaviourism and Cognitivism, the detail of which is examined more fully in the next chapter. The introduction of the Government initiative in 2004 came at a time when there was widespread acceptance of Social Cognitive Theories of learning, and psychologists and scientists were further developing these principles by beginning to examine the processes of how the brain works and the impact of metacognition on learning.

It is clear that contemporary thinking gave general approval to the new Government agenda as it was aligned to existing educational theories. There were a group of researchers who responded to the Government initiatives by producing literature which was sent directly to schools. Some of those researchers, including Professor Guy Claxton, Bill Lucas, Toby Greaney, Dr Jill Rodd, and David Hargreaves, managed in this way to create a vital link between their academic research and the classroom practitioner.

One example, a piece of research which was particularly relevant to the research school, came from Claxton, Lucas, Greaney and Rodd. They created a learning package called

‘Learning to Learn’ (also known and subsequently referred to, as L2L) through a two-year action research project run by the Campaign of Learning (a Government-supported charity, run by a body of educational advisors and academics) in 2001. This thesis refers to both the concept of learning how to learn, and the package ‘Learning to Learn’, which the school bought and used.

It is important to bear these details in mind given that the research school decided to embark on teaching L2L in September 2008, and the student cohort had all studied L2L in their first year. Consequently, my research investigations linked to the fundamental assumptions of this programme, such as personalised learning, and students taking responsibility for their own learning. (Details of the programme and teaching strategies employed by the L2L teachers are provided in Appendix 2: ‘Learning to Learn’, p.284.)

The following chapter examines the historical and traditional views of learning, how these evolved into current theories and how each of these link to my research.

Chapter 3: Theoretical Perspectives

The aims of my research can be expressed in the following research questions:

1. To what extent is it possible to enable classroom teachers to demonstrate specific OFSTED criteria and satisfy the Government's regulated Teacher Standards?
2. In what ways might a teacher influence the nature of learning talk in the classroom?
3. How might it be possible to create effective, robust methods for evaluating and measuring learning talk?

The list below illustrates the types of literature that were examined to support the data collection.

- Contemporary and historical theories of how children learn, particularly theories of classroom interaction;
- Existing research into methods of recording and analysing classroom discourse;
- Documentation related to OFSTED criteria and the Teacher Standards.

Ofsted expected effective learning for all students. The term 'effective' needed clarity and it was also necessary to examine the impact that learning talk had on the learning of students. Initial literature searches (from Piaget, Vygotsky, Hargreaves Claxton, Mercer and Hodgkinson) highlighted a potential link between effective learning, and the empowered learner. This chapter describes each of these concepts; a summary of which can be found at the end of the chapter (pp. 80-84).

These theoretical perspectives, on which this thesis is based, are outlined in this chapter and are presented in five sections.

Section 3.1, *Origins of theories into learning through talk and dialogue,* provides a review of some of the historical theories of learning through talk which preceded the Government interventions of 2004.
Section 3.2, *Government methods of measuring the quality of teaching and learning*, shows how this year was a turning point in terms of Government foci, which in turn led to clearer measurements of teaching and learning through OFSTED and revised teacher standards.
Section 3.3, *Current and emerging theories,* outlines the theories and research which were generated by these Government initiatives and which have directly contributed to this thesis.
Section 3.4 examines the *Specific features of learning talk chosen for identification, observation and analysis* with regard to the student.
Section 3.5 relates to the *Specific features of learning talk chosen for identification, observation and analysis* with regard to the teacher.
Section 3.6 examines the *Specific features of learning talk chosen for identification, observation and analysis* with regard to both student and teacher together.

Section 3.1: Origins of theories into learning through talk and dialogue

Existing research into learning itself is historically extensive and complex. It is not, however, the remit of this thesis to provide an extensive overview of the countless theoretical branches that exist, since my concern is with specific theories relating to the use of language for learning. This aspect provides the parameters for the current chapter, and serves as a basis for its concluding analysis of current and emerging theories which have emerged in response to recent Government initiatives on personalising learning.

This chapter explores how practice has developed from the traditional Behaviourist understanding of learning, through the Cognitivist ‘revolution’ (Gardner, 1995, p.31) and the impact of the more recent learning theories. The purpose of examining these earlier theories was to find evidence of learning talk linking to deeper, more effective learning.

The next section is included because of those aspects which are still apparent in practice, but appear – from the evidence of this research – to have little impact on the depth of student learning compared to that which promoted learning talk. As this thesis argues, the impact comes from development of the later, cognitive theories.

3.1a Behaviourist Theories of Learning

Some of the earliest definitions of learning are to be found in the Behaviourist approaches of the later nineteenth and early twentieth century. Ivan Pavlov's and John Watson's 'classical conditioning' of the 1920s, Edward Thorndike's 'connectionism' of the early twentieth century, and the later work of Burrhus Skinner's 'operant conditioning' (1940s) are all Behaviourist theories which defined the learning of the time (cited in Lefrancois, 1997). The Behaviourist belief, which now forms just *part* of the contemporary theory of learning, is that learning is brought about by behaviour modification through positive or negative reinforcement and repetition. The need for *reflection* and *understanding*, two of the more significant concepts in contemporary learning theories (Hargreaves, 2006; Mercer, 2000; Mercer and Hodgkinson, 2008; Rudduck, 2006; Flutter and Rudduck, 2004; West-Burnham and Coates, 2005), appear to have no connection to the behaviourist theories highlighted here.

Pavlov's experiments with dogs (Pritchard, 2008; Lefrancois, 1997) are arguably the most well-known examples of research into behaviourist approaches, examining how dogs could be 'taught' to salivate through a repetitive process which trained them to believe food would be produced when the bell sounded. The dogs therefore associated the sound of the bell with the expectation of food. Watson's experiments produced similar results illustrated here in an example of a boy who associated the *sound* a teacher made when using a cane to punish a child, with the fear of the punishment: every time the teacher used the cane she emitted a squeal-like sound. As the cane was used more frequently, the boy would flinch at the sound and when the sound was made on another occasion without the cane being present, the boy felt the same fear associated with the pain of the punishment. These two illustrations from Pavlov and Watson provide examples of both positive and negative reinforcement where the subject is eventually conditioned to respond in a particular manner.

These notions were further developed by Thorndike, who argued that animals were not intelligent creatures and consequently their trial-and-error responses were different to the learning of humans. His 'connectionism theory' claimed that people make a number of different responses to a given situation until they result in what he termed 'a satisfying state of affairs' (Lefrancois, 1997, p.117). Once this has been achieved, the person will repeat the action until the new learning becomes embedded, thus creating an intelligent *connection* between the stimulus and the response. Where Pavlov and Watson argued that repetition was enough to ensure certain behaviours were learned, Thorndike and Skinner believed that reinforcement was necessary to ensure learning was achieved. These illustrate the Behaviourist approach as being that which requires repetition of stimuli and reinforcement of response.

The significance of the Behaviourist principles in contemporary teaching is more evident in behaviour management strategies than in current learning approaches. It can be argued that although teachers today do use repetition as a method of teaching, such as the rote learning of times-tables, for example, or in language learning which particularly favours the repetition and reinforcement approaches, they do not universally apply the clear reinforcement schedules which would be required to create a conditioned response. The tenuous link between the early Behaviourist Theories and the suggestion that language is required for learning, as is the focus for this research, serves to highlight the way in which learning theories have developed over time. Contemporary learning is more usually attributed to understanding and the more complex mental processes associated with the Cognitive Theories of learning as examined in the following section.

3.1b Cognitive theories of learning

Cognitive educational theories dominated the early to mid-twentieth century (Pritchard 2005; Lefrancois, 1997), and are formed around the understanding of the stages and processes involved in intellectual development. The move from the Behaviourist approach of being *in receipt* of new learning, through repetition and reinforcement, to being *actively* involved in the Cognitive learning process, is an important one and the notion of a more empowered learner is one which features substantially in my research.

The Swiss development psychologist, Jean Piaget (1896-1980) argued that different learning takes place at different stages in our development and that these stages define the

child's ability to take on certain learning approaches. His closely documented observation of his own children served as the basis for his categorisation of the main stages in the intellectual development of children as being sensorimotor, preoperational, concrete and formal.

His work has served to provide one of the cornerstones of modern teacher training. His many achievements into understanding the way that children learned inspired a considerable part of the training of teachers in the early 1960s and 1970s. One of the notable results is that his theories continue to influence many present-day teachers within and beyond my research school. His work is the basis of many subsequent theories, such as the multiple intelligence theories of Howard Gardner, who described Piaget as a 'central figure[s] in the cognitive revolution' (Gardner, 1995, p.31) and Amsel (cited in Lefrancois, 1997, p.156) who commented on the impact this revolution was having on both educational theory and practice.

While Piaget's cognitive constructivist claims were that learning was dependent on the child's readiness to learn, he placed little emphasis on children learning through demonstration. In fact the act of learning through watching others implies a level of intelligence and understanding which Piaget argued is not present until the 'formal operations' stage, where children are able to think logically. He argued that sensory-motor intelligence (attributed to children of up to two years) is 'an intelligence in action and in no way reflective' (Piaget, 1947, p.133). His description of the sequences a child encounters to enable reflection, is linked inextricably to the learning of physical movement and individual actions where 'thought, springing from action, is indeed egocentric at first' (Piaget, 1947, p.135) and in this way rejected the need for another person to be involved in the learning process. His explanation of this learning process was inextricably linked to our development of language and its connection to the actions of the individual, which he divided into eight classifications.

In the first three, he made reference to the child using egocentric speech for the pleasure of talking, '*repetition*', to think aloud, '*monologue*', and to share thoughts with others, ' *dual or collective monologue'*. However Piaget argued that this third category, that of the '*dual or collective monologue'*, does not require the listener to understand or respond. The

presence of the listener is simply to 'serve[s] as a stimulus' (Piaget, 1923, p.23). Each of these sits within his classification of '*Egocentric speech*'.

In his next classification, of '*Socialised speech*', Piaget began to describe the type of language more commonly present in modern-day secondary school classrooms. He defined a fourth category '*adapted information'* where the child exchanges thoughts with others in a collaborative activity 'in pursuit of a common aim' (Piaget, 1923, p.23). The fifth descriptor, '*criticism*' is defined as one where children make remarks made to others in order to gain superiority. The next definition, '*commands, requests and threats'* indicates definite interaction between children, whilst the final two describe both *'question'* and *'answer'* as a description. Where Piaget's definitions tended to describe the categories as a result of the activity in which the child is involved, another cognitive theorist, the Russian psychologist Lev Vygotsky, described language as the tool by which children learn, offering a refinement which corresponds more closely to the contemporary views of language in the classroom.

These two aspects clearly highlight the differences between Piaget's approaches to learning and those of Vygotsky. On the one hand there is a difference in thinking with regard to the use of language in the classroom to support learning, and on the other there is a distinction between egocentric learning of Piaget's theories and the learning which develops with the support of another person.

Since Vygotsky's work has been translated into English, there is a debate that some of the translations may lead to an imprecise understanding of some elements of his theories. An example of this is cited, for example, in Davydov's translation of the Russian word *vospitateli* which jointly means 'upbringing' and 'nurture' (Lefrancois, 1997, p.97). Additionally the editorial comments from Cole and Scribner in Vygotsky's 'Mind in Society' (1978) describe the need to add information from different, additional sources 'in order to more fully explicate the meaning of the text' (Vygotsky, 1978, p.*ix*). However, what remains clear in Vygotsky's argument is the theory that children are able to learn by observing a more expert associate.

Although this notion was contradictory to Piaget's thinking, who felt that learning would be inhibited if the child were *shown* how to do something, both he and Vygotsky were of

the same opinion that learning was a 'socially mediated activity' (Pritchard, 2005, p.111). Vygotsky's theories emphasised the central role of the adult or more knowledgeable peer in the child's learning process, whilst also acknowledging the significance of the interaction *between* children in this context. Vygotsky's theories thus clearly support the concept of social and cognitive development within the learning process, described by Pritchard as a process 'fostered by collaboration' (Pritchard, 2005, p.111).

The approaches to learning of both behavioural and cognitive theories have been of fundamental importance in shaping contemporary views of the education process. Within the context of my research, it is Vygotsky's focus on the importance of children's interactions with each other, as well as with the educating adult, which dominate. The *types* of interaction examined in my research, and the role of the teacher in creating the structures and opportunities for this scaffolding to occur, will further develop Vygotsky's theories and are outlined in later chapters.

Piaget's explanation of children learning according to what age, and stage, they have reached is equally accepted and criticised in current thinking. Some of the criticisms were borne of new developments which suggested that his stages of intellectual development should be viewed with greater flexibility. Bloom for example offered a new approach to defining levels of cognitive development in a key work from the 1950s. Bloom's taxonomy describes the way in which development can be divided into three domains: psychomotor, affective and cognitive. Of these three, the affective and the cognitive provide particularly useful indicators when examining issues of accessibility and learning opportunities. The *affective* descriptors, provided by Bloom, are as follows:

- 'Receiving – the student pays attention;
- Responding – the student participates in the learning process; has a reaction;
- Valuing – the student attaches value to information or a situation;
- Organising – the student relates learning to self; elaborates on learning;
- Characterising – the student internalises information, which influences personal characteristics.'

Beirne and Velsor, 2012, p.22

Whilst Bloom's *affective domain* has been less widely explored by educators than his *cognitive domain*, (Beirne and Velsor, 2012, p.22), it is clear that it assumes particular significance when observing the quality of learning in the classroom achieved through the engagement of the students. Both affective and cognitive descriptors have accordingly been included in my analysis of the observation data.

The definition of cognitive features, which was revised in 2000 by Anderson and Krathwohl (Beirne and Velsor, 2012, p22) to match current thinking, enabled educators to measure more accurately both lower and higher levels of thinking and learning. Subsequent research in the field has been divided as to whether or not the taxonomy is seen to provide formal distinctions, where the student must work through the lower levels before being able to access the higher ones. Beirne and Velsor (2012), for example, argue that Bloom's taxonomy constitutes a 'meta-language for all learning' (Beirne and Velsor, 2012, p.3) and suggest that it provides a coherent strategy for measuring levels of learning and testing. On the other hand, Dr Spencer Kaga argues that learning is not hierarchical and, therefore, cannot be measured against a rigid scale of descriptors (Valkenburg and Dzubak, 2012, p.3). As this thesis will demonstrate, my work has found the taxonomy useful as a basis of delineation – or description – of lower and higher order thinking, but neither the debate about whether or not learning can be demonstrated in this hierarchical order, nor whether it can be developed in such a formal sequence is relevant to this study.

Table 3.1: Bloom's Taxonomy – Original and Revised

Original Bloom's Taxonomy	**Revised Bloom's Taxonomy**
Knowledge	Remembering
Comprehension	Understanding
Application	Applying
Analysis	Analysing
Synthesis	Evaluating
Evaluation	Creating

Beirne and Velsor, 2012, p.22

This taxonomy has contributed to my analysis of the observation data, in order to examine evidence of any patterns which link specific teacher's actions in providing different opportunities for learning, to each of these descriptors.

Both the *practical* classroom use of Bloom's taxonomy and the *theories* of both Piaget and Vygotsky are taught to training teachers, (local Teacher Training Partnership Training programme 2009-2010; Canterbury University PGCE programme, 2013) demonstrating how educational thinking has developed over the last century. An argument which will be developed through this chapter suggests there was little movement in thinking until the 2000s and, in fact, towards the end of the twentieth century, educational thinking was still closely aligned to those early theories. A significant conclusion Lefrancois drew in 1997, which related Vygotsky's theories to the thinking of the time, demonstrated this. He concentrated on five main points, summarised below, which had implications for the teaching of the late 1990s, arguing that these 'reflect almost exactly recent theories and beliefs' (Lefrancois, 1997, p.99).

- 'Education is intended to develop students' personalities;
- Personality is linked to creative potential which needs to be developed;
- Teaching requires activity and participation from the student;
- Teachers should guide the learning rather than force their will on the students, so teaching should be a collaborative process;
- The most effective teaching differentiates for learners'.

Lefrancois, 1997, p.99

However, it is the last three which continue to hold importance for the twenty-first century learner. Differentiation has, of course, great importance for the classroom teacher, but has now been established practice for many years. Those which are still developing, and have consequences for the contemporary practice being outlined in this research, are

- Teaching requires activity and participation from the student;
- Teachers should guide the learning rather than force their will on the students, so teaching should be a collaborative process.

An examination of the theories which reflect these follow later in this chapter. However, they did not fully emerge until after the Government had presented methods of measuring the quality of teaching in schools. The next section describes these Government measures and begins to put forward the theory that their methods may not have developed correspondingly to existing theories of effective learning, leaving a gap in clarity which teachers have had to fill for themselves, and one which my research aims to address.

Section 3.2: Government methods of measuring the quality of teaching and learning

The work of the theorists mentioned above provided the basis of teacher training for many years, and teaching and learning strategies and approaches in secondary education remained quite stable prior to 1997. Although the Education Minister changed regularly, and, therefore, numerous education initiatives were undertaken, none of them demanded a re-think of *how* to teach. The six Education Ministers between 1986 and 1997 were focused mainly on changing the more substantive elements of schools: curriculum, assessment and monitoring. Under Margaret Thatcher, the reforms were largely to do with the school curriculum – introducing the National Curriculum in 1987 – and 'Education for All' (Swann Report, 1985), which focused on ensuring that all students from white and multi-cultural backgrounds were offered the same opportunities in school to access the curriculum. In 1992, under John Major, Kenneth Clarke implemented more rigorous monitoring of schools and teachers, with the introduction of OFSTED. Further reviews of the National Curriculum and assessment were addressed throughout the 1990s, and a new body was set up for training new teachers with the forming of the Teacher Training Agency (TTA).

In 1997, the National Strategies were introduced and between this time and 2011 the Strategies were responsible for producing training materials and teaching and learning frameworks for a variety of initiatives. The Strategies' final report argues that it was 'one of the most ambitious change management programmes in education. (National Strategies, 2011, p.2)

Government targets were set for English and Maths to be achieved by 2002 (that 80% of all 11-year-olds achieve at least level 4 in English, and 75% achieve at least level 4 in

mathematics), and to support these targets The National Literacy Strategy and the National Numeracy Strategy was launched in primary schools. These required a portion of each day for primary school children to be spent explicitly teaching literacy and numeracy. The Numeracy Strategy is not relevant to this research, but the outcomes of the Literacy strategy had some references which are worth noting. One of the approaches to the Literacy Strategy was that of collaborative learning. This was seen as a vital element in developing language, suggesting that the 'harnessing of children's talk in learning, making learning explicit to them and providing effective feedback' would 'improve pupil progress and achievement' (National Strategies, 201,1 p10). Another Strategy which had relevance to this research was one which introduced frameworks to support language learning from a young age. Every Child a Talker (December 2010) focused on developing the skills of talk. Prior to 1998, the report suggested that 'the role of talk in the development of communication, language development and literacy was poorly understood or practiced with performance skills over-emphasised at the expense of collaborative work or role-play.' (National Strategies, 2011, p.10). These initiatives of the Strategy were significant in developing talk in young people, but in terms of this research it is noted that the focus for the primary school strategies appeared to be more on learning and developing language rather than building talk for learning. Additionally the continuity of this strategy from primary into secondary education was not as efficient as may have been hoped in that it was not shared specifically with all secondary school teachers. The Secondary Strategy which has reference to 'the quality of classroom talk for learning' (National Strategies, 2011, p16) is that which applied to English teachers only (Secondary English, National Strategies, 2011, p16). Although it references the fact it is 'crucial to progress in English and across the curriculum' (National Strategies, 2011, p16), it was left to individual schools and education authorities to share with all areas of the curriculum and as such was inconsistent in its message.

Another significant initiative from the National Strategies which holds relevance to this research was the Gifted and Talented programme. Recommended materials and teaching approaches suggested that students 'become more engaged in learning when planning for progression is personalised, when progress is tracked and when challenging targets are negotiated' (National Strategies, 2011, p.32). This thesis develops the concept of personalisation and its link to effective learning later in this chapter.

The focus of teachers and schools during this period concentrated largely on how to change whole school approaches, for example re-drafting syllabi and ensuring that students could access the various new curricula being introduced. It is natural, therefore, to assume that what happened in the secondary school classroom, with regard to teaching and learning strategies and techniques remained much the same as it had for many years. None of the discussion documents nor White Papers from this period specifically addressed teaching and learning in the classroom, until the White Paper introduced by Estelle Morris in 2001, which led to the Education Act of 2002, 'Achieving Success'. The focus altered at this stage, becoming essentially more child-centred. 'Every Child Matters' (ECM) was introduced in the 2004 Education Act, establishing clear criteria to be met by each child in their school experience. This was echoed in a series of education debates, notably those from David Milliband, and Christine Gilbert, the then Head of OFSTED, which have been referred to previously.

So whilst all the education initiatives from the Government were focused on new curricula, processes and structures, the first time they introduced their expectations for what happened *in* the classroom, in 1992, they were in the form of a set of criteria to assess performance, from the newly formed OFSTED. As will be described below, these criteria did not offer the detail which helped teachers to understand how to meet them. Now, almost 20 years later, the formally established measurement of teacher performance is still achieved through the OFSTED criteria, and a new set of standards, known as the Qualified Teacher Standards. The key argument here is that although theories of how we learn have moved on enormously, as is discussed in later chapters, the OFSTED standards have not moved at a corresponding rate, nor do they complement the various descriptors now associated with student learning.

An example of this is taken from the specific criteria and standards being addressed in this research, particularly those which relate to the various aspects of learning talk, and which are outlined below.

3.2a OFSTED criteria

OFSTED's stated intention is to 'inspect and regulate services which care for children and young people, and those providing education and skills for learners of all ages' and to 'target under-performance.' (OFSTED, 2010; 2013). The model by which they carry this

out has changed over the years in which this thesis was being written, but has always included lesson observations.

The following statement is taken from the OFSTED Guidance for Inspectors when judging the quality of lessons.

> 'There is a **grade for the overall quality of a lesson**. This overall judgement will depend principally on the quality of teaching as demonstrated by the outcomes for the learners in terms of their progress and personal development (including their attitudes and behaviour) and the safeguarding of their health and safety. Inspectors should ensure they have observed enough of the lesson to complete this grade securely. The attached grade descriptions offer guidance on how to make this judgement.'
>
> OFSTED, 2010

The statement relating to 'progress and personal development' is somewhat vague and open to different interpretations. It was, therefore, difficult to support teachers at the time in their understanding of how to meet these criteria. There was a clear need for a set of more specific expectations to be achieved.

In fact the grade descriptors which the accompanying OFSTED Guidance paper provided, which were meant to give a picture of what was expected in the classroom, were not much clearer. The following statements are taken in full from the criteria for a 'Good' lesson. Those pertaining to this research have been highlighted.

> 'Most learners make good progress because of the good teaching they receive. Behaviour overall is good and learners are well motivated. They work in a safe, secure and friendly environment.'
>
> 'Teaching is based on secure subject knowledge with a well-structured range of stimulating tasks that engage the learners. The work is well matched to the full range of learners' needs, so that most are suitably challenged. Teaching methods are effectively related to the lesson objectives and the needs of learners. Teaching assistants and resources are well deployed and good use is made of time. Assessment of learners' work is regular, consistent and promotes progress.'
>
> OFSTED, 2010

Their guidance for an O*utstanding* lesson and a S*atisfactory* lesson was even less descriptive than this, with the solitary statement for *Satisfactory* merely suggesting that 'The lesson is inadequate in no major respect, and may be good in some respects, as shown by the satisfactory enjoyment and progress of the learners.' (OFSTED, 2010)

OFSTED, reporting directly to parliament, have a duty to report on underachieving schools. In order to assess how well a school is doing they access various school documentation and data, interview relevant personnel – including the students – and observe lessons. This model relies on lesson observations to form part of their judgement on teaching and learning. However, there is a notable difference between what OFSTED look for in their judgement of a good lesson and the definitions of effective learning as outlined by the various theorists examined in this thesis.

These differences have created tensions in the classroom, which have grown as educational practices develop and improve. The reason for this is that although the *processes* for gathering information for their judgements have changed over the years, OFSTED has continued to look for the same characteristics in the classroom. While significant developments have been reported in educational literature regarding how students learn, OFSTED criteria have remained the same.

As highlighted earlier, the OFSTED criteria are non-explicit and generic, which create certain tensions for teachers. Additionally there are contradictions caused by the manner in which the inspectors are advised to carry out the lesson observations. The stated time for a lesson observation by OFSTED inspectors is 20 minutes. Within this time the teacher should show that all students have made progress. To achieve this, teachers may create a lesson plan for the sake of the observation rather than for the sake of student learning. There is a growing conflict therefore that teachers' classroom practice may be developing to achieve a Good judgement from OFSTED rather than to achieve deep learning for the students and enabling them to become empowered, self-motivated learners. The end result may be the same from OFSTED's perspective, but the requirement to tick boxes is incongruous with meeting the needs of the students.

In order to make this information clearer and more explicit for teachers, many schools, including the research school, tended to create their own lesson observation forms, with

greater detail attributed to each aspect (Appendix 3, page290). These attempted to outline the expectations of the published criteria and enabled the leadership teams to observe and evaluate lessons in relation to agreed criteria.

Understanding the expectations of the criteria was only one part however, the key question, of course, was *how* to meet these criteria through the planning and delivery of lessons. What might the successful application of these criteria look like in the classroom?

On the one hand, the judgemental descriptors above suggested ways in which the teacher should behave in the classroom – 'adapt their language to suit the learners they teach, introducing new ideas and concepts clearly, and using explanations, questions, discussions and plenaries effectively' (OFSTED, 2010). The descriptor was presented like a checklist of how the teacher was expected to behave. However there was no definition of what was meant by 'using explanations… *effectively*'? What appeared to be implied here was that if the teacher used all of the techniques in the list then the students would make progress. However the reality is more complex than this, as this thesis will show. While OFSTED were stating somewhat vague expectations, current theorists were suggesting that effectiveness was brought about by empowering the learner, enabling learning conversations, ensuring opportunities for collaborative learning. What was missing from the OFSTED terminology was what this looked like in the classroom.

Through an analysis of the specific characteristics outlined in existing theories, and an examination of each of these characteristics in the lesson observations from this research, my thesis aimed to answer this question. The conclusions chapter will evidence that in part this has been achieved, through a process of observation that allows the observer to look for specific attributes. It will outline how schools' observation programmes could be adapted to enable both teachers and observers to have a clearer awareness of criteria to be included. For instance, whether the students were engaged in learning conversations or whether the questioning was sufficient to enable higher order thinking

3.2b Teaching Standards

In 2012 the Teacher Standards (Gov.UK, 2012) were revised, and the Government placed greater emphasis on the meeting of these. The standards were linked more closely to teacher appraisal and had a direct impact on teachers' career paths. However, at the time of

the data collection for this research in 2008, although there were a set of teacher standards in place, they were not universally adopted unless the teacher was new to the profession, and therefore being graded according to the standards, or was facing a possible disciplinary situation in which certain standards were being highlighted. In other words, at the time, the prescribed standards were not considered sufficiently important by the teacher in the classroom to alter his or her teaching practices. However from 2012, with the newly introduced performance-related pay structure, they became fundamentally important for the teacher's career.

The standards quoted below are of particular relevance to this research (each 'Q' number refers to that specific standard). Those descriptors which are specifically related to this investigation, and which, as a consequence, will require further observation and analysis, are highlighted.

> **'Q 10**
> Have a knowledge and understanding of a range of teaching, learning and behaviour management strategies and know how to use and adapt them, including how to personalise learning and provide opportunities for all learners to achieve their potential.
>
> **Q18**
>
> Understand how children and young people develop and that the progress and well-being of learners are affected by a range of developmental, social, religious, ethnic, cultural and linguistic influences.
>
> **Q25**
> **(a)** use a range of teaching strategies and resources, including e-learning, taking practical account of diversity and promoting equality and inclusion
> **(b)** build on prior knowledge, develop concepts and processes, enable learners to apply new knowledge, understanding and skills and meet learning objectives
> **(c)** adapt their language to suit the learners they teach, introducing new ideas and concepts clearly, and using explanations, questions, discussions and plenaries effectively
> **(d)** demonstrate the ability to manage the learning of individuals, groups and whole classes, modifying their teaching to suit the stage of the lesson.'

Department for Education: TDA, 2008

The key factor here was to establish how a teacher could meet each of these descriptors by using current and emerging research into how students learn.

Section 3.3: Current and Emerging Theories

There seems to be lacunae between the literature from theorists of the 1980s, such as Gardner, and those who are prominent in contemporary educational literature, for example, Mercer, 2000; Claxton, 2004; Hargreaves, 2004; and Rudduck, 2006. That is not to say that researchers were not involved in examining educational developments, but none appeared to have been substantial enough to have been introduced into the practitioner's classroom until the presentation of the aforementioned Government initiatives in 2004. These proposals led to the publication of a number of books and research articles, in addition to a plethora of new practical classroom guidance booklets, and internet articles, by both established critics and newly-inspired teacher-researchers.

Simultaneous to this educational research, was emerging *scientific* research into how the brain works, and the impact this has on the learning process. Many of the theorists of the time (such as Claxton, 2004 and Hargreaves, 2004) argued that students learn best through interactions; that their intellectual development was fostered through collaborative discussion, thus scaffolding their learning, and that as a result, focused teacher input was essential in ensuring that learning could take place. Claxton and Hargreaves also argued, however, that a large part of the responsibility for this learning lay with the student who now had to have a degree of metacognition and be able to engage in reflective practices. Whereas superficially, some of these theories were very similar to those put forward by early twentieth century educationalists, the foundations on which the new hypotheses were formed were multifaceted. This is clarified in the Summary, Table 3.4 (p.80).

The argument being set out in this thesis is that where the process of learning used to be aligned to stages of language, or cognitive development linked to age, in the case of Piaget, or to the process of interacting with a more expert colleague, as outlined in Vygotsky's work, the characterisations, processes and theories of learning have now become much more complex. The argument, supported by the theories outlined below, illustrates a successful contemporary student as being an autonomous, independent learner who is required to develop metacognitive characteristics and, through opportunities for collaborative interactions, can thus accomplish deeper levels of learning.

The next section examines these theories as follows:

3.3a Shallow Learning, Deep Learning, Profound Learning

3.3b Personalised learning, learner responsibility and autonomy

3.3c Collaborative interactions and learning talk

3.3a Shallow Learning, Deep Learning, Profound Learning

An example of the different levels of learning comes from West-Burnham's and Coates's model (2005), which distinguishes between superficial or shallow learning, deep learning and profound learning. They explored the notion of learning as being a *process* rather than a *product – how* one learns rather than *what* one learns. They claimed that the most important aspect of gathering knowledge is through *understanding* and suggested that the ability we have to analyse and interpret, and compare and contrast, constitutes *deep learning*. This deep learning involves 'a movement into metacognition and this is the essence of personalisation – the learner understands him/herself as a learner' (West-Burnham and Coates, 2005, p.37).

The table below, which explores each of the learning 'states' and how they could be evidenced in the classroom, features as one of the methods of categorisation for my observation data analysis.

Table 3.2: Models of learning (West-Burnham and Coates, 2005, p.35)

	Shallow: what?	**Deep: how?**	**Profound: why?**
Means	Memorisation	Reflection	Intuition
Outcomes	Information	Knowledge	Wisdom
Evidence	Replication	Understanding	Meaning
Motivation	Extrinsic	Intrinsic	Moral
Attitudes	Compliance	Interpretation	Challenge
Relationships	Dependence	Independence	Interdependence
	(single-loop learning)	(Double-loop learning)	(Triple-loop learning)

Shallow learning is that which relies on memorising and repeating facts, 'cramming' for exams and that type of learning which does not always remain in the learners'

consciousness for any degree of time. In the classroom this may be, for example, reading some source material and successfully answering questions on it but being unable to make the necessary connections to recall the information on a later occasion.

Deep learning is defined as that which stops being the 'replication of information' and becomes the 'creation of knowledge' (West-Burnham and Coates, 2005, p.37). The ability to engage in 'explanation, exemplification, application, justification, comparison and contrast, contextualisation and generalisation' is all considered to be *deep learning* according to Perkins (cited in West-Burnham and Coates, 2005, p.37). Deep learning is enhanced through metacognition where the student is aware of his own role as a learner. In this respect it is also what the L2L programme advances as being essential in the successful classroom.

Profound learning, according to West-Burnham and Coates, is the moral, emotional, empathetic appreciation of the application of the knowledge. The examples they gave were useful to cite: the empathy and understanding of the counsellor; the compassion of the nurse; the skills of the athlete. It 'engages with fundamental assumptions about who we are and how we engage in the world' (West-Burnham and Coates, 2005, p.38). One may expect to see profound learning in a subject such as Personal, Social and Health Education (PSHE) where, through discussion and emotional engagement, a student may leave the lesson with an enhanced sense of values. The only reference to this type of profound understanding in the OFSTED 2012 criteria is a reference to OFSTED's spiritual, moral, social and cultural development initiative (SMSC) and the expectation that this should feature strongly in lessons and in the school ethos.

> 'Ofsted states that all schools should be promoting pupils' spiritual, moral, social and cultural development and suitably preparing pupils for life.' (edisonlearning.net, 2013) which may manifest itself in the classroom through
>
> - 'Teaching that encourages participation, creativity, reflection and independence
> - Assessment and feedback that values pupils' work and effort
> - Activities that develop teamwork, leadership skills and self-reliance'
>
> (edisonlearning.net, 2013)

Another key player in the Government's response to the personalising of learning was David Hargreaves, the then Associate Director for Development and Research of the Specialist Schools and Academies Trust (SSAT) in the form of leaflets to schools relating to aspects of delivering the personalised curriculum. Hargreaves's pamphlets sent out to schools in 2006, and again in 2008, reflected the Government agenda with regard to changing schools from 19th Century institutions to educational establishments worthy of 21st century students.

Hargreaves's analysis of how to encourage deep learning included engaging the students in developing the curriculum. He suggested that this could be achieved in part through co-construction – treating students 'as active partners in the design, implementation and evaluation of their education' (Hargreaves, 2006, p.10). This notion was also referred to by Hardman where he cited the importance of teachers and students working together as 'active participants in the construction of knowledge' (Mercer and Hodgkinson, 2008, p.134).

The implications of this were vast, not least the need for the teacher to be prepared to listen to the students, and enable them to be involved through careful lesson planning and design. However, co-construction of knowledge is a broad term. Necessary for *this* research was an examination of the nature of the dialogue needed in order for students to understand their learning processes, and an evaluation of the claim that 'students [who] are effectively involved in their own learning … quickly take on more responsibility for their own performance' (Hargreaves, 2006, p.12).

The key argument is, therefore, that by responding directly to the needs of the individual child, teachers would be able to offer opportunities for him or her to become directly involved in the learning process – thus personalising learning. The students need to be able to understand, to appreciate, and to articulate how their newly acquired knowledge is important and relevant, through making connections and critical thinking.

There is no reference in the OFSTED criteria to deep or profound learning, or to the higher-order, critical thinking that research suggests one could expect from a successful learner. Nor do they refer to personalised learning in any form. This does however appear in the afore-mentioned Teacher Standard Q10, which highlights an expectation, but

without any clear guidance as to what this may mean in practice, thus making it appear disconnected from the educational research which has been further developed below.

3.3b Personalised learning, learner responsibility and autonomy

Hargreaves's belief in personalising learning was detailed in particular in his pamphlet about the 'Four Deeps' (Hargreaves, 2006), which referenced that deep learning was 'at the heart of personalisation' (Hargreaves, 2006, p.7). He was keen to point out that these guidelines were not based in research, nor did they reference existing research articles or books. They were 'reflections upon, and conceptualisations of, our work with schools on the theme of personalising learning' (Hargreaves, 2006, p.4). His ideas resonated with emerging research such as that of Mercer (2000); Mercer and Hodgkinson (2008); Rudduck (2006); Flutter and Rudduck (2004) and West-Burnham and Coates (2005) and are therefore cited here as important for this research.

Hargreaves believes that personalising learning is 'potentially a way of enhancing student motivation and commitment to learning, which is an essential prerequisite to raising achievement.' (Hargreaves, 2004, p.3).

Considerable critical attention has been given to the extent to which an empowered, autonomous student is an effective learner. There were many assumptions expressed during this time about what makes an effective learner, citing characteristics such as autonomy (Claxton, 2004) and self-motivation (Hargreaves, 2004).

It is also the case, however, that whilst a number of researchers valued this move into the twenty-first century, others argued that it was a step in the wrong direction since it implied that giving students greater autonomy in the classroom would inevitably weaken the teacher's control. This reaction was clearly visible in the classroom. A number of the responses from early focus-group discussions with teachers in the research school (September 2008) centred on the discomfort associated with

- 'letting the students 'off the reins' to let (*sic*) them ask questions;
- allowing them [the students] to move the learning forward themselves;
- letting the noise level in the classroom rise when students were talking in this way'.

Extract from Appendix 4 (p.292) Teachers' focus-group discussion, 2008

It was clear from such comments that delivering lessons in this way would require a new level of confidence from the teachers.

An article in *The Guardian* entitled 'Every Child Has a View' (Murphy, 2006) reported on the contemporary concerns of teachers. With the development of the notion of 'student voice', considerable emphasis was placed by the media on the way that students would want to take control over the 'experts', and even to assess the ability of the teachers. On the one hand, a number of teachers felt threatened by this new development, and certain schools reported staff leaving rather than running the risk of being 'evaluated' by their students. On the other hand, there were widespread references to benefits such as 'improved thinking skills, highly engaged students, and better relationships between students and teachers'. (Murphy, 2006). Futurelab, which posted many of their research findings on the internet, were also quoted in the article:

> 'Students need to actively participate in setting their own learning agenda so that they become fully engaged in the learning process.' (Tim Rudd, senior researcher at Futurelab)

Rudd, 2006

The opinions and possible reservations of teachers had to be taken into account when attempting to bring about change and it was essential for my research to acknowledge the impact of both advocates and opponents. There was a balance required between the opinions of the teachers and the rights of the child to have a voice: 'children have the right to say what they think should happen and have their opinions taken into account' (UN Convention, 1989)

There is little published research which disagrees with the premise that an empowered, autonomous student is more likely to engage in deep learning. Greaney and Rodd (2003) argue that teachers themselves are responsible for creating a learning culture within which the students feel empowered.

> 'Teaching becomes an empowering means of creating and supporting a learning culture in a school and much less a process of transmitting (centrally prescribed) information and skills' (Greaney and Rodd, 2003, p.79)

Hargreaves (2006) defines the learner who is involved in deep learning as being ‘an articulate, autonomous but collaborative learner, with high meta-cognitive control’ (Hargreaves, 2006, p.4) while West-Burnham and Coates (2005) advocate that deep learning occurs ‘when understanding is achieved’, and is necessary to ‘ensure success and personal authenticity’ (West-Burnham and Coates, 2005, p.38). The relationship between empowerment and learning is central to the areas investigated in my studies and the suggestion from both Hargreaves (2006) and Claxton (2004), that learning-talk was an important factor in meeting the personalised learning agenda, is a fundamental element of my research.

The premise of *this* research was to establish the need for every student to ‘take deliberate responsibility for learning’ (Mercer and Hodgkinson, 2008, p.14). But this suggests an understanding by the student of the role both they and the teacher need to play, for them to be able to jointly initiate this action. Early questions to the student focus-group regarding their understanding of the role of the student and the role of the teacher in the classroom described the following:

Students felt the job of the teacher was

> ‘to teach; to calm the class down and help them to learn; to teach new stuff every day; to educate and try to make friends with you; to help you with your life as well as your learning (*sic)*’

They expressed their own role as being ‘to learn and to behave’. (Students’ focus-group)

These basic interpretations of the role of the participants expressed more of an expectation than a definition. This investigation needed therefore to identify specific factors which would have to be present on both sides to enable the participants to gain a deeper understanding of the roles and responsibilities therein.

It emerged from the literature that there was an acknowledgement of the link between student voice, personalised learning, and deep learning. The arguments follow that in order for these processes to occur, students need to be given the opportunities to conduct relevant dialogues with each other and with the teacher.

If, as these theories have suggested, students can achieve deeper learning through talk, then this talk needs to be guided to more critical, higher order thinking. In other words it is not enough for the teacher merely to *enable* interaction to occur. The key question is whether the teacher is able to *control* the interaction, through purposeful interventions and specific questioning. This question emerged as fundamental to the work of a number of researchers of the time (Lucas and Greaney, 2003; Claxton, 2004; Smith 2003).

Claxton argued that a good learning environment is one which enables students to ask questions, and to know when and how to use their intuition and imagination in solving problems. Barnes (1976); Gardner (1995); Alexander (2008); Mercer (2008); and Hargreaves (2008) all commented on the importance of the teacher's role in facilitating purposeful interactions of this kind.

The theories examined so far suggest that deep learning is brought about through personalising students' learning. This in turn comes from an educational programme which facilitates collaborative learning through discussion and reflection; one which is guided by the teacher through specific activities. The following section examines what is meant by purposeful learning talk and why different types of talk enable students to learn.

3.3c Collaborative interactions and learning talk

Mercer and Hodgkinson wrote much about classroom talk, stating how, for the previous forty years, this had focused on how talk could help students to make sense of their learning (Mercer and Hodgkinson, 2008, p.*xi*). The extensive literature search for this thesis mainly supports these findings and expresses how contemporary research has started to redefine the significance of talk from 'individualistic, cognitive theories of learning' to more 'social, culturally located interpretations of learning' (Mercer and Hodgkinson, 2008, p.*xi*). Many of the theories involve definitions of different types of talk. Of fundamental importance however is the need for both students and teachers to understand the range of these communications, and it can be argued that there is a need therefore to establish the common elements of such conversations. Several researchers have offered definitions that could be attributed to a shared 'language of learning'. Mercer and Hodgkinson suggested that

> ‘It involves teachers developing their own awareness and skill in using talk, and helping their students to develop their own awareness and communicative effectiveness’ (Mercer and Hodgkinson, 2008, p.69)

It is acknowledged that for effective learning to take place there needs to be a shared framework of understanding between the teacher and the student. Solomon and Black, 2008 (cited in Mercer and Hodkinson, 2008) referred to this as a ‘joint frame of reference’ (Mercer and Hodgkinson, 2008, p.77), which is required to be able to make the necessary connections between new knowledge and existing understanding. They argued that students needed specific and directed discussion activities which ensured that the content of the dialogue promoted a greater understanding of knowledge and helped the students to make the necessary connections. They referred to a ‘common underlying approach’ (Mercer and Hodgkinson, 2008, p.57) and a ‘shared understanding’ (Mercer and Hodgkinson, 2008, p.64).

Mercer (1995) claimed that earlier research tended to suggest that learning occurred inside the head of the individual and that in the earlier part of the twentieth century, little importance was placed on talking and interaction. Such was the debate borne of Piaget and Vygotsky’s teaching referenced earlier in this chapter. More recent theorists have acknowledged the notion that language is a key aspect of the ‘means of constructing knowledge’ (Mercer, 1995, p.4)

Mercer described two important aspects of linking language with thought as being ‘the way we represent our thoughts to ourselves’ and how we share our ideas with others (Mercer, 1995, p.4). This was important for teachers to be aware of how important it was to articulate thoughts in order to make sense of them. Sometimes the learner may have thought they understood something until they were asked to explain it. Through trying to unpack an idea, to share it with others, the learning can became deeper and is more likely to become embedded. It was necessary to explore how this was demonstrated in the lessons being observed.

Mercer was also keen to share his findings of how children use talk both with a teacher and ‘in the absence of adult guidance’ (Mercer, 1995, p.7). However, as noted in several models for data collection in the literature searches, the focus was more on the *students*, than on how the *teacher* may have influenced the type of talk or interaction evidenced.

Another example of this is by Flanders (1960), who wrote that there was 'no research evidence to support the notion that an increase in student verbal participation per se improves learning' (Flanders, 1960, p14) but his model for closer investigation did not enable this theory to be defended as although he made references to teacher input, there was little examination of the impact of this upon the progress of the learner.

There was plenty of research into types of talk from students (Douglas Barnes, 1976; Mercer, 1995; Alexander, 2008; Mercer and Hodgkinson, 2008) and types of talk by teachers (Barnes, 1976; Mercer, 1995; Alexander, 2008; Claxton, 2004; James *et al*, 2006; and Mercer and Hodgkinson, 2008) but there was little literature which examined the connection between the two, an inequality that my research intended to address.

The theories which emerged from the literature highlighted various types of learning talk. In order to address the research questions it was necessary to classify each of the types of talk to which they referred. The literature described so far then, indicated the following foci for the data collection:

- Types of interaction between both student and student, and student and teacher;
- Opportunities for metacognition, reflection and making connections;
- Opportunities for collaborative learning – varied group sizes;
- The frequency and impact of questioning – both to and from student and teacher;
- The role of the teacher in facilitating various learning opportunities;
- The function of lesson/task structure with regard to types of learning.

Another requirement of the data collection, outlined in the second proposition defined in the Concept Map (Figure 4.1, p.85), was to discover a way of measuring learning talk. Two models have been highlighted so far which were to test this aim: Bloom's Taxonomy (Beirne and Velsor, 2012, p.22) and West Burnham and Coates's 'Models of Learning' (2005, p.35). The third method of measuring learning talk was to use the existing OFSTED criteria (Section 3.2a). The fourth and final model is described in Table 3.3 (p.63), and is described as the Four Classes of Communication Approach (Mercer and Hodgkinson, 2008, p.21).

The following three sections outline specific features of learning talk for identification, observation and analysis which match the foci listed above: student talk (section 3.4); teacher talk (section 3.5); and a section examining the student and the teacher (section 3.6) particularly in relation to the balance of responsibility for learning.

Each aspect of learning talk has been described below, to enable clear observation categories and meaningful analysis and pattern matching. The organisation of the Findings and Analysis chapters mirrors this distinction between student and teacher.

Maxwell highlighted the importance of ensuring that an analysis should have elements of both categorising and connecting strategies which 'need each other to provide a well-rounded account' (Maxwell, 2005, p.99). As the observations progressed, it was necessary to filter out those aspects which had little merit in supporting the aims of this research, and to focus on the more fundamental connections between the elements. The factors defining learning talk as defined by a range of research, and outlined throughout this chapter, were put into initial groups in preparation for the data collection. However the final classification of these elements was developed during and after the observations and is now expressed in the following categories: student talk, teacher talk, and balance of responsibility for learning. These have been represented in the Categorisation Chart (Figure 3.1) and also form the structure for this chapter.

The Observation Database, which was produced to record the data, reflected these classifications to enable the later examination of patterns, trends and relationships in the analysis. Each aspect of learning talk described below is accompanied by the relevant extract from the Observation Database to illustrate how each was recorded during the observations.

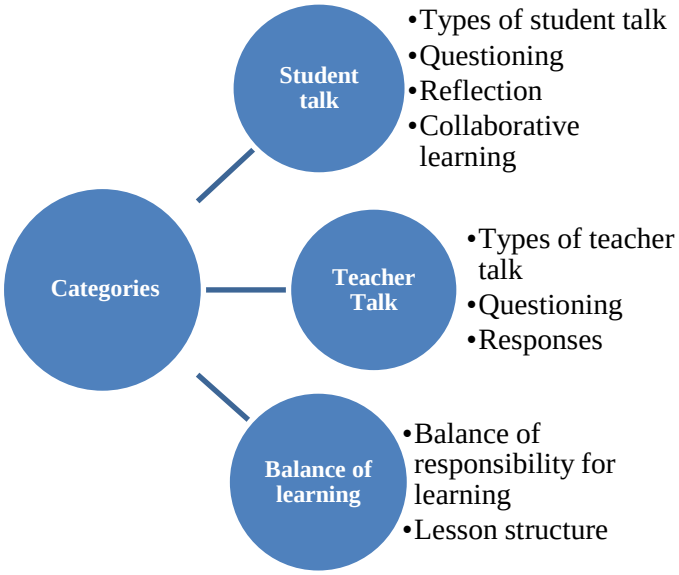


Figure 3.1: Categorisation Chart

Section 3.4: Specific features of learning talk for identification, observation and analysis - Student

Douglas Barnes (1976) suggested we must examine the use of language in the classroom as being more than just a tool for communicating. He asked us to examine 'how children use language in learning' particularly in terms of how they 'formulate knowledge and relate it to their own purposes and view of the world.' (Barnes, 1976, p.19). He also referred to the importance of language in allowing us to reflect (Barnes, 1976, p.20). He suggested that language – and ultimately interaction – helped us to develop, own and consequently 'remake' (Barnes, 1976, p.20) our thoughts. Although Barnes was writing in 1976, his theories still resonate with current research and are being referred to by many of those cited in this chapter, demonstrating not only that these theories are still relevant but that many of the aspects he recommended are still missing from current practice.

Considering the different ways in which children learn, Barnes (2008) stressed the importance of 'working on understanding' (Barnes, 2008, p.4). To cultivate understanding, students may need to re-think prior knowledge in order to see things in a new way and accept the new information. To help students do this, teachers can utilise a range of learning strategies such as writing, talking, drawing diagrams – but ostensibly the key aspect of accepting new knowledge was to try it out, to 'see how far a new idea will take us' (Barnes, 2008, p.5). If the 'construction of knowledge is essentially a social process' as

purported by Barnes (Barnes, 2008, p.8) then this led naturally to the construct that talk was an important way to gain new knowledge.

Another reference to the need for promoting 'the right kind of talk' (Alexander, 2008, p.10) is shown in Alexander's thoughts on dialogic teaching and the question he suggested all teachers ask when evaluating their own teaching: how we can use effective talk to 'help children think and learn even more effectively than they do?'(Alexander, 2008, p.10).

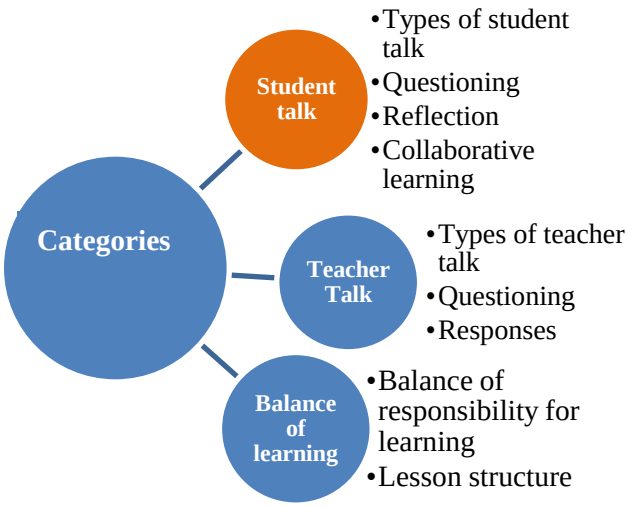


Figure 3.2: Categorisation Chart – Student Talk

This section is divided into the following parts:

3.4a Types of Student Talk 1: Exploratory and Presentational

3.4b Types of Student Talk 2: Dialogic talk

3.4c Student Questioning

3.4d Student Reflection

From the many different types of classroom talk researchers have described, two initial categorisations were suggested by Barnes (1976), Mercer (1995) and Mercer and Hodgkinson (2008), and are described as 'exploratory' and 'presentational' talk.

3.4a Types of Student Talk: Exploratory and Presentational

Each feature of talk to be observed was recorded as a heading in the Observation Database. This section of student talk highlighted six aspects, the first two being highlighted in Figure 3.3. In this chapter, each aspect of the Observation Database will be presented to demonstrate the development of the database. Section 4.5 describes the process of developing the database so that each of the characteristics and features, as described in this chapter, were finally placed in categories to enable the final analysis and pattern matching.

Exploratory talk	**Exploratory and presentational**
Presentational talk	
Bringing knowledge from earlier lesson	
Bringing existing knowledge	
Statement – student	
Whole class response	

Figure 3.3: Extract from Observation Database – Exploratory and Presentational (i)

Barnes's *(*Barnes, 2008, p.5) expression of 'exploratory and presentational talk' was of particular interest to this research. Much of the dialogue which appeared to go on in the lessons could be divided into these two areas. In any given lesson students may be required to learn through discovery and discussion of issues – as defined by 'exploratory talk'. Or they might be presenting information to others of what they have already learned – 'presentational talk'.

Exploratory talk

Barnes (1976) referred to the hesitant thinking aloud of pupils during collaborative discussions as 'exploratory talk' (Barnes, 1976, p.28). He suggested that the use of this unstructured talk was a means by which pupils could take an 'active part in learning' (Barnes, 1976, p.28). He used his research to illustrate this type of talk and on the specific occasion being referred to in the text the pupils were working without a teacher. This, he suggested, placed the learning strategies in the hands of the pupils (Barnes, 1976, p.29). Here the pupils not only chose the questions they wanted to ask, but also formed and

evaluated their own hypotheses. Barnes's opinion was that the more the learner was empowered to use his or her own language strategies through collaborative talk, the more they would be able to take 'an active part in the formulation of knowledge' (Barnes, 1976, p.30). However as Barnes pointed out this was only one form of learning, and collaborative work was only one classroom strategy for developing student talk.

Barnes suggested that children measure their 'degree of control over knowledge' (Barnes, 1976, p.108) through *exploratory* talk and that this use of language tends to disappear when the teacher is present. This had implications for this research in two ways. Firstly there was the need to investigate the types of language used when children were working in pairs or groups with, and without, the teacher present; secondly whether my presence as researcher would limit their exploratory talk. Barnes commented on one such experience in his research where the students were 'more aware of the voice recorder and therefore tended to be less exploratory' (Barnes, 1976, p.109); which in turn asked the question as to the validity of such a research tool in analysing classroom discourse. This is discussed in a later chapter.

Barnes's research showed that children risked 'inexplicitness, confusion and dead-ends' (Barnes, 1976, p.109) when they trusted each other and were working in collaboration with each other towards a common goal. He felt this was where the real learning took place rather than when competing for the teacher's approval through 'presentational talk' (Barnes, 1976).

Barnes questioned why exploratory talk was not found so much in classrooms in his research. My research aimed to examine if this was still the case in the research school. An article in The Times Educational Supplement (Shaw, 2012) suggested that some teachers were 'wary of allowing pupils to talk to each other' the danger being that pupils may 'veer off topic the moment they have been given permission to chat' (Shaw, 2012, p.3). The implication of this article echoed Barnes' research in that the teacher needed to give clear and defined opportunities to enable the pupils to achieve the type of talk that was supportive to their learning.

Presentational talk

Presentational talk was, according to Barnes, the more 'formal, completed presentation for a teacher's approval' (Barnes, 1976, p.108). This concept was associated with the idea that we *present* a view of ourselves that we wish to be seen and that there is another view of ourselves that we only share with people we know and trust. Through this initial *presenting* we are also exploring how others behave and who in the group thinks and acts like us. This social behaviour was, according to Watson and Potter (Barnes, 1976) the 'process in which the self-boundaries of each participant remain intact, and in which each responds from the outside to a façade offered by the other.' (Barnes, 1976, p.110).

It was the teacher's job therefore to move students on to the next stage – that of 'sharing' (Barnes, 1976, p.110) where they could break down these barriers and genuinely collaborate to extend their learning. This connection between student and teacher was examined during the analysis, and the findings are referred to in the Analysis and Findings chapter.

Barnes spent some time discussing the relationship between *talking* and the emotional well-being of the students; how trust and feeling *safe* in the classroom enabled greater learning-talk to occur. When students were unsure there was a tendency to move into the type of presentational talk that helped them prove their worth. This talk was not as supportive of their learning as the exploratory talk which allowed them to try out thoughts and ideas in the knowledge that they would not be laughed at or criticised. This was echoed in social conversational rules and favoured the confident rather than the shy. Hence the important, and finely balanced, role of the teacher in ensuring students felt comfortable to take risks and in giving them opportunities to work collaboratively. Watson and Potter (Barnes, 1976) described this as gaining a perception of our working partners as to whether or not they were 'threatening critics, ready to judge us or show up our inadequacies' (Barnes, 1976, p.110).

The next highlighted aspect examines how learners use existing knowledge to frame new learning.

Exploratory talk	**Exploratory and presentational**
Presentational talk	
Bringing knowledge from earlier lesson	
Bringing existing knowledge	
Statement – student	
Whole class response	

Figure 3.4: Extract from Observation Database – Exploratory and Presentational (ii)

One of the features of learning researchers defined was where the learner is 'making connections' (West-Burnham and Coates, 2005, p.129) - either through using knowledge brought from an earlier lesson, or exposing existing knowledge. The National Institute of Education claimed that learning resulted from students using what they already know to 'give meaning to what the teacher told them' (Mercer and Hodgkinson, 2008, p.152). Burnham and Coates claimed that the 'deeper the connections, the deeper the learning' (Burnham and Coates, 2005, p.129) which also has implications for the structure of the lesson and the nature of the learning opportunities provided by the teacher. This link between cognitive and social experiences, defined as such by Mercer and Hodgkinson (2008) was an important one and relied on the teacher providing opportunities for focused interactions to take place such as planned collaborative activities. This is described in the Observation Database as outlined in Figure 3.4.

The final two aspects for this section of Student talk are those which have the potential to halt exploratory talk in the same manner that a closed question has the potential to stop a thought from developing fully, and is expressed in Figure 3.5 below.

Exploratory talk	**Exploratory and presentational**
Presentational talk	
Bringing knowledge from earlier lesson	
Bringing existing knowledge	
Statement – student	
Whole class response	

Figure 3.5: Extract from Observation Database – Exploratory and Presentational (iii)

Contrary to the interactive approach of exploratory and presentational talk is that termed 'non-interactive communication' (Mercer and Hodgkinson, 2008, pp.20-21). This can be illustrated by imagining a teacher's question which elicits a simple answer from a student but no more. Rather than developing their answer through extended questioning or discussion, the teacher simply moves on. Instead of the student having the opportunity to explore ideas, the teacher stops the potential dialogue to move onto the next question perhaps, or to review the points being made. This may reduce the chances of a student being able to make his or her own connections as any understanding of the relationships between concepts would be those in the teacher's sphere of understanding rather than the students'. As such this may have an impact on the type of learning constructed. Similarly the teacher may ask a question to the whole class, gaining one or two responses in return. Those students who have joined in have had the opportunity to articulate their thoughts, but the majority of the class would just be listening to the exchanges. Once again there is a lost opportunity to make the necessary connections for deeper learning.

3.4b Types of Student Talk 2: Dialogic talk

Alexander defined the *dialogic classroom* (Alexander, 2008) as showing elements of both teacher talk and student talk and those types of talk expected by the *dialogic* student are expressed in Figure 3.6 below.

Talk	**Student talk**
Narrate	
Explain	
Instruct	
Receive, act and build on questions	
Analyse and solve problems	
Speculate and imagine	
Explore and evaluate	
Discuss	
Argue, reason and justify	
Negotiate	
Social chat	
Answer direct question with information	

Figure 3.6: Learning Talk (Mercer and Hodgkinson, 2008, p.105)

Extract from Observation Database – Student Talk

Dialogic talk was advanced by several researchers at the time, and its definitions appeared to enhance Barnes's 'exploratory talk'. It is illustrated in this section by a set of descriptors which were transcribed to the Observation Database for later analysis. The first set of descriptors can be seen in Figure 3.6.

A further set of descriptors were suggested by Mercer and Hodgkinson (2008) who summarised their research findings in terms of what they believed were necessary for successful learning. The types of talk they expected to see were

- social talk;
- exploratory talk;
- presentational talk;
- meta-talk;
- critical talk.

They suggested that each of these were necessary both ‘independently and concurrently in a classroom focused on making and sharing meaning’ (Mercer and Hodgkinson, 2008, p.52).

Further evidence of a *dialogic* classroom was described as one where students could ‘talk themselves into understanding’ (Mercer and Hodgkinson, 2008, p.74). Some of the elements of this talk were ‘posing questions; exploring and evaluating; negotiating and justifying solutions to problems’ (Mercer and Hodgkinson, 2008, p.74).

The focus of the observations was to record the usage of each of these types of talk, and the later analysis to examine relationships between each of these elements, when they occurred within the structure of the lesson, and the initiation required from the teacher to produce each one.

Apparent in each of the descriptions of the dialogic classroom was the need for the students to move their learning forward through questioning and reflection.

3.4c Student Questioning

Mercer and Hodgkinson (2008) suggested that it was part of the teacher’s job to encourage a ‘questioning habit of mind’ (Mercer, 2008, p.14). Claxton (2004, p.2) talked about a good learning environment being one which enabled students to ask questions and to know when and how to use their intuition and imagination in solving problems. Barnes (1976); Alexander (2008); Mercer (2008); Hargreaves (2008) all commented on the importance of the teacher’s role in facilitating purposeful interactions of this kind.

Barnes represented the complexities of a successful communication system in the diagram below (Figure 3.7, p.55) which indicated the various aspects needed to ‘set up classroom relationships and discourse’ (Barnes, 1976, p.33). Indicative within this was how the relationship between the teacher and the student impacted upon how the students perceived, interpreted and accepted such a system.

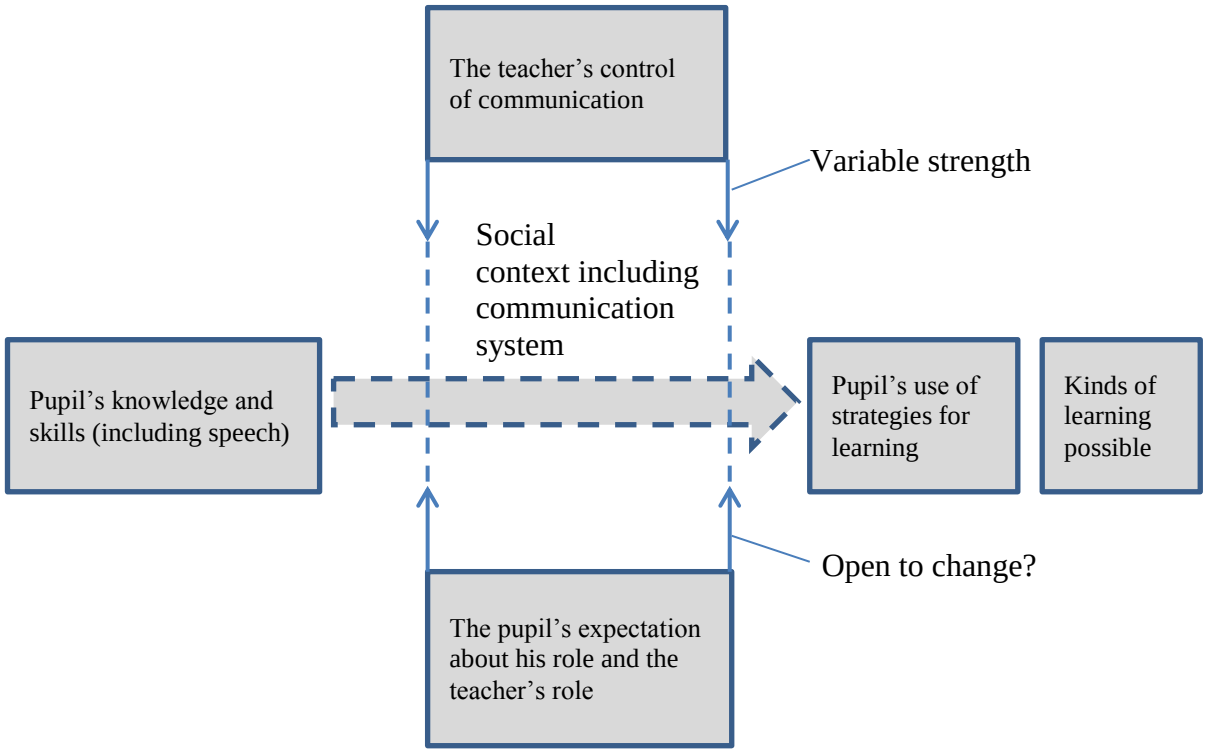


Figure 3.7: Diagram of classroom relationships and discourse (Barnes, 1976, p.32)

The diagram outlined how difficult it was to find a common understanding between teacher and student regarding how learning could take place. The student came to the lesson with a certain 'language' of communication and understanding of the world in which they lived. The teacher provided the opportunities for learning, but these were dependent on the 'patterns of communication' (centre of the diagram) which occurred. The strategies pupils were able to use were 'filtered through this system' of communication (block arrow). The teacher's aims in setting up a successful communication system was based on the relationships formed in the classroom and types of opportunities provided for learning talk, and was determined by the 'history of mutual interpretation' which had grown between the members of that classroom (Barnes, 1976, pp.32-33). The teacher's influence upon how successfully the pupils were able to interact was great, and consequently could impact heavily on the chance for them to become involved in their own learning.

Barnes' research described the importance of pupils asking questions to 'try out' (Barnes, 2008, p.21) understanding and further embed the new knowledge into existing experiences and perceptions. He explained that the pupil who asks questions would 'gain more from

lessons than the child who listens passively' (Barnes, 1976, p.55). He also put forward that conventional lessons often lacked this opportunity whereas the teacher should be enabling and facilitating pupil questioning to enhance their learning power.

The research of Barnes (1976), Mercer (1995) and Alexander (2008) led to the construct that if pupils were enabled to collaborate in their discussions and take part in exploratory talk, they were more likely to be able to ask questions – and the act of asking questions would take them into deeper learning experiences. Alexander's studies highlighted the difference between classroom talk in Europe as being mainly cognitive, whereas in Britain it tended towards the 'social and affective – about developing children's confidence rather than developing their thinking' (Alexander, 2008, p.19).

When the pupils felt safe and able to take risks, displaying the trust referred to by Barnes (1976, p.109) they were more likely to feel able to ask questions. These questions may be to the teacher or to each other, each choice supporting a different outcome: for clarification, understanding, knowledge, explanation – or the specifics of how to do something (Figure 3.8).

For clarification	**Student questioning**
For understanding	
About the lesson	
For knowledge	
To guess an answer	

Figure 3.8: Extract from Observation Database – questioning

Alexander (2008) suggested that student questioning was an important indicator of the presence of dialogic teaching (Alexander, 2008, p.42) and in successful dialogic classrooms more pupils were 'taking the initiative and commenting or asking their own questions' (Alexander, 2008, p.47).

Burnham and Coates (2005) defined seven key dimensions which they considered were motivators for learning. 'Critical curiosity' (Burnham and Coates, 2005, p.138) was one of

these. Young children were known to be constantly asking questions – why, where, how? These do not come as naturally to older children for a variety of reasons, but teachers should create opportunities for students to rediscover this curiosity. Lucas (2001) suggested that you can 're-programme your brain to be curious' (Lucas, 2001, p.37). He also suggested that the ability to ask questions was one of the key 'Learning to Learn' skills (Lucas, 2001, p.103). It helped students to become engaged, inspired a desire to *know,* stimulated reflection, and allowed the learner to see the bigger picture – the context within which they were learning.

James *et al* suggested that pupils could be 'trained' to ask questions 'and to reflect on answers' (James *et al*, 2006, p.10). This offered implications for the teacher to give thinking time to ensure deeper frames of reference. The concept of pupil questioning could enable students to be 'autonomous' and to be able to 'take responsibility for their own learning.' (James *et al*, 2006, p.1)

3.4d Student Reflection

Barnes (Barnes, 2008) claimed that active involvement was vital for learning, and particularly that learners should be 'reflective and critical' (Mercer and Hodgkinson, 2008, p.14). He referred to reflection as 'taking responsibility for finding connections and examples, asking questions, reinterpreting experience' (Mercer and Hodgkinson, 2008, p.15).

The Accelerated Learning approach to planning also suggested that 'the brain likes to make connections' (Lucas, 2003, p.18) and that an understanding of how the brain made sense of those connections would, in turn, improve learning. So it made sense to fulfil the need to make connections, thus making learning relevant, by encouraging discussion activities.

Lucas (2001) described both the science and the craft of reflecting. He acknowledged that much of the time reflection occurred without any conscious instruction: to make sense of a situation, classifying it and placing it in existing patterns. In this way, our brain filled in the gaps to create order and understanding. However, when faced with an unfamiliar situation or new knowledge it was more important to have time – and the correct environment – in which to reflect and allow the brain to make the necessary connections: making the

unfamiliar familiar. Lucas suggested that ‘the more you can learn from what you have done, the more you will be able to adapt and change’ (Lucas, 2001, p.198). He talked of reducing barriers to being able to reflect in terms of feeling it was acceptable to make mistakes. The teacher’s role here was once again vital if the action of reflection was to be a conscious decision: ‘Effective reflection requires you to be open and exploratory’ (Lucas, 2001, p.199). This required teachers to design a specific time dedicated to being able to reflect; an environment where it was comfortable to do so, without fear of failure; and a frequency of reflection opportunities that made it become habitual (Lucas, 2001, p.204).

Mercer described two important aspects of linking language with thought, as being ‘the way we represent our thoughts to ourselves’ and how we share our ideas with others (Mercer, 1995, p.4). It was through trying to articulate ones thoughts to others that forced the learning to become deeper and thus more likely to become embedded.

West-Burnham and Coates (2005) claimed that ‘reflection is the key to students becoming life-long learners’ (West-Burnham and Coates, 2005, p.122). This was evidenced in much guidance to, and literature about, the adult learner – where reflective practice was encouraged.

> ‘A reflective diary helps researchers get the most out of their various activities, rather than just attending and assimilating’
>
> (Anglia Ruskin University, 2008)

An aspect of data collection therefore was to examine how many opportunities were given to young students in the classroom to reflect on their learning. The database for this research listed the foci for observing reflection in the following table (Figure 3.9).

Reflection: making connections	**Reflection**
Reflection: examples	
Reflection: reinterpreting experience	

Figure 3.9: Extract from Observation Database – reflection

What was clear through the descriptions of different types of student talk was the need for them to have opportunities to engage in dialogue with both their peers and the teacher. Collaborative learning activities were referred to by Vygotsky, Barnes and the more contemporary researchers (such as Claxton, 2004 and Hargreaves, 2004) as being vital for such talk to be able to take place.

3.4e Collaborative learning and Classroom interaction

Although Vygotsky and others (such as Bruner, 1980s) ascribed to the notion that 'learning is a process of interaction' (Pritchard, 2005, p.99) it is only relatively recently that collaborative learning has re-emerged as a favourable teaching strategy (Gornall *et al*, 2005; Pritchard, 2005; Smith, 2003). More traditional classroom teachers still perceive the silent classroom as being the most effective learning environment, as was evident from the following references – the first from Barnes (1976). He referred to the difficulties in developing student talk because of the 'rigid and formalised way teachers required students to engage in dialogue' (Mercer, 2008, p.*xi*). His studies highlighted the approach of many teachers at the time who saw themselves 'primarily as teachers of a subject' rather than of children, and of 'commanding his pupils' obedience' (Barnes, 1976, p.153). With regard to methods of learning in the classroom, this reference is pertinent:

> 'We notice that although there is only one adult in the room, she seems to be talking more than all the children together. She is the centre of everybody's attention.' (Barnes, 1976, p.11)

What was also clear from the literature search was that the opportunity for students to articulate and question helped to embed the learning and created a relevancy not always apparent in teacher-led activities. James *et al* (2006) suggested that collaborative working was 'not an optional extra but essential for learning' (James *et al*, 2006, p.51). They emphasised the importance of group work, suggesting that joint learning could occur in the heads of more than one person: 'a division of labour among people with different roles'. (James *et al*, 2006, p.51).

Alexander also referred to the profound importance of classroom talk and how the 'character and context needed somehow to be transformed' (Alexander, 2008, p.17). Hargreaves, in his 'The Deeps in Action' series (Hargreaves, 2008) focused on how teachers should think about how to 'change the nature of talk among staff and students to

increase the focus on learning' (Hargreaves, 2008, p.29). Mercer and Dawes talked about a more dialogic approach to teaching and learning 'than is usually found in schools' (Mercer, 2008, p.69).This indicated that almost forty years on from Barnes' initial research and the 1975 Bullock Report with its reference to 'language across the curriculum' (Alexander, 2008, p.17), talk in classrooms was still not as forward thinking as some theorists and researchers thought it should be.

There was an imperative to establish whether this was also the case in the research school and the impact of collaborative learning both as a positive and a negative feature. The role of the teacher in offering these opportunities is acknowledged, and their own contributions in terms of types of talk were described in the same manner as those of the students. The argument which follows, however, is the need to create connections between the two types of talk in order to examine impact.

Section 3.5: Specific features of learning talk for identification, observation and analysis - Teacher

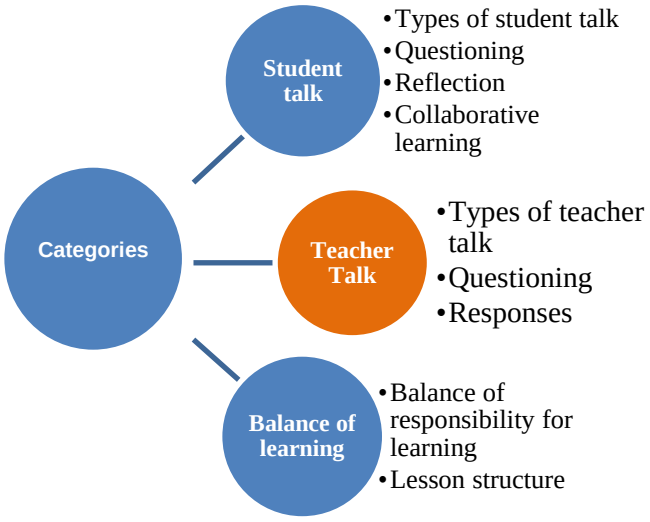


Figure 3.10: Categorisation Chart – Teacher Talk

Barnes (1976) acknowledged the important role the teacher had to play in ensuring that his or her influences on pupils' learning-talk were positive. He demonstrated how the teacher could affect classroom interaction by being a part of it. One such way was through careful questioning which could impact upon higher order thinking and drill deeper into a concept or idea (Barnes, 1976, p.72).

Barnes highlighted the fact that where a well pointed question could lead to depth of thought, such a question may also inhibit thought and restrict pupil dialogue. The result was the difference between exploratory and presentational talk and it was clear how carefully the teacher had to react to specific situations to ensure effective learning (Barnes, 1976, p.77). A more teacher-dominated approach may have led to the pupil 'aiming at answers to gain approval' rather than using language to 'reshape knowledge' (Barnes, 1976, p.78). It was a fine balance, he claimed, between restricting active learning and leaving pupils to their own devices. The teacher had a clear responsibility to activate the required learning style through the nature of his or her own teacher-talk.

This section is divided into the following parts:

3.5a Types of Teacher Talk: Dialogic Teaching

3.5b Types of Teacher Talk 2

3.5c Teacher questioning

Questioning

Types of questions

3.5d Teacher responses

Types of praise

Extended dialogue and dialogic questioning

3.5a Types of teacher talk 1: Dialogic Teaching

Many of the different ways of categorising teacher talk were drawn together by examining Alexander's (2008) dialogic teaching characteristics. He outlined the six indicators of the presence of dialogic teaching as being

- Teacher-pupil interaction;
- Pupil-pupil interaction;
- Teacher-pupil one-to-one monitoring;
- Questioning;
- Responses to questioning;
- Feedback on responses.

Alexander, 2008, pp.42-44

The precept of dialogic teaching was that language and thought were ‘intimately related’ (Alexander, 2008, p.10) and that the elements of classroom talk were the ‘foundations of learning’ (Alexander, 2008, p.10). This concept was developed to describe how each of the types of interaction, and the manner in which the teacher facilitated the interactions, were closely interlinked and when successful led to effective learning.

This *dialogic* pedagogy was also referred to by Mercer and Hodgkinson as a way to advance the listening power between teacher and student and to develop ‘higher order questioning and feedback strategies’ (Mercer and Hodgkinson, 2008, p.133). The organisation of the classroom could facilitate dialogic teaching in different varieties of groupings: ‘whole class, group-based and individual interactions between teachers and students’ (Mercer and Hodgkinson, 2008, p.133).

Whole class teaching	**Dialogic teaching**
Collective group work: teacher led	
Collaborative group work: student led	
One-to-one (teacher and student)	
One-to-one (student pairs)	

Figure 3.11: Extract from Observation Database – dialogic teaching

The fact that varied student groupings positively enabled learning talk was described by several practitioners (Barnes, 1976; Mercer, 1995; Alexander, 2008; Mercer and Hodgkinson, 2008). A clear definition of organisational structures in the classroom was given by Alexander, (Alexander, 2008, p.40; Mercer and Hodgkinson, 2008, p.102) and was referred to as ‘organising interaction’ (Mercer and Hodgkinson, 2008, p.102).

James *et al* (2006) suggested that collaborative working was ‘not an optional extra but essential for learning’ (James *et al*, 2006, p.51). They emphasised the importance of group work, defining it as ‘activity theory’ (James *et al*, 2006, p.51) and locating it within the socio-cultural perspective of learning and teaching. Claxton claimed ‘when teachers

change their way of talking with their students about learning, those students' attitudes can change' (Claxton, 2004, p.2).

The importance of the teacher planning for collaborative tasks was demonstrated through the lesson observation data analysis where the relationships between learning talk and paired or group discussion was evident (Chapters 6 and 7).

3.5b Types of Teacher Talk 2

Scott's (2008, p.21) characterisation of dialogic and authoritative interactions presented the following features.

Table 3.3: Four classes of communication approach

	Interactive	Non-interactive
DIALOGIC	A: Interactive/Dialogic	B: Non-interactive/Dialogic
AUTHORITATIVE	C: Interactive/Authoritative	D: Non-interactive/ Authoritative

(Mercer and Hodgkinson 2008, p.21)

The distinction between authoritative and dialogic talk could be described as the difference between factual teaching (authoritative) and a communication similar to Barnes' exploratory talk (dialogic) as defined earlier in this chapter. Dialogic talk was described as having several distinctive features and principles, some of which are outlined below. The main concept being that the speaker was encouraged to 'try out ideas' (Mercer and Hodgkinson, 2008, p.21) and points of view would be shared equally between teacher and pupil.

Simplistically stated the *dialogic* approach suggested a range of view-points being discussed in the classroom, whereas *authoritative* instruction advocated a single idea presented by the teacher. *Interactive* contrasted with *non-interactive* described joint exploration between teacher and student compared to that which was purely teacher focused.

The *interactive/dialogic* (A) therefore represented teachers and students exploring ideas together, whereas the *non-interactive/dialogic* (B) approach favoured the teacher reviewing different points of view. The *interactive/authoritative* (C) was more teacher-led. The teacher focused on just one point of view, and 'leads students through a question and answer routine' (Mercer and Hodgkinson, 2008, p.21) to consolidate that point of view. *Non-interactive/authoritative* (D) was a description of the teacher presenting a single point of view.

Alexander described *dialogic* teaching as being that by which 'understanding is fostered through discussion and collaboration' (Alexander, 2008, p.23). He referred to an analysis of dialogic inquiry by Gordon Wells (Alexander, 2008, p.23) as being similar to an updated version of Vygotsky's ideas. Vygotsky maintained that collaborative classroom interaction helped to develop 'new ways of thinking' (Mercer and Hodgkinson, 2008, p.134).

The dynamics of interaction in the classroom have been discussed by various theorists and described in a variety of terms. Bruner's 'mutualist and dialectical pedagogy' described an approach which benefited from the discussion found through group work (Alexander, 2008, p.23). Mercer's 'inter-thinking' referred to a 'reciprocal process' (Alexander, 2008, p. 23) where notions were developed by sharing and building on each other's ideas.

Alexander (2008) explained that teaching which was 'dialogic rather than transmissive' (Mercer and Hodgkinson, 2008, p.105) was required if pupils were to be able to engage in interactions that developed their learning and understanding. Mercer and Hodgkinson described five principles of *dialogic* talk. *'Collective'* approaches were seen when both teachers and pupils 'address learning tasks together' (Mercer and Hodgkinson, 2008, p.105). *'Reciprocal'* tasks required teachers and pupils to listen, share ideas and consider alternative viewpoints. Pupils sharing ideas freely in an environment where they were not afraid to make mistakes and could support each other's learning and accepting of new ideas, was termed *'supportive'*. The *'cumulative'* approach was the fourth principle and was described as that which enabled teacher and pupil to build on each other's ideas, linking them into 'coherent lines of thinking and enquiry' (Mercer and Hodgkinson, 2008, p.105). The fifth and final principle was termed *'purposeful'* and described the approach where the teacher fully controlled the talk to meet specific learning outcomes.

Solomon and Black (2008) referred to *dialogic* interactions as being those which 'enable some pupils to talk themselves into understanding' (Solomon and Black, 2008, p.74). They suggested that too much teacher control of the interactions in the classroom might lead to a more passive response from the students. The role of the teacher in facilitating purposeful learning dialogue was important therefore. Barnes (Barnes, 2008) pointed out that those teachers whose intention was to transmit 'authoritative knowledge' tended to restrict the students from 'exploring new ideas' (Barnes, 2008, p.77) and thus stifled the process of developing knowledge through talk. This, Barnes speculated, stopped the learners from 'taking ownership of their knowledge' thus inhibiting the development of a 'deeper understanding of what they have already partly grasped' (Mercer and Hodgkinson, 2008, p.79)

A key element in facilitating the type of student talk that fostered understanding was that of planned questioning. Much could be found about questioning: Alexander, 2008; Lucas, 2001; Mercer, 1995; Mercer and Hodgkinson, 2008; James *et al*, 2006. Wells and Ball (2008, pp.167-183) thought that the teacher had an important role to play with regard to the questioning of pupils in order to increase participation and engagement.

3.5c Teacher Questioning

Questioning

Good teacher questioning was considered vital to good learning (James *et al*, 2006, p.28). Alexander stated that questions were 'far and away the most dominant form of teacher talk' (Alexander, 2008, p.49). James *et al* suggested that the most commonly used type of questioning was for understanding and was present in the more superficial learning situations (James *et al*, 2006, p.28). Teachers also used questioning to encourage students to articulate their understanding, thus making their thinking more explicit and helping to embed the learning. Deeper learning was drawn out through higher order questioning. Questions which stimulated emotions, encouraged the forming of attitudes, and enabled the sharing of values all helped students to remember their learning. (James *et al*, 2006, p.28)

James *et al* (2006) cited research into teachers' views of the importance of questioning. Questioning encouraged student participation and student interaction. In order of importance (according to the participants) they listed:

- ‘Encouraging thought, understanding of ideas;
- Checking understanding;
- Gaining attention, moving learning on to a specific point;
- Review, revision, recall, reinforcement’.

James *et al* (2006, p.28)

Mercer (1995) discussed how both the type of question and the nature of its delivery could elicit different responses from students. He cited the commonly used *initiation-feedback-response* (IRF) which is discussed in more depth in a later section of this chapter, as being classic ‘teacher-talk’ (Mercer, 1995, p.31) and added the frequently used questions for monitoring understanding to this list. The need for questioning to be part of the teacher’s language to produce effective learning was highlighted. He explored how questions formed part of the context of the teacher’s interaction repertoire and impacted on guiding the students’ learning. It was analysis within this context that he cited as being significant in evaluating the ‘use of questions as techniques for guiding the construction of knowledge’ (Mercer, 1995, p.31). The Findings and Analysis chapters describe the links made between forms of learning talk and the types of both lower level questions, designed for recall and description of facts (as described in Bloom’s Taxonomy), and those designed to elicit higher order thinking.

James *et al* (2006) explained that in their research they found some common errors in teacher questioning, including teachers asking too many questions at once, not giving enough thinking time, going to the same people to answer the questions and not encouraging students to listen to each other. Mercer (1995) examined the controversy in educational research of using questions to guide the ‘construction of knowledge’. He cited Wood, who described the restrictive and limiting nature of teacher’s questions inhibiting the natural direction of classroom discussion as they often required ‘short, factual answers’ (Mercer, 1995, p.28). He described the students being confused about the ‘main focus of their learning’ through worrying about giving the ‘right’ answer thus restricting the ability to make the necessary connections and discoveries of an autonomous learner.

Alexander (2008) also cited the importance of extended questioning, where the teacher continues to probe one student with a sustained dialogue, but stated that in his research

‘this occurred in just over 11% of the questioning exchanges’ (Alexander, 2008, p. 16). Nystrand *et al*, 1997 (cited in Mercer and Hodgkinson, 2008) described the success of teacher feedback when the teacher listened to the student’s answer and shaped further ‘uptake’ questions in response. Alexander’s research into uptake questions suggested that these occurred in ‘only 4% of the teaching exchanges and 43% of the teachers did not use any such moves.’ (Alexander, 2008, p.16). He continued to express concern that it was rare to see teachers’ questions support students to ‘more complete or elaborate ideas.’ (Alexander, 2008, p.16).

Authentic	**Types of question 1**
Test	
Open	
Closed / other	
Leading	**Types of question 2**
Narrow	
Discursive	
Clear	
Confused	
Recall	**Types of question 3**
Elicit	
Check	
Probe	
Instruct	
Develop	
Manage	

Figure 3.12: Extract from Observation Database – types of teacher questions

Types of Questions

The list in the Observation Database, Figure 3.12, was taken directly from Alexander’s (2008) examination of the importance of questioning in the dialogic classroom. He additionally argued that although we can frame questions in a variety of ways to determine a specific outcome, what was just as important were children’s answers and how the

teacher responded to these. This case is developed in the 'Teacher Responses' section later in this chapter.

'Authentic' questions were described as those where the teacher had no intended answer in mind. Alexander (2008) referred to authentic questions as those which fitted into the dialogic concept in that they were borne from a desire to ask the students 'what they think and know' Alexander (2008, p.15). They were in contrast to 'test' questions which had clear expectations of the answers.

Alexander (2008) referred to research carried out by Galton and Simon in the 1970s which highlighted the issues of the low cognitive demand linked to closed questioning. Hargreaves' references to deep and shallow learning also highlighted the requirements for deeper, open questioning which challenged students to think for themselves and make connections. Alexander (2008) uncovered the trend that in his research 'open questions made up just 10% of the questioning exchanges' (Alexander, 2008, p.16).

Coupled with the types of question the teachers chose to ask, was the manner of their delivery. Challenging, stretching questions were more successful when the students were given 'thinking' time before they were expected to respond (Mercer and Hodgkinson, 2008, p.136). Mercer (1995) reflected on the propensity for teachers to leave short silences before answers were taken where longer pauses would 'encourage a much higher rate of response' (Mercer, 1995, p.28).

3.5d Teacher Responses

How the teacher responded to the students' answers was as important as the questions they asked. Mercer and Hodgkinson cited Nystrand's (1997) research as highlighting the 'low-level evaluation' in teacher feedback (Mercer and Hodgkinson, 2008, p.142). The link between high-quality feedback and effective learning is referred to in chapter 8. It was an OFSTED requirement that

> 'teachers improve the quality of learning by systematically and effectively checking pupils' understanding in lessons, and making appropriate interventions' (OFSTED 2010).

It also featured as one of the teacher standards: ‘Provide timely, accurate and constructive feedback on learners' attainment, progress and areas for development.’ (TDA, 2007). In the intervening years this became more stringent as the 2012 OFSTED expectation required outstanding teachers to ensure that

> ‘All pupils understand how to improve their learning as a result of frequent, detailed and accurate feedback from teacher, following assessment of their learning.’ (OFSTED, 2012)

Further elements added to the Observation Database were generated from Alexander’s discussion about reciprocity. Mercer and Hodgkinson (2008) defined this as being concerned with ‘conduct and ethos of classroom talk’ Mercer and Hodgkinson (2008, p.111). Reciprocal teaching, as defined by Alexander (2008) depicted four strategies:

> ‘questioning to provoke discussion; clarifying to tackle problems in understanding; summarising what has been learned so far before discussion moves on; and predicting the information which will follow’ (Alexander, 2008, p.24)

Mercer and Hodgkinson’s description of the outcome of planned reciprocal teaching displayed the fact that students talked ‘with and to each other, not back to T [teacher].’ Mercer and Hodgkinson (2008, p.158).

Types of Praise

International research showed differences between continental and British teaching, particularly with regard to interactions between teacher and student. Alexander (2008) commented on such research, stating that in Europe ‘wrong answers are not glossed over but are treated as stepping-stones to understanding’ (Alexander, 2008, p.20). Other differences highlighted referred to the British (and American) tendency to praise ‘regardless of its appropriateness of quality so as not to discourage the child’ (Alexander, 2008, p.20).

When praise was about the person it could ‘make pupils feel good’ but did not necessarily move their learning forward (James *et al*, 2006, p.11). To make an impact it was desirable to be specific about the learning, rather than making a generalised comment, and to address the individual rather than a group. (James *et al*, 2006, p.34).

The Observation Database for *this* category was created after the first set of observations and was based on what was observed, unlike the others which were devised during the initial literature searches. Much of the context for the classifications had come from Alexander's (2008) descriptions of dialogic teaching, and the terms that were chosen had been referred to by the researchers cited in this thesis. However, there were not as many solid classifications in the literature for this aspect as there were with some of the other elements that formed the database. Hence the need to form the classifications through observed practice.

Acknowledgement	**Types of praise**
Non-verbal	
Repetition for reinforcement	
Platitude – good, excellent etc.	
Wrong but good for trying	
Addition to, or clarification or explanation of answer	
Asking a question to develop answer	
Confirmation – e.g. 'exactly'	
Writing on board	

Figure 3.13: Extract from Observation Database – types of praise

Extended dialogue and dialogic questioning

Mercer admitted to being 'sceptical of the value of studying *questions*' (Mercer, 1995, p.29) as set apart from the rest of the interaction. It was important to see the whole interaction between student/s and teacher where there were a variety of possible uptake questions, follow-up discussion, and evaluation of the answers received. These in turn would lead to extended responses from students and impact upon the learners' experience. Consequently a range of types of questions and teacher responses have been listed in the Observation Database to analyse the contextual relationships they produce.

As outlined earlier Alexander believed that the key to developing student answers was to plan the responses carefully. He referred to uptake questions as a way to connect with the students and create a conversation with each point building on the next. This gave value to the student and credence to the answer, even if wrong, as the conversation could examine the thought further and ultimately lead to the right answer. He stated that 'authentic questions' in his study did not 'invariably promote learning' if the teacher failed to further engage with the students. (Alexander, 2008, p.25)

Flanders referred to his own research results which suggested that students learn better when teachers 'challenge student ideas' (Flanders, 1960, p.14). He opines that 'merely increasing student participation by asking questions is not enough' (Flanders, 1960, p.14) implying perhaps that the dialogue required further development following on from the question, with the teacher not questioning simply to ensure the student contributes to the discussion.

In a classroom where the student was concerned about having to give one answer – a right answer – there was a danger of developing a 'state of compliance and dependence' (West-Burnham and Coates, 2005, p.36). Where the student knew there was the potential for discussion and development he or she moved away from shallow learning to the deeper learning that promoted understanding and was therefore more likely to become an autonomous learner. When there was understanding, it went 'beyond possessing knowledge, but enabled [the learner] to do certain things with that knowledge' (West-Burnham and Coates, 2005, p.37).

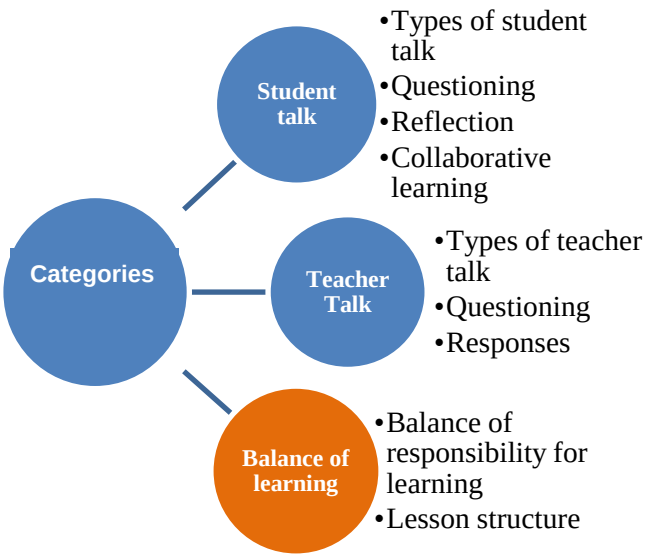


Figure 3.14: Categorisation Chart – Balance of responsibility for learning and control of IRF

Section 3.6: - Specific features of learning talk chosen for identification, observation and analysis – student and teacher

This section is divided into the following parts:

3.6a Balance of responsibility for learning

3.6b Lesson structure

3.6a Balance of responsibility for learning

Mercer and Hodgkinson (2008) elaborated on the commonly termed teacher-student interaction cycle of Initiation, Response and Feedback (IRF) (Mercer and Hodgkinson, 2008, p.137). Each of these aspects of interaction in observation indicated the level to which a teacher was offering opportunities to develop independent thought and deeper learning.

The main purpose of this type of teaching was for the teacher to ask a question or *initiate* a thought, which led to a *response* from the student and was followed up with *feedback* – or evaluation – from the teacher. The link between this and a dialogic teaching methodology was that in the latter, the *feedback* was another question or comment from the teacher to follow the student's response, thus encouraging further conversation about the topic. Even

better, according to Alexander (2008), would have seen this response to the same student, thus eliciting an extended and sustained dialogue. He suggested that there was nothing to be gained from failing to 'engage with the answer they give' nor with the 'understanding or misunderstanding the answer reveals' (Alexander, 2008, p.25). This characteristic, where the teacher followed up each answer with a question, ensured that the student's responses were seen as the 'building blocks of dialogue rather than its terminal point.' (Alexander, 2008, p.42)

Mercer and Hodgkinson cited Sinclair's and Coulthard's research (1975) as noting the *feedback* was often in the form of an evaluation. Here, the teacher's comments 'exemplified, expanded, justified or added additional information' to student responses (Mercer and Hodgkinson, 2008, p.137). These four terms were put into the Observation Database to examine the frequency and timing of each.

Research by Alexander in primary schools in five countries (England, France, India, Russia, USA) in 2000, highlighted the fact that although the IRF approach was universal, there were some differences in regard to the teacher-student balance of contribution. Although it was found that teachers spoke for the majority of the time in most schools, the contribution of students varied, 'leading to different levels of student participation and cognitive engagement' (Mercer and Hodgkinson, 2008, pp.144-145). In Russia and France teachers were more likely to 'probe a student's response' (Mercer and Hodgkinson, 2008, pp.144-145) compared to British and American classrooms.

Mercer (1995) described the classroom experience from the point of view of the student, and pointed out some significant findings, some of which are cited below. The student had to

- 'listen to the teacher, often for long periods of time;
- when the teacher stops talking, bid properly for the right to speak;
- answer questions to which the answer will be judged more or less relevant;
- ask questions about the administration of the lesson but not necessarily about its content'.

(Mercer, 1995, pp.44-45)

These aspects have formed sections on the Observation Database in terms of the balance of teacher-talk to student-talk; targeting students for questioning – how often for instance does the teacher choose students, or ask questions of the whole class; responses to questions; and student questioning (Figure 3.15). Many of these have already been discussed but this section is dedicated to examining the balance of the contributions between the teacher and the student.

Barnes (Barnes, 2008) defined the importance of the communication system that the teacher creates, as 'going some distance in determining the kinds of learning that they [students] engage in' (Barnes, 2008, p.35). Solomon and Black referred to the fact that 'learners do not necessarily participate in classroom discussions on an equal basis' *(*Solomon and Black, 2008, p.86) and Mercer and Hodgkinson described the 'power imbalance' between teachers and students *(*Mercer and Hodgkinson, 2008, p.77).

Lee (Mercer and Hodgkinson, 2008) suggested that to change the balance in the classroom would take time. He described the need to move towards the teacher 'managing the learning rather than directing or dictating' (Mercer and Hodgkinson, 2008, p.88). Further discussion referred to the relationship as being categorised in terms of 'teacher resource versus teacher authority' (Mercer and Hodgkinson, 2008, p.83)

Bidding (student chooses to put hand up)	**Teacher targeting**
Nomination (teacher asks for and then chooses from hands up	
Targeted questioning (teacher names students)	

Figure 3.15: Extract from Observation Database– targeting student questioning

One approach that expressed this clearly in the classroom was with regard to how the teacher decided who should answer the questions. The three distinctions in the Observation Database were

- **bidding** – where the students put their hands up in the hope that they will be picked to answer
- **nomination** – where the teacher chooses from those students in the class whose hands are up
- **targeting** - where the teacher chooses specific students to answer the question.

Mercer and Hodgkinson (2008, p.56) suggested that teacher-pupil talk was usually 'asymmetrical' where the conversation was controlled by one person. Although there may be occasions where the lesson was designed for the student to steer, it was more common that the teacher would be the person who led the direction of the communication. They considered that the 'symmetrical' approach, where all have an equal role to play, was more prevalent in group and pair work where the teacher was not involved. There was no suggestion that one of these approaches was better than the other. Both were added to the Observation Database to examine the context that enabled each one to occur in the classroom, how frequently each was observed and the impact of such changes of balance (Figure 3.16, p.76).

The dialogic pedagogy demanded 'pupil engagement *and* teacher intervention' thus moving away from an imbalance in either direction (Alexander, 2008, p.12). Alexander felt that the traditional model of teacher-facilitator led to 'activity on one side of the teacher-pupil relationship and passivity on the other.' (Alexander, 2008, p.12). He cited Bruner's claim that children needed the opportunities to think for themselves and it was the 'teacher's job to provide them with those linguistic opportunities and encounters' (Alexander, 2008, p.12) to enable this to occur. Alexander offered a debate regarding the teacher's role as being the facilitator as opposed to actively teaching the students how to learn, and consequently how to interact successfully to contribute to 'higher-order cognitive activities' (Alexander, 2008, p.13).

Initiation	**Balance and control of IRF**
Response	
Feedback / evaluation	
Asymmetrical (teacher leads)	
Symmetrical (all have equal status)	

Figure 3.16: Extract from Observation Database– balance of responsibility for learning and control of IRF

Barnes (1976) discussed the importance of the teacher's role in establishing opportunities for students to 'share' (Barnes, 1976, p.110) and collaborate, to enable more chances for talk for learning. He suggested that the more traditional role of the teacher involved *reply* and a*ssess* (Barnes, 1976, p.111). He debated the notion that to *reply* implied valuing the students' thinking and encouraged further risk-taking by the student to try out new ideas. To *assess* the students the teacher necessarily sets himself or herself apart from them, making judgements on their thoughts and ideas and in turn, Barnes suggested, stifling their desire to try things out. Both of these were considered vital tools in the classroom but the nature of being judged against an external set of criteria forced the students to present information in the form of a 'final draft' (Barnes, 1976, p.110). The desire for students to learn, as opposed to be tested, highlighted the importance for the teacher to facilitate the exploratory, sharing form of classroom talk.

Barnes described the distinction of these two functions. 'Exploratory' and 'final draft' demonstrated that through exploratory talk and writing the learner was able to 'take responsibility for the adequacy of his thinking; final-draft talking and [his] writing looks toward external criteria and distant, unknown audiences.' (Barnes, 1976, p.113). This is expressed in Figure 3.17.

Predominant Teaching Role		*Pupil's Role in Communication*		*Predominant Form of Communication*
Assess (judging)	→	Presenting	→	Final Draft
Reply (understanding)	→	Sharing	→	Exploratory

Figure 3.17: The role of the teacher and the pupil (Barnes 1976, p.113)

3.6b Lesson Structure

There was much reference to lesson structure (Smith, 2003; Greany and Rodd, 2003; Lucas, 2003) and of how different types of learning may take place at different times within the period of the lesson. Chapter 8 examines the links between different types of questioning at the start, middle and end of the lessons and how the lesson structure also reflected different levels of teacher input at different stages of the lesson.

Common to the 'Learning to Learn' programme (Appendix 2, p.284), Alistair Smith's Accelerated Learning programme (cited in Greaney and Rodd, 2003, p.52) and also featured in Lucas (2003), the following learning cycle – and consequently the plan for learning - was outlined.

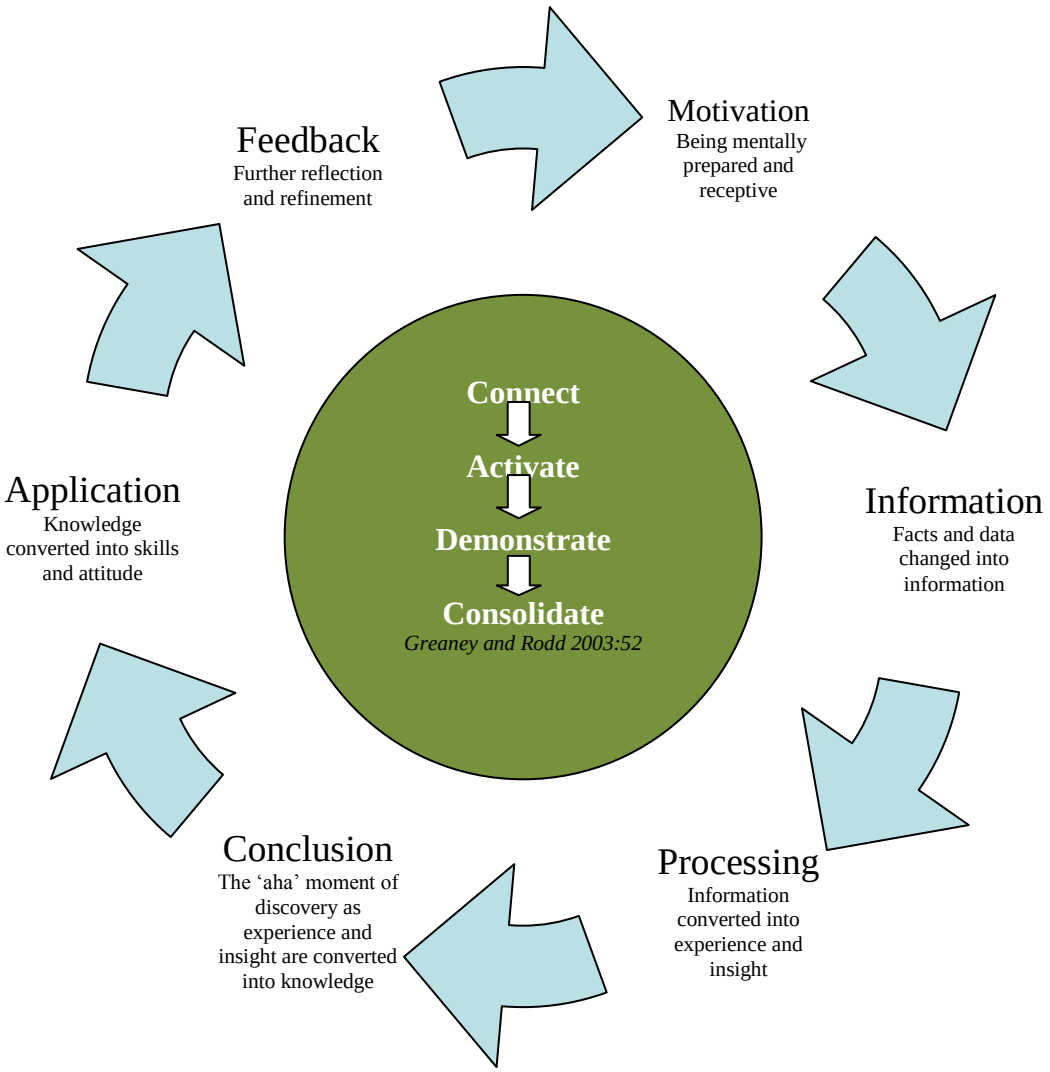


Figure 3.18: Diagram to represent two styles of lesson structure

External circle: Bill Lucas 2003, p.85; Internal circle: Greaney and Rodd 2003, p.52

The two diagrams in Figure 3.18 are combined and expressed as one. This is intended to show how the two models intertwine. The inserted sphere shows how the outside learning plan model links to the L2L model of Connect, Activate, Demonstrate, Consolidate. The circle diagram is taken from Alistair Smith's Accelerated Learning programme, cited in Greaney and Rodd (2003, p.52).

Smith (2003) suggested starting with the *Connection* phase. This was where the outcomes were described and connections made to prior learning or existing experiences. The *Activate* stage was where students could make sense of the knowledge through specific activities. This was the bulk of the lesson and enabled students to engage in the learning. In the next stage students *Demonstrated* their new knowledge. They had learned how to do

something and now they were expected to apply that knowledge. The Review or *Consolidation* stage, sometimes known as the plenary, was where students articulated what they had learned and how they had learned it.

It was necessary in the analysis of the data collection to note firstly whether there was a difference in terms of which part of the lesson featured specific elements, and to evaluate if this had any notable impact upon student learning, and secondly whether the process of learning was as clearly defined as Lucas's sequence in Figure 3.18 (p.78) suggested.

3.6c Summary of theories and relevance to this research

Table 3.4: Summary of concepts from existing theories

Theorist	Concepts described	Relationship to this research
Piaget	Students are actively involved in their own learning.	Connection to L2L concepts of effective learning through the empowered learner.
	Learning is inextricably linked to our development of language.	Reference to the power of language with regard to learning.
Vygotsky	Language is described as the tool by which children learn.	Reference to the power of language with regard to learning.
	Learning is a 'socially mediated activity' (Pritchard, 2005, p.111).	Connection to the need for collaborative activity.
	Learning is 'fostered by collaboration' (Pritchard, 2005, p.111).	Connection to the need for collaborative activity.
Hargreaves	'students [who] are effectively involved in their own learning … quickly take on more responsibility for their own performance' (Hargreaves, 2006, p.12).	Links dialogue with the empowered learner.
	The learner who is involved in deep learning is 'an articulate, autonomous but collaborative learner, with high meta-cognitive control' (Hargreaves, 2006, p.4).	Link between autonomy and effective learning.

Claxton and Hargreaves	An effective learner demonstrates characteristics such as autonomy (Claxton, 2004) and self-motivation (Hargreaves, 2004).	Link between autonomy and effective learning.
	Learning-talk is described as an important factor in meeting the personalised learning agenda.	Link between student voice, personalised learning, and deep learning.
Mercer	An acknowledgement that language is a key aspect of the 'means of constructing knowledge' (Mercer, 1995, p.4).	Describes the power of learning talk.
	Links language with thought - 'the way we represent our thoughts to ourselves' and how we share our ideas with others (Mercer, 1995, p.4).	Describes the power of learning talk.
Mercer and Hodgkinson	The language of learning is defined as being that which 'involves teachers developing their own awareness and skill in using talk, and helping their students to develop their own awareness and communicative effectiveness' (Mercer and Hodgkinson, 2008, p.69).	Describes the power of learning talk.
	Reference to a 'common underlying approach' (Mercer and Hodgkinson, 2008, p.57) and a 'shared understanding'.	The importance of the teachers' role in choosing appropriate activities to encourage effective learning talk.

Further exploration was made into specific types of learning talk and a set of characteristics was assembled from each of the theorists studied, for these to be examined in the classroom observations. This list contributed to the outline structure of the Observation Database. A summary of these can be found in Table 3.5. Column 1 lists the theorist who defined the terms and column 2 describes the characteristic described.

Table 3.5: Types of students' learning talk

Theorist	**Characteristics**
Barnes (1976)	Exploratory talk
	Presentational talk
West-Burnham and Coates (2005)	Bringing knowledge from earlier lesson
	Bringing existing knowledge
Mercer and Hodgkinson (2008)	Statement – student
	Whole class response
Mercer and Hodgkinson (2008)	Talk
	Narrate
	Explain
	Instruct
	Receive, act and build on questions
	Analyse and solve problems
	Speculate and imagine
	Explore and evaluate
	Discuss
	Argue, reason and justify
	Negotiate
	Social chat
Alexander (2008)	Questioning for clarification
	Questioning for understanding
	Questioning about the lesson
	Questioning for knowledge
	Questioning to guess an answer
Mercer and Hodgkinson (2008)	Reflection: making connections
	Reflection: examples
	Reflection: reinterpreting experience

Additionally it was important to determine how current theories defined deeper learning and effective learning. Some had made the connection between deeper learning and language explicit: a significance factor of this research (Table 3.6).

Table 3.6: Deeper learning and language

Theorist	Concepts described	Relationship to this research
Bloom	Bloom's taxonomy constitutes a 'meta-language for all learning' (Beirne and Velsor, 2012, p.3) • Remembering • Understanding • Applying • Analysing • Evaluating • Creating	Bloom's 'Cognitive Domain' - the taxonomy is useful as a basis of delineation – or description – of lower and higher order thinking. One of four theories which contributed to the models in the contribution to knowledge (Conclusion chapter)
West Burnham and Coates	Shallow, Deep and Profound Learning	One of four theories which contributed to the models in the contribution to knowledge (Conclusion chapter)
	The most important aspect of gathering knowledge is through *understanding* - the ability we have to analyse and interpret, and compare and contrast, constitutes *deep learning*.	Link back to Cognitive learning theories. Connection to observations - need to determine in observations whether this can be evidenced in learning talk.
	Deep learning involves 'a movement into metacognition – the learner understands him/herself as a learner' (West-Burnham and Coates, 2005, p.37).	Connection to observations - need to determine what deep learning looks like in the classroom and whether this be linked to learning talk.

	West-Burnham and Coates (2005) advocate that deep learning occurs 'when understanding is achieved', and is necessary to 'ensure success and personal authenticity' (West-Burnham and Coates, 2005, p.38).	
Hargreaves	Hargreaves's belief in personalising learning referenced that deep learning was 'at the heart of personalisation' (Hargreaves, 2006, p.7)	Connection to observations – need to determine what this looks like in the classroom and whether there are any particular characteristics which predominate.
Mercer and Hodgkinson	The *interactive/dialogic* approach represented teachers and students exploring ideas together. The speaker is encouraged to 'try out ideas' (Mercer and Hodgkinson, 2008, p.21).	One of four theories which contributed to the models in the contribution to knowledge (Conclusion chapter). Connection to observations - examine the teachers' role in determining the type of student learning talk.

It was necessary to look for further evidence of this connection in the observations of this research, and following further analysis of the literature three of these theories were chosen, plus OFSTED measurements making the fourth. They were: Bloom's Taxonomy (Table 3.1) West-Burnham and Coates's Models of Learning (Table 3.2) and Mercer and Hodgkinson's Four Classes of Communication approach (Table 3.3). The contributions to knowledge these make to this research are described in greater detail in chapter 9.

These measurements enabled an analysis of learning talk in the classroom, and it was possible to determine which characteristics, if any, led to effectiveness in terms of learning.

Chapter 4: Research Design

This research was best suited to a Case-study approach and the strategy used to organise the study was one defined by Yin, 2009. This chapter examines the rationale behind these decisions. Figure 4.1 is the concept map which shows the relationships between the concepts examined in this research work. This, along with the Chain of Evidence chart (Table 4.1, p.86) describes the theoretical propositions outlined by each question and helped to define the research design.

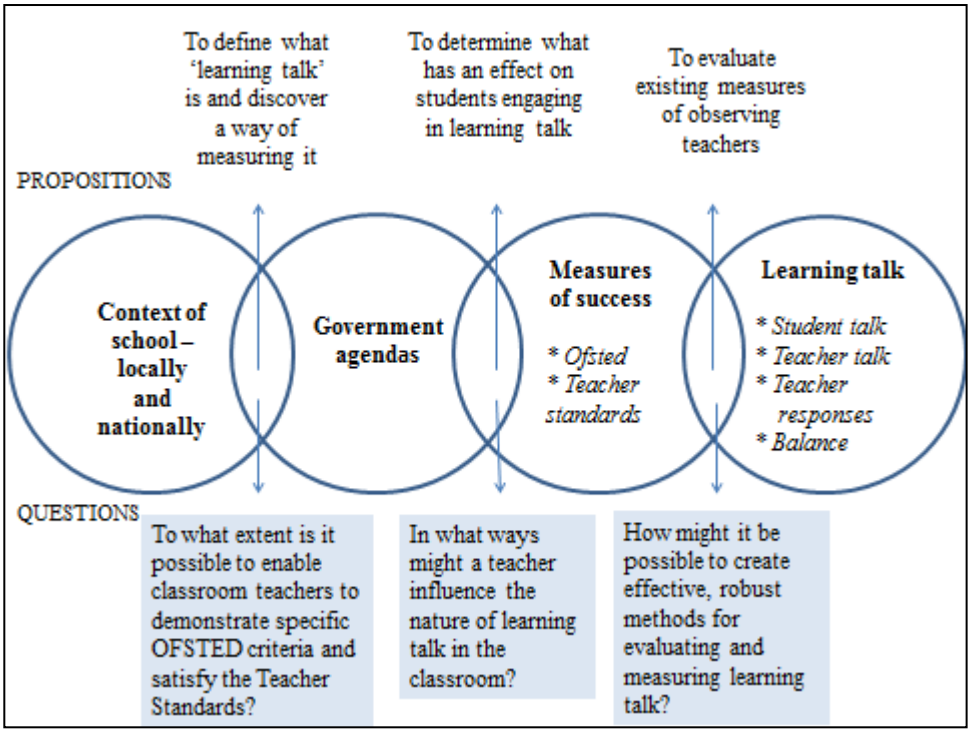


Figure 4.1: Concept Map
A more detailed framework can be found in Appendix 6 (p.299)

Research Questions	Theoretical Propositions	Units of Analysis	Data collection
1) To what extent is it possible to enable classroom teachers to demonstrate specific OFSTED criteria and satisfy the Government's regulated Teacher Standards?	Overarching question to be examined through the findings of questions 2 and 3.	Teacher and student	a) Direct Observation (main form of data collection) a. 2 lessons each – 8 staff (Propositions 1; 2a; 2b; 3a) b) Interviews/discussions a. Focused interviews with L2L staff for criteria/categories for analysis b. Focus-group discussions with staff c. Focus-group discussions with students (Propositions 1; 3a) c) Archival Records a. PLiP b. OFSTED observation data c. Student data (to corroborate any analysis) (Proposition 2b) d) Documents a. Formal observation records of teachers b. Formal evaluations of L2L c. Observation forms i. School ii. OFSTED (Proposition 1; 2b)
2) In what ways might a teacher influence the nature of learning talk in the classroom?	2a) to define what learning talk is, and to discover a way of measuring learning talk.	Teacher and student	
	2b) to determine if the following have an impact upon students engaging in learning talk: • Relationship between teacher and student in terms of balance of responsibility for learning • Nature of interaction guided by the teacher • Nature of interaction guided by the student	Teacher and student	
3) How might it be possible to create effective, robust methods for evaluating and measuring learning talk?	3a) to evaluate the existing methods of observing teachers with regard to measuring/evaluating <u>learning</u>	Teacher	

Table 4.1: Chain of Evidence Chart

Analytic Strategy: based on theoretical propositions and analysed through pattern-matching (Yin, 2009, pp.127-164)

Section 4.1 Methodology

The paradigm or 'philosophical worldview' (Cresswell, 2009, p.5) behind this inductive research was generated from the existing social constructs and the working organisation at the research school. As the researcher, I was also both a teacher and a member of the senior leadership team at this school. The expectations for the role of both teacher and Assistant Head already involved elements of observation and analysis. As a teacher in order to judge the success of a lesson, I constantly observed and analysed each nuance and comment from the students in order to best judge the next stage of the lesson. As an Assistant Head, as part of my day-to-day work, I was involved in observation of teachers and students and discussions with staff about various issues were all part of the role. Ideas, decisions, and strategic thinking were planned according to how they would affect people and situations. When working with staff in both a developmental and strategic way, constant self-evaluation and moderating of my own behaviour ensured all staff remained engaged and motivated.

Consequently when designing both the object and approach of this research the existing frames of reference needed to be acknowledged – both in terms of their similarities and their differences. Whilst there was an acknowledgment of the distinction between the role of Assistant Head and that of a researcher at doctoral level there was an existing context which needed to be taken into account. The staff and students were used to me being in their lessons for the purposes of observation. What was different was that the observations for the research were not judgemental. This was something both the teachers and I needed to be aware of in order to minimise the potential effects of the existing expectations. The accepted role of the academic *researcher*, as opposed to the professional practitioner was fully understood however, and is referred to throughout this thesis.

The investigation emerged as a qualitative, ethnographic study which centred on how the participants might respond to the various situations within the lesson setting. Important factors in the context of the research were the interaction between teacher and students, and the experience of learning in the classroom. The key requirements of the research design were to find ways of measuring these responses and analysing aspects found within the "participants' setting" (Cresswell, 2009, p.4) thus reflecting a phenomenological

perspective (Bogdan and Biklen, 1998, p.22). The research was necessarily inductive as each teacher behaved in a different manner and used different strategies to enable student learning. The multi-sourced evidence led to a qualitative analytical strategy linked to the theoretical propositions. The contextual analysis of the data produced a set of patterns and relationships – 'inherent relationships pertaining to the general case would emerge' (Cohen *et al*, 2000, p.4) and consequently conclusions were formed. The conceptual analysis examined connections to existing and current research and the validation of or disagreement with some of these theories.

The epistemological argument put forward by Burrell and Morgan (cited in Cohen *et al*, 2000, p.6) suggested that it was possible to examine the nature of the lessons, which were experienced by both the teachers and the students, log the experiences through the formal data collection methods and ultimately produce a set of criteria which could be re-learned by the teachers and delivered in future lessons to encourage change. This was a complex debate and one which evolved through the initial literature searches, the observing and recording of information and the eventual analysis. Ultimately this research studied human behaviours within an already established reality, of which I was a part. There was an issue to be addressed regarding reflexivity and the need to ensure the observations were able to be viewed and interpreted objectively and outside any existing perceptions. This is referred to later in this chapter.

The empirical nature of the research suggested that the observed behaviours would form patterns and consequently theories or models could be formed which describe these patterns. The validity of the models could be 'tested' through repetition (Cohen *et al*, 2000, p.12) to show 'considerable explanatory and predictive potential' (Cohen *et al*, 2000, p.12). In other words the links and patterns offered through conceptual analysis of the collected data would be reliable as they could be produced again and again and propositions offered as to what would happen if particular states were repeated. In this thesis the models refer to the impact certain teacher behaviours had on the depth of student learning. The debate would be whether, once they knew the theories, the teachers in the research school could explicitly deliver certain strategies with the expectation of specific results. This, and future research potential with regard to staff development, is discussed in the Conclusion chapter.

4.1a Research purpose, constraints and requirements

Cohen *et al* (2000) highlighted the need to identify 'and give priority to the constraints under which the research will take place' (Cohen *et al*, 2000, p.89) in order to employ the most appropriate methodology and research design. The main influences are described below.

Existing training programmes

The research school desired to move the quality of teaching and learning forward, and part of this was designed to be as a result of this PhD research. However the school leadership team also required a more immediate impact than that which would result from the findings of the research over time. This combined with the BERA guidelines (2008; 2011) and Anglia Ruskin University Ethics Committee's expectation that no additional work should be created for the participants, meant that the Professional Learning (staff training) programme for this particular year was specially designed to support the focus-group discussions, and the elements of aspects discussed were expected to feed into classroom practice.

Learning to Learn – students and staff

At the onset of my research, these teachers had been teaching the L2L programme for one year, also having received staff training on the concepts behind the programme. The students in Year 7 had all received one lesson per week of this lesson. The concepts that were inherent in the programme were that the teacher empowers, facilitates and guides the students' learning. As a consequence it is expected that the students become motivated, independent, autonomous learners.

As described in earlier chapters, the L2L programme had been introduced into the school in the year prior to the commencement of this research. Due to the nature of the programme there had been training for those teachers involved in delivering the programme and all Year 7 students had experienced one lesson per week of L2L during the previous year. Evaluations had been carried out to measure the impact of the programme and the results recorded. Consequently this too became an important element in the Research Design.

Requirements

When creating the methodological design best suited to this research it was also necessary to note the following requirements:

- The study was going to be based in one school with a carefully chosen research cohort of staff and students.
- The data collection through lesson observations would take place during a specified time of one year.
- Other data collection methods designed to triangulate the findings would take place before and during the lesson observations and included interviews and focus-group discussions.
- Previous documentary evidence related to the research school fed into the study – in terms of justification for the research, suggestion of some of the categories to be observed and as a method of triangulation against the data logged from the observations.
- The research school was unique in many ways, not least in the frequency of existing classroom observations and the nature of the school's Media Specialism - both meaning that students were used to being filmed and tended to ignore cameras and recording implements.
- Findings would be restricted to the research school and could not be considered to be attributable to other organisations. The frames of reference were attributable to those involved in the research – and the "understanding of individuals' interpretations of the world around them has to come from the inside" (Cohen *et al*, 2000, p.20).
- Methods of data collection could be replicated and therefore needed to be recorded in terms of benefits and issues raised.
- Contribution to knowledge would be generated from the methods of data collection and the impact of the conclusions upon staff development and the nature of evaluation and observation, rather than the conclusions themselves.

4.1b Considered methodological approaches

Grounded Theory

There are many elements of grounded theory which fitted the needs of this research, but several aspects which, once explored, were deemed to be inappropriate.

Cresswell (2009) defined the process of Grounded Theory as requiring 'multiple stages of data collection and the refinement and interrelationship of categories of information' (Cresswell, 2009, p.13). He suggested that one of the main characteristics of this methodology was the 'constant comparison of data with emerging categories' (Cresswell, 2009, p.13). It could be argued that this was what was happening with the data as they are gathered from each observation in preparation for examining the relationships therein. However, the data were logged into pre-prepared categories, not into categories created as the process developed. Although these observation classifications were flexible enough to be added to, or dismissed when evidenced too infrequently to be meaningful to the outcomes, they were created from previous research and enquiry and were not part of the process of forming new theories.

The prior research gave a 'justification for the study' (Maxwell, 2005, p.55), both in terms of contextualising existing and emerging studies into learning talk and also highlighting those aspects which were less recorded such as the *impact* of the role of the teacher on student responses and the *process* of using video as a data collection tool.

Bogdan and Biklen (1998) suggested that those researchers who defined and developed their research questions as they carried out extensive field analysis, were considered as generating 'formal grounded theory' (Bogdan and Biklen (1998, p.160). In this case the questions were established, fed into the propositions, the conceptual framework and consequently the research design. Although the research questions were *addressed* during the data collection and analysis, they were not *created* during this process.

Equally, although findings from the data collection would feed into further classifications and theory it was not fully in the manner suited to the grounded theory approach. The empirical data from this research was categorised and conceptually analysed to establish patterns and links. The aspects of observation were chosen from existing literature

although care was taken not to ‘deform’ or restrict the framework for the research, by being unable to see beyond the literature and overlooking ‘important ways of conceptualising’ the study (Maxwell, 2005, p.45).

The expectation that the theory would be ‘grounded in the actual data collected’ (Maxwell, 2005, p.43) did not therefore match the research design that was deemed the most appropriate for this investigation.

Action Research

Bogdan and Biklen (1998) suggested that one form of action research, *political action research* was designed to promote social change, ‘consistent with the advocates’ beliefs’ (Bogdan and Biklen, 1998, p.211). The second form, termed ‘participatory action research’ (Bogdan and Biklen, 1998, p.211) had the aim of working with the participants, through research, to improve an element of their existing work.

There were several reasons which may have indicated that action research was the most appropriate method for this study, and initially this was the preferred approach. The first reason was that action research was concerned with the need for change. There was a need for the research to understand what was happening in the classroom, to affect it and try to measure the impact that staff training and focus-group discussion had through further observations.

Wisker (2001) referred to a characteristic of action-centred research which particularly resonated with the needs of my investigation:

> ‘practice is both the key concern and the source of the research data, and practice in the area into which the research results will feed, causing change’ (Wisker, 2001, p.114)

Cohen *et al* (2000) referred to several uses of action research in education from addressing teaching methods, developing learning strategies and ‘improving teaching skills, developing new methods of learning’ (Cohen *et al*, 2000, p.226). In this respect the research followed well-trodden paths, as the intention was to make a difference to teaching and learning.

There were some varying characterisations of action research. Some (Hopkins, 1985 and Ebbutt, 1985, cited in Cohen *et al*, 2000, p.226) focused on the systematic and ordered intervention where one made sense of, addressed and ultimately changed an aspect of practice; others suggested it was a more philosophical approach focusing on 'self-reflective enquiry' (Kemmis and McTaggart, 1992, cited in Cohen *et al*, 2000, p.227).

The aspect of action research which was harder to address in this case was the iterative cycle of planning, acting, observing and reflecting (Cohen *et al*, 2000, p.227). There was a need to restrict the timescale to ensure the variables did not change too much: the year group and teachers were only in these particular combinations for one year. This meant that the cycle could not be repeated. Additionally the involvement of the participants was only partial. They were active in the focus-group discussions and staff training and were able to take suggestions forward with them into the classroom. However the observations were not sequential in that the teachers did not have an equal opportunity to improve practice from one observation to another. The data collected was not compared in this respect either, so potential *change* was not able to be measured.

Consequently although elements of action research applied to the methods being used, the inability to determine a repeating cycle of research: *plan, act, observe and reflect* (Cohen *et al*, 2000) meant that action research was not appropriate.

Case-study Approach

Case-study was the chosen method for this research. The case-study, according to Stake (2006), was described as a 'dynamic' piece of research, operating in 'real time' (Stake, 2006, p.3). The rationale for using a case-study approach in this instance was to be able to qualitatively investigate a situation in context to learn about and understand the 'activity and experience of the case' (Stake, 2006, p.3).

Yin (2009) referred to the nature of the questions when deciding which research approach would be most suited. He suggested that 'how' and 'why' questions tended to be more exploratory and required the research to investigate situations over time, rather than by frequency or incidence (Yin, 2009, p.9). He further advised that the case-study was 'a way of investigating an empirical topic' (Yin, 2009, p.21) where the investigation had 'little

control over events' (Yin, 2009, p.2). This research required a deep understanding of the nature of interaction in the classroom and its relationship to student learning in order to fully answer the research questions and as such was a 'contemporary phenomenon' (Yin, 2009, p.2).

Cohen *et al* (2000) suggested several aspects of case-study that indicated the appropriateness of this methodology. It would 'catch the complexity and situatedness of behaviour' and 'present and represent reality – to give a sense of "being there"' Cohen *et al* (2000, p.79). Additionally the uniqueness of this single case enabled the in-depth analysis necessary to examine all possible interpretations. 'Significance rather than frequency' was indicative of most case studies according to Cohen *et al* (2000, p.185).

The 'ethnographic account' (Cohen *et al*, 2000, p.187) of the conversations in the classroom required for this research was typical of the case-study definitions described. Cohen referred to *highly structured, semi structured and unstructured observations* (Cohen *et al*, 2000, p.305). In this case there was a clear agenda of what was to be observed, having decided on the categories prior to the observations. This could be considered as 'highly structured'. However there was an understanding that observations would 'illuminate' the data in terms of relationships between categories and the links between *that which the teacher did* to impact upon *that which the student did*, thus creating further categories for analysis and observation – Cohen's 'semi-structured' observation definition. As the observations could be viewed again and again, and the data were logged on a spread-sheet, there was the potential for creating further categories and classifications.

While there were many beneficial reasons to use a case-study approach, the weaknesses of this method needed to be identified and planned for. Nisbett and Watt (1984, cited in Cohen *et al*, 2000)) listed these as:

1. 'The results may not be generalisable except where other readers/researchers see their application;
2. They are not easily open to cross-checking, hence may be selective, biased, personal and subjective;

3. They are prone to problems of observer bias, despite attempts made to address reflexivity'.

Cohen *et al* (2000, p.184)

In answer to each of these

1. The conclusions of this thesis will be based on the relationships found within the contextual analysis of relationships and patterns but are attributable to the research school only. What could be considered as generalisable or replicable are the methods used to gather the data and those designed to analyse them. This is described clearly in chapter 9.

2. Multi-source data will be gathered in order to cross-check information found. The use of academically sourced aspects to be observed and the organisation of a Chain of Evidence design linked to the theoretical perspectives (Table 4.1, p.86) means there will be rigour in addressing possible bias or subjectivity.

3. The issues related to the relationship between the researcher and participants are further discussed in the following section.

Section 4.2 Reflexivity

It was necessary to take note of the 'effect of the research on the researched and the researchers' (Cohen *et al*, 2000, p.36) and to ensure that great care was taken to balance that through existing theoretical perspectives, data gleaned through the experiences of the participants (through interviews and discussions), and with a sophisticated, academically rigorous approach to collecting the data through observations.

One of the issues to be addressed for instance was the response of the students and teachers to me, in my dual role of researcher and that of my position in the school – as outlined earlier in the chapter (BERA Guidelines, 2008; 2011). Hammersley and Atkinson suggest that 'the fact the researcher is part of the world he or she studies – is a powerful and inescapable influence' (Maxwell, 2005, p.109).

It was important in this study that I was part of the research and it was also argued that reflexivity was 'central to action research' (Cohen *et al*, 2000, p.239). However there were two points to be made here. There was a need for me, as the researcher, to maintain a distance from the emotional engagement of the study as well as having an awareness of the effect my presence may have on the participants.

A significant element of this was the nature of my relationship with the research cohort which could have implications for validity and bias. As outlined in Bogdan and Biklen (1998, p.43) the nature of much qualitative research accentuates this 'on-going' relationship with the participants which 'evolves over time' (Bogdan and Biklen, 1998, p.43).

There were two definitions relating to this situation that are critically examined here: the 'non-participant observer' (Cohen, *el al* 2000, p.187) and the 'participant researcher' (Bogdan and Biklen, 1998, p.82; Cohen *et al*, 2000, p.186). **The 'non-participant observer'** as defined by Cohen *et al* (2000, p.187) described an observer who would be uninvolved in the lesson, and would sit 'at the back of the classroom' monitoring 'the verbal exchanges between teacher and pupil by means of a structured set of observational categories' (Cohen *et al*, 2000, p.187). However, in this research, it was not possible to sit anonymously 'at the back' of the room. Through trial and error it was clear that the camera needed to be close to dialogue and consequently I needed to 'follow' the conversations around the room. Issues related to this 'live editing' are referred to in section 4.5, but for reference here the concern was with regard to the potential inhibiting of, or impact upon, the students' conversations.

It was also not wholly accurate to describe this role as a **'participant researcher'** (Bogdan and Biklen, 1998, p.82; Cohen *et al*, 2000, p.186). This – according to their definitions – was an observer who was part of the research, such as a member of a committee researching the committee. On the one hand the intention was for me to remain uninvolved while filming in the classroom, but it was not possible to ignore the fact of my role in the school.

Bogdan and Biklen (1998) suggested that **participant observation** was the major data-gathering technique for observational case studies (Bogdan and Biklen, 1998, p.55). They cited Gold's (1958) spectrum of involvement of the participant observer. The one extreme was the 'complete observer' (Bogdan and Biklen, 1998, p.81) who was able to watch the activity as if through glass, without disturbing or becoming involved in any way. The other end of the spectrum saw the observer joining in with the study to the extent that there was little difference between observer and participant. They discussed the issues of classroom observation (Bogdan and Biklen, 1998, p.82) with one observer being able to sit at the back of the room and 'take it all in' (Bogdan and Biklen, 1998, p.82) whilst another may act as a volunteer in the classroom. In this research the intention was to observe without participation, but the nature of having to get close with the camera and of already knowing the students meant this was virtually impossible to sustain.

There were elements of the 'participant observer' which did apply:

- the ability to be close to the action and record it from within;
- being able to observe behaviour 'as it occurs' (Cohen *et al*, 2000, p.188);
- being able, over time, to develop a different type of relationship with the participants – that of researcher rather than Assistant Head;
- having time after the event to view visual records as well as field notes, several times if necessary, thus being able to be 'less reactive than other types of data gathering methods' (Cohen *et al*, 2000, p.188).

According to Cohen (2000) the researcher may need to 'inhabit the world that they are researching' (Cohen *et al*, 2000, p.315) and as such it would be difficult to be entirely neutral. There was a **middle line** between complete participation and complete detachment upon which this research requirement sat. Cohen *et al* described both a 'participant-as-observer' and an 'observer-as-participant' (Cohen *et al*, 2000, p.315). It needed to be possible to acknowledge that an observer who existed within the setting was not totally invisible but was accepted as being someone who was 'outside' of the action. The participants were aware of the requirements of the research, which was to capture as real a situation as possible.

Initially the decision was made to use a colleague to film the lessons. This would help to limit any impact my presence may have on the delivery of the lessons. The colleague was one of the research school's media technicians, and as such had been CRB checked, and was someone the students were used to having in the classroom, thus complying with "legal requirements in relation to working with school children" (BERA Guidelines, 2008; 2011). Section 4.5 on the use of video for lesson observations examines the issues surrounding this decision and how alternative solutions had to be examined.

Having tried a variety of different ways of recording the classroom interactions it had to be accepted that my presence would actually have less of a detrimental effect than any of the other solutions we had tried. Wisker suggested that it was virtually impossible to be unobtrusive, and one had to take this into account when analysing the data (Wisker, 2001, p.179).

Becker and Geer (1957, cited in Wisker, 2001, p.110) and Crabtree and Miller (1999, p.49) all agreed however that the longer a researcher is in the field, the more likely it would be that the participants would accept his or her presence and revert to normal behaviour.

It was also worth considering what the issues would be if I was not known to the participants; if a stranger was filming in the classroom. The concerns of students reacting differently to normal because a camera was in the room would always mean that the data could not be considered entirely reliable. The few occasions in this research where the students reacted in a manner which could have been as a response to the situation were noted as such and each piece of analysis and pattern matching has taken this into account.

The need to minimise the 'Hawthorne' effect, (Cohen *et al*, 2000, p.116) where the participants may work differently, or better, as a result of being part of the study or involved in a different situation to normal, was important to note. However there were aspects of this effect which were not necessarily pertinent to the *outcomes* of this research. The results were not based on making judgements about 'good' lessons, and it did not matter whether the teacher produced a good or poor lesson. What was important was for the data to show what happened when the teacher provided certain opportunities for students to talk, and what caused students to use certain types of learning language. The

only potential for limiting the results, which would have caused a problem in this study, was if the students decided not to talk at all.

What was equally important was reducing what Cohen termed the 'halo effect' (Cohen *et al*, 2000, p.116). There was a chance that the teachers involved would be saying and doing what they thought was necessary for me to see rather than enable me to observe real behaviours in the classroom. However the first conversations with the participants were designed to ensure them that for this research to be viable it had to be honest; there was little to be gained from a false representation of what occurred in the classroom as it would not enable the research questions to be answered. The main way this was addressed was through transparency and openness with the participants and a visible regard for anonymity, confidentiality and professionalism both in the data collection and recording, and the final writing of the thesis.

It was apparent that as the research went on the teachers were delivering lessons as they always had and were true to their own values and beliefs. This was evidenced through the recorded focus-group discussions where aspects the participants found difficult to understand or were unable to introduce into their teaching were highlighted and talked about freely. For example although most were in agreement that an independent, autonomous learner was to be striven for, each had their own ideas about how to achieve this. These varied approaches were reflected in the classroom and described further in chapters 7 and 8.

Section 4.3 Validity

The validity of this research was found in the process by which the conclusions were reached, rather than in the conclusions themselves. This issue with validity in qualitative, or inductive, research is a well-rehearsed debate. Hammersley (1992) suggested that an account would only *represent* reality rather than *reproduce* it (Cohen *et al*, 2000, p.107).

Maxwell referred to the importance of 'descriptive validity' and 'interpretive validity' (Cohen *et al*, 2000, p.107). The research accounts were factually accurate through both the

fieldwork notes and recorded observations. The use of video and voice recordings meant that the data was what actually happened rather than what the 'researcher felt was important to record' (Maxwell; 2005, p.110). However there are important aspects to be considered in relation to the issue of choices made when video recording which are referred to in chapter 4. The *interpretation* of what happened was based in the *process* of the analysis and it was necessary to ensure that there was a chain of evidence which triangulated the findings (Table 4.1, p.86). However there would always be a level of subjectivity in how the data was interpreted, what Maxwell described as subjectively meaningful (Cohen *et al,* 2000, p.106). The requirement was for me to be as 'honest as possible to the self-reporting of the researched' (Maxwell, 1992 cited in Cohen *et al,* 2000, p.106).

What was important therefore was the *internal validity,* which was determined by the secure collection of the data. Methods of data collection included video-recorded observations, and voice-recorded focus-group discussions which were transcribed and coded for analysis. This was supported by quantitative data such as examination results and formal staff observations, using the specifically designed Observation Criteria (Appendix 3, p.290) based on OFSTED Guidelines (Appendix 5, p.296).

Maxwell produced a checklist for validity (Maxwell; 2005, pp.110-114). The table below shows those aspects of Maxwell's list (left-hand column) which are applicable to this research (right-hand column).

Table 4.2 Validity Check

Validity checklist (Maxwell, 2005)	Application to this research
Intensive, Long-term involvement. Becker and Geer (1957) suggest that sustained presence of the researcher can help to rule out 'spurious associations and premature theories'. (Maxwell; 2005, p.110)	My role within the school meant the expectation of observation and staff training was already in place. This should have limited the need of staff or students to change behaviour when the observations were being carried out.

"Rich" Data. Such data requires verbatim transcripts of interviews. For observation, rich data are the product of detailed, descriptive note taking (or videotaping and transcribing) (Maxwell;2005, p.110)	All interviews and focus-group discussions were audio-recorded and then fully transcribed. All observations were video-recorded and then transcribed and coded.
Respondent Validation. Bryman, 1988 and Lincoln and Guba, 1985, refer to this as 'member checks'. Ruling out the possibility of misinterpretation and bias by systematically soliciting feedback from the people being studied.	Focus-group discussions and staff training intervention in between each observation enabled discussion of what was seen and how this could be interpreted.
Comparison. Explicit comparisons for the purpose of assessing validity threats, including comparisons of the same setting at different times.	More than one observation of teachers at different times in the process. Comparison to Standardised Observations carried out using OFSTED criteria and Subject Reviews – one per year.

(Adapted from Maxwell, 2005, pp.110-114)

Section 4.4 Sampling

4.4a Time sampling

Deciding which choices to make with regard to sampling of time was largely determined by the nature of the school day. It was accepted that there was a difference between lessons taught at the start and end of the day, the start and end of the term – and even what the weather was like at the time of an observation (Bogdan and Biklen, 1998, p.61). However, it was not possible to take all of these into account when designing the observation schedule due to the constraints of the existing lesson timetable. Whilst the time, day of week and month of the lesson observation was recorded, it did not feature in the analysis as it was not a comparable factor. This would have been important had the analysis formed a judgement on the quality of the teaching, but the aim was to examine the nature of the conversations and relationships and as such this variable could be put to one side.

4.4b Participant selection - Choice of participants

The list below offers fundamental requirements for the teachers' research group. It was necessary to have members of staff

- who displayed a willingness to contribute to the programme;
- who would be happy to continue if the data collection lasted longer than the year;
- who would be happy to be observed and to follow an intervention plan/programme;
- who were not likely to leave for any reason mid-research.

The BERA guidelines and University Ethics Committee highlighted the need to outline requirements to the group prior to their agreement to be involved. One aspect to be considered was not to create more work for the participants. Fortunately it was possible to structure the existing staff training sessions to meet the needs of the research as the strategic focus of the teachers' Professional Learning programme was part of my professional remit. Their focus-group discussions and training activities all took place during their allotted Professional Learning time.

Some of the literature indicated that the sample of teachers should be 'chosen to *indicate* the larger whole' (Wisker, 2001, pp.138-139) and to get a truly diverse picture I would need to select randomly from the whole staff to ensure a varied group. However the needs of this research echoed the thinking of Crabtree and Miller (1999) who suggested that the need to choose a group that was representative of the whole was not workable in most qualitative research. They proposed that 'sampling was driven not by a need to generalise or predict, but rather by a need to create and test new interpretations' (Crabtree and Miller, 1999, p.34).

Maxwell described two sampling outcomes when choosing the participants as being the selection of a 'probability sample' or a 'non-probability sample' (Maxwell; 2005, p.88; Cohen *et al*, 2000, p.99). The 'non-probability sample' allowed the choice of a specific group of teachers, whilst accepting that this did not represent the wider population. Through 'purposive sampling', (Cohen *et al*, 2000, p.103) members of staff who provided examples of different types of teacher were handpicked. Maxwell terms this 'purposeful

selection', and Le Compte and Preissle (1993) 'criterion-based selection' (Le Compte and Preissle, 1993, quoted in Maxwell; 2005, p.88).

4.4c Size of sample

The research methodology had to ensure that the group chosen was of a realistic size to cope with in the time frame. Ten members of staff were chosen initially, each teaching a different group of Year 8 students. This was out of a staff population of 100, with approximately 1200 students. The number changed to eight as the research progressed due to natural changes in staffing. There was little impact of this upon the findings as is described in a later chapter.

The sample was not intended to represent the whole. There was no need to produce evidence to suggest that this was representational of the whole organisation. Nor was there a requirement to produce statistical analysis. The need was to be able to collect enough different data to examine teacher action and student response through learning talk, and for this to be secure enough to establish patterns and links. This ample size offered sixteen hours of lessons to be observed, transcribed, logged and analysed.

4.4d Variables

There were certain aspects which were scrutinised to ensure the participant choices did not have a biased impact upon the data. The variables associated with the teaching staff in the school were vast (Appendix 8, p.305). Once they had been fine-tuned with some variables being eliminated as having little bearing on the findings, the list included:

- Subject taught;
- Teaching experience;
- The needs of the school.

L2L teachers were not part of the participant group for observations (although they did form part of the initial interview group; see Initial Interviews, p.113). On the one hand it may have been useful to compare them with the other staff, but the research design required staff to be at a similar base-line when starting the process. It was also necessary to

examine how teachers not trained in the ethos of L2L managed their classroom interactions.

The nature of subjects taught was also considered. There was likely to be a difference in the findings of lessons if they were all in one subject area compared to those resulting from examining a variety of different subjects. The decision was made for different subject areas to be included as it was felt that the restrictions from dealing with just one would limit the findings. This raised an additional query around the notion of whether it was easier for teachers to offer opportunities for interactive learning strategies in particular subject areas or specific types of task. However this focus was outside the remit of this research.

No practical subjects were covered by the participants. Practical subjects in the research school were media, dance, drama, PE and photography. The reasons were twofold. The first reason was linked to the process of video-recording the lesson observations. The quality of the audio recording would have been affected both by the large spaces in which the practical lessons were taught, and the background noise caused by movement of students. The second reason was based in evidence from earlier observation experiences. Data gathered from previous observations suggested that many practical subjects were already involved in facilitating learning conversations due to the nature of the lesson design. Whilst on the one hand this was exactly what was required for a detailed analysis into learning-talk, it did not offer a trustworthy picture of what was happening in the whole school and as such would have skewed the findings. The evidence for this assumption regarding practical lessons was based in both anecdotal and hard evidence (Subject Reviews and Performance Management Observations; annual student Learning Questionnaires). Although not a robust supposition, it held enough merit to consider that observations of the practical subjects would be too unreliable for this research.

Significance was also given to the length of experience of the teachers in the research group. Considerations included how recently the teacher had entered the profession. Those newer to teaching may have come across aspects of emerging educational theories in their initial teacher training (local Teacher Training Partnership Training programme 2009-2010; Canterbury Christ Church University PGCE programme, 2013). Additionally those teachers new to the school would have other priorities regarding settling in and getting to

know the students. Consequently members of staff that were involved in teacher training or were new to the school that year were not among the participants.

The leadership team also enforced a requirement that subject leaders or those with whole school responsibilities were not able to be part of the cohort due to their existing leadership priorities which they decided needed to take precedence.

The initial research group consisted of the following subject areas:

- English x 2 teachers
- Geography x 3 teachers
- Science x 2 teachers
- Maths x 1 teacher
- ICT x 1 teacher
- Technology x 1 teacher

Two teachers did not complete the research year, and therefore the final cohort was eight.

The gender breakdown of both teachers and students was equal. There were no comparisons made in this research regarding girls' or boys' reactions to male or female teachers. However this could form future research analysis in terms of how gender impacted upon the nature of different students' vocal contributions.

4.4e Student cohort

Maxwell's 'purposeful selection' (Maxwell, 2005) also met the intended outcomes for the student cohort, of

- 'achieving representativeness or typicality of the settings.
- adequately capturing the heterogeneity in the population.'

Maxwell, 2005, pp.89-90)

Students were chosen from year 8. This was because as Year 7s they had all received the Learning to Learn programme (Appendix 2, p.284). The teachers were asked to choose five students from their classes who were different to each other in terms of ability, gender,

behaviour, engagement. These students would be the focus for the observations. The decision was given to the teachers as they knew their classes well, and would choose students who would give their consent to being observed and filmed without causing any disruption to the normal flow of the lesson.

The students were chosen using the following considerations -

- there was an equal mix of genders.
- there was a mix of abilities (based on formal data).
- they (and their parents) agreed to take part in the research.
- they were at the research school in Year 7 – and had therefore taken part in 'Learning to Learn' lessons.
- there was no duplication of students across the research classes.

The research sample then was limited to the cohort of 8 teachers, with 5 chosen students from each of the 8 classes – total 40. The remainder of the class were 'passive subjects' who were part of 'the teacher's own professional practice' (BERA Guidelines, 2008; 2011).

Section 4.5 Methods

This substantive case-study (Bogdan and Biklen, 1998, p.62) included classroom observations of eight staff. Additionally data was collected from focus-group discussions with staff; informal, recorded, conversations with students in a focus-group; and interviews with specific teachers.

In 2007 the school had been involved in an earlier piece of research. Personalised Learning in Practice (PLiP) was a research project run by Edison Schools along with four secondary schools. The aim of the project was to test a process and method for implementing a practical approach to personalised learning. In the year prior to *this* research starting, the research school was involved in the PLiP project and had collected some hard data about 'learning'. This data was collected through a questionnaire that Edison sent to all staff and all students.

The basis of personalised learning was defined for the PLiP project as a dialogue between students and teachers about learning. The purpose of this dialogue was to form a framework in which obstacles to learning could be identified, discussed and dealt with in a non-confrontational way.

Ultimately Edison produced a piece of software which enabled students and teachers to explore aspects of learning. Although the research school did not buy the software, it made use of the questions and learning statements generated by the software to determine values of both staff and students at the time of the project. A group of teachers, called the Teaching for Learning Group, addressed some of the issues raised, and developed a pilot framework for conversations to help them negotiate positive discussions about learning in their classrooms.

The statements and questions produced fell into the following categories (Appendix 9, p.306):

- Learning Skills.
- Learning Opportunities.
- Teaching characteristics to influence student learning.
- Learning statements.

The data generated gave a whole school response to the concept of learning in the school at that time, and although not used explicitly to inform this research, the work carried out, and the residual knowledge gained through our involvement, had some influence on the context of and motivation for this investigation.

Data collection for *this* research included

- Interviews with teachers;
- Focus-group discussions with teachers and students;
- Lesson observations;
- Documentation.

Lesson observations formed the main element of data collection. In order to choose those elements to be examined in the lessons, interviews with the 'Learning to Learn' teachers, informal discussions with the student cohort, and focus-group discussions with the teacher research group were carried out. This multi-sourced evidence fed into the analytical strategy which linked the chain of evidence to the theoretical propositions (Table 4.1, p.86).

Table 4.3: Timeline and structure of data-collection process

Introduction of L2L to research school	Evaluation of L2L	Interview of L2L teachers	Student focus-group discussion	Staff focus-group discussion 1	Lesson observation Series 1	Staff focus-group discussion 2	Lesson observation Series 2
2007	2008 and 2010	2008	2008	2008	2008-2009	2008-2009	2008-2009
				Professional Learning activities (staff training) interspersed with data collection			

The data collection through lesson observations took place over one academic year and was video-recorded and transcribed onto an Excel spread-sheet – referred to in this thesis as the Observation Database. Discussions and interviews occurred before and during the observation period to support the evidence being found and further informed the foci for the observations. These were also audio-recorded and transcribed onto Word documents.

The intention behind the recording was solely for my viewing as part of the research. The recordings were not intended – nor were they used – for sharing. Consequently the quality and choices made were not those required for a formal documentary record.

There was a need to determine what Ofsted meant when they stated that all pupils should learn effectively - what did they expect to see in a lesson and what specifically could teachers do to achieve this?

Learning to Learn was a programme being delivered in the research school, and the main premise of this programme was that the act of metacognition enabled pupils to learn more

effectively and more deeply. My initial literature search surrounded a study of the research which led to the programme's formation.

4.5a Initial interviews

At this stage it appeared that the concept of children talking was one of the aspects which led to deeper learning, and consequently formed the focus of my research. In order to create an organised approach to the data collection, I carried out interviews with the four L2L teachers, all of whom completed the relevant consent forms (BERA, 2008; 2011). The intention was to determine which of the theories, if any, were prevalent in the learning of their classes, and whether it was possible to establish what 'effective' learning looked like.

The questions asked were guided by the following (Appendix 10, p.310):

- What they understood by learning-independence.
- What they perceived as the important characteristics of a 'good' learner.
- Specific questions relating to classroom discourse and interaction.
- Whether the stated L2L skills had an impact on student achievement.
- Whether any of the stated L2L skills were transferable to different subjects.
- The impact of the L2L programme on student and teacher behaviours.

Once these interviews were transcribed, and the content analysed, it was possible to group those responses which were common to all four of the teachers. In this early stage the common aspects were quite general and led to the outline of specific areas which warranted further investigation.

The early categories developed from the interviews can be seen in the following table in the left-hand column. In the right hand column is a list of areas for further investigation, taken from the teachers' stated examples. This investigation would be through classroom observation and through examination of existing research and theories.

Table 4.4: Early categories for observation

Flexible role of the teacher *to*	• enable students to transfer skills between subjects • encourage students to find solutions • offer opportunities for deep learning v superficial learning • be a facilitator • share learning outcomes and learning processes • impart knowledge • listen to how students are working • question students to help *them* lead the lesson
Balance of input / control – measured *by*	• how much input each offers • who asks most questions and who are the questions asked to – friends and / or teacher • student activity v teacher lecturing • student and teacher learning together through extended discussion • how the balance of control changes through the lesson
Student autonomy *shown through*	• not relying on someone else finding solutions but not being afraid to ask for help • knowing how they work best – being given the choice and asking for resources or environment to change to suit their learning • making links to other lessons / learning and transferring skills • talking about the learning – 'I find it hard because…' • hands up / calling out / confidence in joining in and working alone • choosing groups / pairs • moving ideas forward • asking questions
'Positive' language	• Talk about being successful • Talk about learning versus talk about content - examine different types of student talk • Student enjoyment and engagement • 'Success' vocabulary – students and staff
Group dynamics / group interactions	• Individual work and group work • Teacher interaction with individuals • Teacher interactions with whole class • Interaction between students

Structure and style of lesson	• Lesson structure – connection (link); activate (new knowledge; demonstrate (show learning); consolidate (reflect)work • Where in lesson does teacher activity mainly occur? • Pace – allowing the student learning to dictate the pace

From this I began to formulate my Observation Database (section 4.5). The areas were defined in the first row of the data-base, with the intention of looking for these when I observed the classes. To ensure there was a theoretical basis for each of these aspects, I then undertook a literature search into how they were viewed by different researchers.

Prior to starting the observations the four L2L teachers in the research school undertook individual interviews. There were several aims behind this. The literature regarding the L2L programme outlined several of the areas of focus for the observations, and there was an implication that teachers of L2L had already encountered the skills required to develop the type of dialogue about learning being studied. Gornall *et al* referred to students taking responsibility for their learning by engaging in activities 'through discussion of possible strategies and joint ownership (with the teacher) of planning' (Gornall *et al*, 2005, p.6). The programme endeavoured to promote the use of 'language to encourage the capacity' of learning. (Gornall *et al*, 2005, p.7).

Gilbert's statement that 'learners are active and curious: they create their own hypotheses, ask their own questions, coach one another, set goals for themselves, monitor their progress' (Gilbert, 2006) expressed the overarching philosophy behind the L2Lprogramme at the research school. These statements, together with informal experiences of the programme in the school so far, led to a starting point for the research and an aim for this aspect of data collection: a need to understand the perceptions of those staff involved in the programme after a year of teaching it.

The aims for the interviews with the L2L teachers were as follows:

- To examine broad attitudes to L2L, particularly with regard to the independent learner;

- To determine barriers to success (teachers and students);
- To gather data to define areas of study;
- To gather data which may help to inform the choice of the research cohort.

A set of broad, open questions encouraged each L2L teacher to talk about their perceptions of the following:

- The characteristics of a good learner.
- Their definition of an independent learner.
- Types of talk / interactions in the L2L classroom.
- The relationship between learner and teacher in the L2L classroom.
- The balance of responsibility for learning in the L2L lesson.
- Types of learning in the L2L classroom.

Bogdan and Biklen (1998) described a good interview as one in which the participants were 'at ease and talk freely about their points of view' Bogdan and Biklen (1998, p.95). The questions therefore were planned to encourage a rich exposition from the participant, who was treated as the expert (Bogdan and Biklen (1998, p.97).

Responses to the interviews led to a set of common categories which fed into the conceptual framework and subsequent literature searches. Following the interviews an informal discussion with the student cohort and focus-group discussions with the staff were carried out.

4.5b Students' focus-group discussion

The set of questions for the students' focus-group (Appendix 11, p.312) were designed to gain the students' opinions about learning and were asked throughout the session with the intention of generating discussion. The discussion lasted an hour and enabled each of the forty students (five from each teacher) to have a chance to ask questions.

The initial discussion in this student focus-group also afforded an opportunity to explain about the research and how it was important for the lessons to be as 'real' as possible. This would mean accepting the presence of the camera and ignoring any additional people in the

room. Two of the features of the research school which helped this form of data-collection were firstly the fact that it had a Media specialism and secondly that it had an open door policy with regard to other teachers coming in to observe lessons. The consequences of these features were that the students were not overly-concerned by, or aware of, cameras nor were they inhibited by people watching the lessons. This was confirmed in the focus-group discussion and demonstrated in the majority of the observation period.

The information gained from this discussion, together with that gleaned from the L2L teachers' interviews, helped to modify the set of questions for the initial focus-group discussion with the staff cohort (Appendix 12, p.313).

4.5c Teachers' focus-group discussion

The focus-group discussions with the teacher cohort were designed to meet two outcomes. Firstly they were to determine values, opinions and confidence with regard to teaching students how to learn; secondly to fine-tune those aspects which had been chosen so far to form the data collection elements.

The decision to use focus-groups with the staff cohort rather than individual interviews was so that greater information could be gained through the elements of discussion. The use of focus-groups also enabled a monitoring of how the situation was changing which would in turn inform decisions as to the nature of the staff development intervention programme. Wisker (2001) commented on the benefits of being able to repeat focus-group discussions to 'test out ideas' (Wisker, 2001, p.141) and that subjects start to 'form an understanding as participants debate certain points' (Wisker, 2001, p.141).

There were issues raised by this decision. Firstly the dynamics of the groups could affect the trustworthiness of the data. Individual interviews, when the interviewer allowed the interviewee to talk unhindered, ensured that the values and thoughts being articulated belonged to that person only. As soon as they were discussing ideas as a group there was the possibility of one voice influencing the thoughts of the other members of the group. In terms of staff development this was an acceptable method of *training* – the sum knowledge of the whole being greater than that of the individual. In terms of collecting data it was not a valid method to measure attitude or values. It was used therefore to gather information

rather than measure it. According to Cohen *et al*, (2000) the value in this method was that the participants' agenda, rather than the researcher's agenda dominated, thus eliciting more insights than an interview may offer (Cohen *et al*, 2000, p.288).

The use of focus-groups also enabled the monitoring of how the situation was changing, both from staff and student perspectives. The involvement of the staff in this way was an important part of the validity process, as it enabled 'respondent validation' (Maxwell; 2005, p.111) through discussion of observation findings.

Maxwell referred to the need to 'negotiate research relationships' (Maxwell; 2005, pp.82-83). What was important was to ensure that I could develop relationships whereby I could 'ethically gain the information that can answer the research questions' (Maxwell; 2005, p.83).

4.5d Observation

Each member of staff was observed twice, and in each class there were five focus students. In each observation there was a range of elements which needed to be observed and examined. These were carried out at intervals across the year to collect data against the specified criteria described in the previous chapters. The data would need to be gathered and recorded in a manner that enabled them to be reviewed over time, scrutinised for evidence and ultimately examined for patterns and connections.

Much of the advice from researchers about logging data from observations suggested taking field notes. Cohen *et al* (2000) listed how best to take these notes: quickly; 'taking two copies'. Cohen *et al* (2000, p.188); ensuring they were detailed; writing up immediately after the observation. There was a potential 16 hours of observations to examine, and to do this from field notes alone would be restricted by the speed and accuracy of my note-taking. It would also be likely to miss important interactions, both verbal and non-verbal, whilst in the act of writing.

In addition this approach would require categorisation of areas of focus prior to the lesson and then noting it as it happened. The issue here was that there was a risk of losing the depth and richness of the possible new data which had not been part of the initial

categorisation. While there was a need to remain focused on specific *elements* of the lesson content as outlined in the research design, it was also important to retain the flexibility of this focus.

As the desired outcome was to be able to analyse the specific conversations had by the students it was necessary to ensure these conversations were recorded verbatim. This would require either a voice or video recorder.

4.5e Use of visual recording as a data collection tool

Maxwell (2005) referred to the descriptive validity that was borne from a video recording as being a factual account of what happened. He also commented on the benefits of being able to 'stimulate recall and reflection' (Maxwell; 2005, p.150). The practice could be reviewed over time and analysis of both the spoken and visual language of the lesson could be carried out. Maxwell referred to the dual purposes of one of his case-study teachers using video as a way of 'ensuring the descriptive validity of her observations, and stimulating recall and reflection' (Maxwell, 2005, p.150).

While there are several research studies which highlight the *value* of using video to enable reflection, or discuss the conclusions drawn from their research, there is limited literature available regarding the *process* of using video as a method for data collection. Much of the research found has been of how film has been used to record ethnographic research projects and to examine the results of those interactions captured through video recording. However few of these have outlined any of the issues inherent in using this medium nor how they were addressed in the research process. A recent article (Luff and Heath, 2012) expressed that

> 'unlike methodological debates surrounding the accomplishment and use of interviews, fieldwork and even focus-groups, the discussion concerning video is still constrained to a small number of issues' (Luff and Heath, 2012, p.3)

They listed a set of challenges they had been faced with in their research but failed to offer any solutions to them.

The filming for this research started with a pilot, and led to some recommendations regarding four key issues which are presented below.

1. Choice of camera-person
2. Avoiding interaction
3. Purpose of filming – the need for 'live' editing
4. Position of camera

The following series of reflections are based on the pilot of the process of filming in the classroom, which initially used a technician to carry out the recording (sections 1 and 2). The final two sections (Purpose of filming and position of camera) describe the eventual approaches used for filming and recording the lessons.

1. Choice of camera-person

The main concern with regard to using the video camera was who would film the lessons. It was important to address the reflexivity issues with regard to my dual role of Assistant Head and researcher. Initially the solution to this appeared to be using a second person to film the lessons. A research assistant was not financially viable, so a school technician was considered. Whereas a full time research assistant would have involvement and understanding of the needs of the observations from an educational perspective, the technician's skills lay in expertise of filming and creating useful images to view at a later date. He was also known to the students so was not a stranger in their midst.

Whoever was filming needed to be able to make immediate choices of what and who to capture. This was not supported by the research design which allowed the teachers to choose how they set up their classrooms. Some of the teachers allowed the five students to sit where they usually sat and submitted a seating plan so it was easy to identify them. Some moved the students so that during collaborative work, each working group had just one of the students in it. Some lessons – technology and geography for instance – allowed the students to move around to complete tasks so students were not in a fixed seating plan.

The list of behaviours which were required to be observed was another factor to be considered. The person filming had to know what to look for, and there was always the

possibility that while filming in one area of the classroom, another important feature was being missed.

The process of filming in the classroom was piloted initially to address some of these issues, the most important of which are outlined below.

1. The process began with a technician visiting each class and recording the lesson with a small video camera. Instructions outlined the requirements of what was to be filmed, and a timetable for the observations was created. The technician knew that the focus was on dialogue between students and during group activities he should move around the tables capturing conversations. He was advised to stay for approximately ten minutes at each table unless the conversation waned.

2. At this early stage it was difficult to give instructions to another party as to what to record. The wide shots of whole-class teaching were straight-forward. However any group activity was going to be dynamic and he was not able to appreciate the detail of what I was looking for. Nor would he necessarily have made the same choices as I would with regard to which table to film at which time. There was always going to be the potential for missed opportunities, whoever was filming, but as an experienced observer I would be more able to stand back and take a holistic viewpoint before choosing where the dialogue was most prominent.

3. The first problems that arose once in the classroom were based on the reactions of the students to the technician in the room. He was unable to get close to the conversations as students either stopped talking, or started to communicate with him. His attempt to remain at a distance from the students defeated the object of the inquiry. Although I had spoken to the students as a group, explaining that it was important for me to have as ‘real’ a lesson as possible, the technician’s status did not enable him to exact these behaviours. This first lesson was considered untrustworthy in terms of usable data.

4. Other alternatives were trialled as part of the research process. An unmanned camera was positioned at the side of the room, set at a wide-angled shot which

captured the whole room. This was fine for the aspects of the lesson where the teacher taught from the front, but as soon as the students broke into small groups, the problem was with the quality of the audio, and the inability to choose the focus of the dialogue as it occurred. Flewitt (2006) had remarked on the 'considerable technical difficulties of recording young children's quiet voices in an active, noisy environment' (Flewitt, 2006, p.6) However she did not supply a solution to this issue.

5. Another trial included the placements of small voice-recorders on each desk, but the audio responses were only part of the whole, and it was easy to miss important non-verbal messages without the added visual record. Even linked to the wide shot at the front it was not possible to determine who was saying what. Flewitt (2006) describes her own frustrations with regard to using audio equipment in a classroom, when referring to Wells's Bristol Study (1981) which made no attempt to 'describe such behaviour, on the grounds that in the (audio) recordings the evidence necessary for such a description was almost completely absent' (Wells, 1981, cited in Flewitt, 2006, p.6).

6. Also important to the data collection was how close to the students the camera needed to be. In whole class teaching it was possible to have a wide shot and hear both teacher and student's response. However when the students were involved in pair or group discussion the camera needed to be close to the table at which they were sitting to ensure background noise did not affect the quality of the sound, and render conversations difficult to interpret at a later stage.

It became clear that it was necessary to have a person operating the camera, and that I would need to be that person. The difficulties still remained with regard to which aspects to record, but the benefits of having usable data outweighed the fact that some data would have been missed. The other issue which remained, but to a far lesser degree than with the technician, was the students wanting to interact with me.

2. Avoiding interaction

There were just two occasions where the students were interested in the fact they were being recorded and started a dialogue about this. They are worth a reference here, partly because in the entire year of data collection these were the only distractions caused by the camera in the room, and partly because they indicated the difficulties of the researcher being fully ‘removed’ from the research.

1. Fran invited me to become part of their discussion. They had mispronounced ‘meanders’ and asked me what it meant (lines 1and 2 below). Sometimes it was less intrusive to become part of the discussion than to try to be distanced from it as a true non-participant researcher.

1	Fran	*Reads* - the river 'menders' or 'meenders'…
2	Elise	Miss - what's the river …
3	Fran	Meenders?
4	T2	Meanders
5	Fran	What is that?
6	T2	What does it sound like?
7	Elise	It's like a pasta!
8	Fran	*Laughs*
9	Elise	Oh - er - curves!

I played the role of teacher (T2), as this is the role they were used to seeing me in, and helped them firstly by the correct pronunciation (line 4) and then by encouraging them to work out what it may mean (line 6). Following Elise’s humorous guess (line 7), and through hand gestures, I indicated a curving, twisting movement leading to Elise’s pronouncement in line 9.

This was the second indication of the camera having a distracting influence on the conversation. Adam kept looking up at the camera, and only continued with their discussion once they were told that they should ignore me and carry on with their task.

1	Adam	Money *(turns to look up at me)*..and – um – what else?
2	Simon	See *(looking at picture)* it's crowded
3	Adam	*Adam looks up at me again and laughs*
4	T2	*I say that they are doing well and to try to ignore me. They did try.*

There was little to be gained from ignoring the students and in context these were slight interruptions to the process.

The next two issues which arose are arguably technical ones, being the need for 'live editing' and where to position the camera.

3. Purpose of filming – the need for 'live' editing

We are used to watching documentaries of classroom behaviour, but for these to have an impact on the audience they often require prior rehearsal and frequently involve the presence of multiple video cameras. While this technique allows a more professional, finished product of events in the classroom it also demands careful editing, a feature which, alongside the rehearsing, results in a film which appears somewhat artificial. This is especially true when students and teacher are made to repeat each instruction and response again and again, until the quality is acceptable for a discerning audience. In my research, however, it was essential to obtain as truthful and spontaneous a set of data as possible, and therefore the lesson had to be captured as it was.

This process involves a form of 'live editing', understood here as the concept of choosing what to record *at the time of filming* rather than later, in the editing suite. In the classroom several initial choices must be made. Should the camera be static or mobile, with or without an operator, and should it be positioned to capture mainly the teacher or mainly the students? The layout of the classroom also needs to be taken into account. In the research school, most of the classrooms are set out with the desks facing the whiteboard at the front, the position from which the teacher usually presents the lesson. A number of the classrooms have the desks in rows, facing the front; some have tables grouped together with students facing each other.

All such choices must be made at the research design stage, with the research questions and analysis requirements in mind. In this research it was important to achieve a balanced view of both students and teacher since the intention was to gather evidence of the impact of the teachers' contributions on students' learning behaviours. Clearly such an aim precludes a restricted focus on one or the other.

4. Position of camera

Similarly it was necessary at the design stage, to weigh up the fact that by moving the camera around the classroom, certain conversations would inevitably be missed. On the other hand, choosing a static camera, focusing on a single table, means that the discussions taking place at the other tables would not be heard. In the research design it is important to establish what questions can in practice be answered, acknowledging the fact that it is not possible to record all of the students' interactions. Such decisions will also have an impact on the analysis stage. It is problematic, for example, to argue that the students in that particular classroom were all engaged in exploratory talk, if only those on the tables being recorded were displaying these characteristics. In the report writing it is vital not to imply more was concluded than was actually viewed and analysed.

The chart below, which indicates the merits and disadvantages of each of these 'live editing' choices, takes as its assumption the fact that there only one camera will be used. The chart has been updated from the original research of Goodman (2006) to include information gathered during this investigation.

Table 4.5: Camera positions – merits and disadvantages

Set the camera on a tripod at the back of the room, behind the students. The camera is static and unmanned and observes what the teacher does as long as the teaching is from the front	
Merits	**Disadvantages**
Students may forget the presence of the camera as unmanned	Not able to zoom in on the teacher as camera is set at a fixed distance
The whole lesson is captured with no live editing choices	If the teacher moves from the one position, they may be out of shot
Is only good for whole class teaching from the front with a teacher focus	Does not capture the students' non-verbal responses as camera is only focused on the teacher
	May be unable to attribute contributions to

	specific students
	May miss verbal interactions between teacher and student
	Will be unable to hear individual conversations over the general conversation in the room during small group or paired activity
	Will miss body language and silent communication from students

Set the camera on a tripod at the front of the room, facing the students. The camera is static and unmanned and captures what the students do	
Merits	**Disadvantages**
Students may forget the presence of the camera as unmanned	Not able to zoom in on specific students
The whole lesson is captured with no live editing choices	Quality of audio not likely to capture all that students say
Only suited to whole class teaching when responses of students are being examined	May miss who says what do to lack of zoom facility and audio quality
	Requirement to ensure the five students are in the area of the camera focus
	Will miss reactions from teacher or non-verbal communication with students
	Will miss non-verbal communication from the teacher
	Will not capture individual conversations in group or paired activity

Manned camera to focus on the class and zoom in on each of the students and teacher as they speak; camera-operator stays in one position	
Merits	**Disadvantages**
Viewer can more easily stay with the action as the decision about what to watch has already been made	Quality of audio may be a problem from students who are further away in the classroom – would require separate microphone and possibly additional operator
Close-ups ensure body language and nuances are not missed	Paired and group collaborative discussions will be missed in favour of general classroom chatter
Good for visual information	

Manned camera – camera-operator to move around the class to different groups as they work on collaborative discussions	
Merits	**Disadvantages**
Conversations between groups and pairs is captured and easy to hear	Choices made by camera-operator mean that some discussions may be missed
Close-ups ensure body language and nuances	Viewing becomes ‘edited’ which means it is

are not missed	not a complete version of what happened – it is what the camera-operator decided was important
Good for capturing specific conversations both verbally and physically	Issues of privacy when camera is close – may work better with long zoom and strong microphone
Would work better with more than one camera	Operator needs to be close to the conversations to limit background noise
	Not possible for operator to be 'invisible'

4.5f Methods of analysis - The Observation Database

Purpose

The Observation Database was designed to enable me to look specifically at those characteristics I had found in the literature. The intention was to see each of them in practice, and then during the analysis to explore any patterns where one behaviour might lead to another.

It was then possible to see clearly the examples of learning talk from both students and teachers. The analytical stage took a more detailed examination into each of these features. The transcripts were read and re-read several times, each with a different 'lens'. For instance, one reading might have highlighted those situations where questioning was involved. In this example, each subsequent examination would scrutinise the type and frequency of each question, what led to it, and any resulting behaviours. One query, for instance, was whether questioning by the teacher led to a particular type of response from some, or all, students and how this response differed when students were working individually or in groups. This rigour enabled a clear connection between the theory and practice, and ensured an objective approach to the exercise; the findings are outlined in detail in chapters 6, 7 and 8.

The intention behind the database was firstly to offer a set of observable characteristics to monitor during the observations, and secondly to add clarity and organisation to the subsequent analysis.

The database was created using those student and teacher characteristics which were part of existing theories of learning, and which were subsequently added to or classified according to my own classroom observations.

Process

The first step was to determine if any particular behaviour from the teacher led to evidence of a particular type of talk from the student. Earlier chapters show the theoretical links between deeper, effective learning and learning talk. The second stage of the analysis used one or more of the four measurement indicators, to establish evidence that these connections also occurred in the classroom.

The lessons were recorded with a video camera, transferred to a password protected disc and transcribed. The transcription was recorded onto an Excel (Microsoft) spread-sheet, which is referred to throughout the thesis as the Observation Database.

After each observation, a transcript was completed and placed within the database. The completed database showed how each of the characteristics was evidenced. The Findings and Analysis chapters set out what these looked like in the lesson, with a description of the context and other notable features.

The process of building the database was as follows:

Table 4.6: Process for building Observation Database

Activity	Observation Database
Initial literature search into 1) Current and historical theories into learning, learning talk, classroom interaction 2) Ofsted, teacher standards and other related government initiatives regarding learning in the classroom 3) Current and historical theories of	Created initial set of characteristics to consider for observations

learning, particularly those which related to cognitive development and theoretical claims of a connection between language / talk and effective learning.	
Interviewing L2L teachers	Those aspects which were common to all four teachers formed the first set of classifications for the database. Using the information gathered so far, the first form of the database was constructed. The characteristics were grouped into student talk and teacher talk.
First round of observations	Each of the characteristics formed a column heading, and the transcript of all of the observations formed the first column. It was then possible to place a tick against each characteristic as it was noted. This activity led to re-classification of the characteristics and elimination of some aspects.
Second round of observations	Following the second round of observations, two activities were necessary: 1) A further literature search to examine connections between what theorists saw as effective learning and the role of learning talk in making this happen. 2) The resulting examination and categorisation of the four main theories which highlighted these connections.
Analysis	These four theories were then used specifically in the analysis of the observations and led to the

	formulation of new models, based in theory and observed in practice.

Figure 4.2 below, represents a sample of how the Observation Database was formed, housing elements across the top row as headings, and the transcript of all the observations down the left-hand side. The elements are described through the analysis chapters, and are finely divided - the colours in Figures 4.3 and 4.4, and the corresponding examples, denoting the division of categories. Following the observations, the initial categorisation produced sixteen classifications although this developed and matured through various connections being uncovered during the analysis stage.

Transcript	Lesson	Teacher	Date	Subject	Timing	Notes	Exploratory talk	Presentational talk	Bringing knowledge from earlier lesson	Bringing existing knowledge	Statement - student *	Whole class response	talk	narrate	explain	instruct	receive, act and build on questions	analyse and solve problems	speculate and imagine
A: A 14 line poem	1	JPO	25th Nov 2008	Eng	1 42					✓	✓		✓						
T: Haiku…	1	JPO	25th Nov 2008	Eng	1 44														
A: 3 line	1	JPO	25th Nov 2008	Eng	1 46		✓				✓		✓						✓
Others all join in saying answers	1	JPO	25th Nov 2008	Eng		Immediately hand up from student A.	✓												
A: No – 4 then 7 then 5…	1	JPO	25th Nov 2008	Eng	1 50	He is asked to answer. He gets it wrong. T repeats the question. Others all shout out answers but he wants to get it right and keeps trying all different answers…	✓				✓		✓						✓
	1	JPO	25th Nov 2008	Eng		A is cross that someone else go there before him													
T: responding to another right answer 5, 7, 5	1	JPO	25th Nov 2008	Eng	1 53														

Figure 4.2: Observation Organisation Chart

Each relevant concept was then examined in the light of other existing research (chapter 3) to ensure a rigorous approach before making the final selection. The final choices of data-collection foci were recorded onto the spread-sheet and then referenced against each lesson observed. The distinctions for student (Figure 4.3) and teacher (Figure 4.4) are expressed below. Maxwell (2005) discussed the need to develop flexible categories initially to ensure the process of grouping and cataloguing was not so restrictive that some 'ideas may get lost, or never developed' (Maxwell, 2005, p.98).

Student																										
Exploratory and Presentational						Pupil Talk													Student questioning						Reflection		
Exploratory talk	Presentational talk	Bringing knowledge from earlier lesson	Bringing existing knowledge	Statement - student*	Whole class response	talk	narrate	explain	instruct	receive, act and build on questions	analyse and solve problems	speculate and imagine	explore and evaluate	discuss	argue, reason and justify	negotiate	social chat	answer direct question with information	Student questioning*	for clarification	for understanding	about the lesson	for knowledge	to guess an answer	Reflection: making connections	Reflection: examples	Reflection re-interpret experience

Figure 4.3: Chart denoting classification for Student

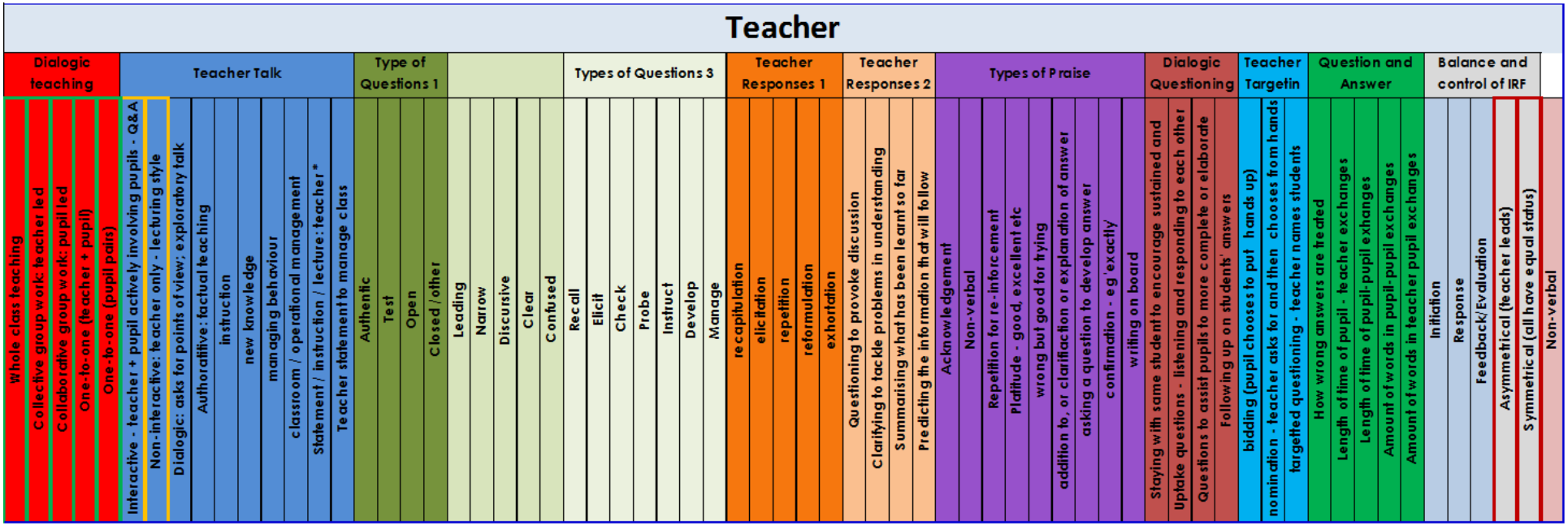


Figure 4.4: Chart denoting classification for Teacher

4.5g How the conversations were recorded for analysis

The transcript formed the first column, and each time a new utterance was emitted it was put into a new row. When analysing the amount of times a teacher spoke to the class, and what form this speaking took, it was necessary to make clear distinctions in the transcripts. A new cell (in the *transcript* column) was used each time the teacher changed the focus of their thought. In the same way, each time a new student spoke this was typed into a new cell. Each cell was then counted as one utterance as shown in the example below.

Table 4.7: Example of transcript denoting amount of utterances spoken

	TRANSCRIPT	Open	Leading	Recall	Elicit	Check	recapitulation	repetition	Questioning to provoke discussion	Acknowledgement	Platitude - good, excellent etc	Questions to assist pupils to more complete or elaborate	Following up on students' answers
Teacher	We ended up in the lesson some of us drawing graphs, didn't we?	✓	✓	✓			✓						
Teacher	OK what were the graphs about please?				✓	✓			✓			✓	
Student	The difference between the UK and Kenya									✓		✓	✓
Teacher	Differences between the UK and Kenya. Right, good.							✓			✓		

The teacher spoke three times in the above example although not all of them were punctuated with responses from the students. Each time a new feature was recognised from the list in the top row, a new cell was used to type the next part of the teacher's words. If the first two utterances were in the same cell, it would not have been easy to determine which feature applied and to which part of the statement. It was also important to have a consistent method by which to calculate the number of utterances, and this was a method which could be applied to each transcript.

For the purposes of this description, a selection of the heading types has been typed into the first header-row. The colours in this row are indicative of the manner of division of all the features of student talk and teacher talk. This matches the divisions in chapters 6, 7 and 8, the Findings and Analysis chapters.

The features which were ticked enabled the analysis of each utterance from the teacher in terms of what feature was being expressed and the relationship each had to the other. In this way it was possible to determine patterns and links between features that may not have been apparent at the time of observation.

The actual headings used are referenced throughout the chapter in the relevant sections. The initial choices were made based on the research outlined in chapter 3. Through watching the recording over and again, and beginning to classify the transcript it was possible to adjust the headings. Some became redundant either because they occurred too infrequently to affect the data analysis, or because they were found to be irrelevant to the way in which the research was developing. The reasons behind omitting some of these elements have been explained in the Findings and Analysis chapters.

Once the set of headings were categorised into sections, the ticks placed on the database began to evidence certain patterns, trends and links. An analysis of why this may have occurred was possible by examining the context of each lesson. It was necessary to examine the student and teacher talk within the context of type of lesson, type of task, and types of interaction in order to draw some conclusions. This created further classifications which have determined the manner in which the findings have been reported.

The Observation Database provided an organised method of both recording and later sorting the data from the lesson observations. The decision not to use one of the various software programmes available for data analysis, such as NVIVO, was two-fold. My competency with regard to the use of excel spread-sheets is solid, and I felt secure in the knowledge of how I could both record and later sort the information I needed. I also knew that having such a large quantity of data, from so many different lessons, would require a clear plan for seeing the patterns and connections that ensued. I knew this would probably

need to be printed out in different formats and was secure in the ability to do this from the Microsoft programme.

The Observation Database developed during the process of watching and re-watching the videos. The finished spread-sheet is one which could be used again, with the headings adapted to suit the research or evaluation being carried out. The facility within Excel to search and sort meant most questions regarding the data could be answered.

Most of the data analysis was carried out electronically and on-screen. However, as a visual learner, I also decided to print out the spread-sheets and lay them out next to each other when looking for patterns. Each aspect was highlighted with a colour and so a glance could show up where clusters of colours lay, and what led to or from these clusters. Once these were spotted it was possible to return to the video to cross-check and investigate further. As different aspects were highlighted the frequencies of events were calculated using the spread-sheet formulae and then compared. For instance one source of investigation was with regard to types of question and the ensuing student responses. Where it was not possible to compare one teacher against another, for the reasons given in earlier chapters, it was possible for example, to examine the amount of talk compared to the amount of questions and the impact this had on the students in that class.

In order to prepare the elements selected for data collection through the observations, it was necessary to organise how these were to be grouped. Initially these were organised simply in terms of those which related to the student and those which were the focus of the teacher in the classroom. Each of the aspects of talk, from both students and teachers were listed in the heading rows; the transcript was then recorded in the first column of the spread-sheet. This could then be sorted and re-sorted to establish frequency, regularity, sequences and classifications.

Chapter 5: Ethics

The context of the research school has a unique part to play in the methods chosen for this research. As a school with Media Specialist Status, in its tenth year, the students and staff were used to having lessons filmed and having cameras around the school. This, and the fact that the research school had been a Training School, meant that lessons were also often filmed for training purposes. As such, all new parents were informed by letter that no film footage would be used in any capacity apart from within the staff body (no social network sites for example). The process described was part of normal procedures in the school, and continues to be adhered to, but was also noted specifically as part of this research. Parents were given the opportunity to state if they wished their child to be withdrawn from any lesson or situation where filming may be taking place. Consequently there was the potential for a list of students where this was the case; at the time of this research, no parents indicated this preference. To ensure specific, additional, notification was given for this research, there were also the required University Ethics Committee letters and information forms as stated in the BERA guidelines (BERA Guidelines, 2008; 2011) whereby parents and students were provided with specific participant guidance and consent forms for this research. (Appendix 7, p.300)

Sampling of staff and students for the research is outlined in the methodology chapter. However the sampling strategy for students led to some ethical decisions, hence its inclusion here. The decision to have just five students in each class to be observed was made as it was arguably easier to watch a small number. Nevertheless, in order to avoid the lessons having any additional artificiality, I allowed each teacher to organise the classroom as they needed for student learning, rather than for the research. This meant that some lessons had the five students all sitting on one table, some with the students deliberately separated so that one sat on each group table, and some where the students were randomly placed. I was given a seating plan for each situation. The difficulties with recording this were evident in that the dialogue which took place was necessarily between one of the five students with other students outside the cohort. Having quickly determined that this would cause difficulties, a letter was sent to the parents of all Year 8 students to inform them of the research taking place, and to offer them the opportunity to withdraw their child from the lessons. The students were also notified at the start of each lesson and given the chance

to voice their concerns. The only concern from students was that the footage would remain confidential, and this assurance was given. No students or parents requested they be removed from the lessons.

My role as senior teacher had also to be addressed, not only by the staff themselves, but also by me. If I were to see a lesson where the member of staff was not teaching in a manner that supported the learning of the students, my response would require consideration. I had made it clear to both the staff cohort and the leadership team that anything I saw as part of the research would be disconnected from my role as Assistant Head. This separated the research from the official, formal lesson observation programme which continued to be managed by the leadership team, and consequently did not rely solely on my contribution.

The participants' consent forms offered the chance for the participants to view the work as it pertained to them and make comment should they feel anything would portray them as differently to normal. There were two lessons where the students' behaviour was not acceptable and the teacher requested the filming was stopped. One was within five minutes of the lesson starting, the other part way through a lesson. The nature of the first part of this lesson still enabled an evaluation of the type of conversation with students which was behaviour-focused and was pertinent to the research in the way it required particular types of teacher talk and student response. Because no judgement was being made of the teacher or the quality of the lesson being delivered, this was agreed (with the teacher) as an acceptable focus for the research.

The issues of anonymity, confidentiality and privacy were straightforward. The essence of anonymity, as cited in Cohen *et al* (2000) was that 'information provided by participants should in no way reveal their identity' Cohen *et al* (2000, p.61). All participants completed a *participant consent form* (Anglia Ruskin University; Appendix 7, p.300) in which they were told that all participants would remain anonymous in the written documentation related to both the data collection and the final thesis. Teachers were guaranteed that no recorded lessons, nor any judgements related to them, would be shared with anyone associated with the school.

> ‘Observations of lessons will be for the purposes of data gathering only. There will be no judgements made on the lesson delivery. Lesson sections may be videoed with prior permission from the participants. This video will be used to aid memory but will be destroyed at the end of the research period and will not be available for anyone else to see.’
>
> (Participant consent form)

Any findings or aspects for further training and discussion would be generalised and anonymised. All recordings and written documentation would be encrypted where appropriate and stored in locked cupboards and on a password protected computer.

> ‘Any ideas, thoughts and feelings which are spoken about in the interviews and discussions will remain confidential, and will not be repeated to other staff or students at the school or in any manner which is not pertinent to the research.’
>
> (Participant consent form)

In all transcripts, written recording of data and analyses and in the final thesis, pseudonyms were used to ensure the anonymity of staff and students.

The teachers were asked formally if they wished to be part of the research process to meet the ‘voluntary informed consent’ (BERA Guidelines, 2008; 2011). This consent form also fulfilled the need to ensure all participants were aware of details of the research process through detailed information sheets which explained their role, thus taking “the steps necessary to ensure all participants in the research understand the process in which they are to be engaged” (BERA Guidelines, 2008; 2011).

There was the need to clarify the position of those students who were not part of the research. This was complex as they were part of the class in the day-to-day function of the school, and as such could not be removed. They were also part of the ‘context but not the participants’ of the research (BERA guidelines, 2008; 2011). As such all parents of Year 8 students were notified that the research was taking place and invited to contact the Head-teacher should they wish to remove their child from the classes. They were also assured that all data would be anonymous and names removed. Pseudonyms were used in written descriptions. No parents removed their children and all those who were part of the research

cohort signed consent forms (Appendix 7, p.300) as necessitated by the research ethics guidelines.

The storage of records is complex in research of this nature, particularly where the *analysis* needed to occur out of the workplace. However the following outlines how "researchers must comply with the legal requirements in relation to the storage and use of personal data" (BERA Guidelines, 2008; 2011) and "researchers must ensure that data is kept securely" (BERA Guidelines, 2008; 2011). The storage of audio-recorded interviews and discussions were transcribed immediately onto a memory device. This device was kept in a locked cabinet. Different devices held different parts of information, so names and interviews could not be matched should any devices be stolen. The more difficult storage was that of videoed lessons. It was necessary to save these onto discs, which were locked away when not being analysed. During analysis periods the discs were downloaded onto the password-protected computer for viewing. Footage did not remain on the computer between work periods, so there was no risk of external, non-permitted internet access – through computer hacking for example.

Chapter 6: Findings and Analysis – Students: types of talk

Introduction

Chapter 3 outlined emerging research which suggested that students need to be given opportunities for meaningful dialogue between each other and with the teacher. Greaney and Rodd (2003) talked about successful students feeling empowered, more able to engage with the lesson and consequently achieve a greater depth of learning. It was established in chapter 3 how research suggested that a teacher working with students in groups was more likely to achieve a range of interactions, with students embarking on effective learning-discussions both with and without the teacher.

A good learning environment was described in an earlier chapter as one where students felt secure enough to take risks, which could manifest itself in being able to ask questions, unpack ideas, solve problems and articulate their thoughts to others. Students who were given opportunities to reflect on their learning through making connections to existing frames of reference were considered those who would achieve deeper learning. To set up conditions for deeper learning the teacher would also need to facilitate analysis, the chance to compare and contrast and to interpret information.

Chapters 6, 7 and 8 present a contextual analysis based on observed evidence of the features which were described in chapter 3. Each observed lesson provided a different context and the examples given offer a range of different patterns and links as a result. For each set of student behaviours, the role of the teacher in initiating these has been examined and suggestions offered as to the impact of the teacher's interventions.

Learning talk was defined through the observations as being extended conversations, dialogic talk, exploratory dialogue, student questioning and student reflection. Chapters 6 and 7 explore each of these in turn, citing examples from the observation transcripts and exploring links to teacher input. In chapter 8, the presence of each type of learning talk is linked to elements of teacher talk and teacher questioning which are described in turn, also supported by evidence from the observation transcripts. The explicit planning for collaborative interaction was examined, and the impact of different types of task on

successful learning talk was evaluated. Although there are suggested links and patterns throughout these chapters, a full analytical summary is provided in chapter 9.

For the purposes of the initial analysis four models were used to make assessments on the level of learning present. These models were all outlined in detail in chapter 3, and are:

1. West-Burnham's and Coates's Models of Learning (West-Burnham and Coates (2005, p.35) - Table 3.2 (p.36; also Table 6.1, p.138).
2. Mercer's and Hodgkinson's 'Four Classes of Communication Approach (Mercer and Hodgkinson 2008, p.21) - Table 3.3 (p.63; also Table 6.2, p.139)
3. Bloom's Taxonomy – affective and cognitive domains (Beirne and Velsor, 2012, p.22) - Table 3.1 (p.26; also Tables 6.3, 6.4)
4. OFSTED's indication of rates progress (2012) – Table 6.5, p.141

1. <u>West-Burnham's and Coates's Models of Learning</u> (West-Burnham and Coates (2005, p.35)

Having established the types of learning talk each of the lessons favoured, it was useful to examine how each of these related to the shallow, deep or profound learning from West-Burnham's and Coates's model below (chapter 3).

Table 6.1: Models of Learning

	Shallow ***What?***	**Deep** ***How?***	**Profound** ***Why?***
Means	Memorisation	Reflection	Intuition
Outcomes	Information	Knowledge	Wisdom
Evidence	Replication	Understanding	Meaning
Motivation	Extrinsic	Intrinsic	Moral
Attitudes	Compliance	Interpretation	Challenge
Relationships	Dependence	Independence	Interdependence

West-Burnham and Coates (2005, p.35)

The information referred to in this chart, and further outlined in chapter 3, was used during the analysis stage. Having collected and transcribed the data and completed an initial evaluation it was clear that there were some instances where the students were evidencing shallow learning and some where the learning and thinking was much deeper. Using the chart above against the transcripts, a mapping exercise was executed to determine when each occurred. From this it was possible to establish certain patterns. The information gained from the pattern matching activity suggested possible links which are outlined throughout this chapter against each illustration.

2. Mercer's and Hodgkinson's 'Four Classes of Communication Approach, 2008

Table 6.2: Four classes of communication approach

	INTERACTIVE	**NON-INTERACTIVE**
DIALOGIC – range of view points	**A: Interactive/Dialogic** Teachers and students exploring ideas together	**B: Non-interactive/Dialogic** Teacher reviews different points of view
AUTHORITATIVE – single point of view	**C: Interactive/Authoritative** Factual teaching with questions to students based on teacher focus	**D: Non-interactive/ Authoritative** Factual lecturing with little interaction - based on teacher focus

Mercer and Hodgkinson (2008, p.21)

The research carried out by Mercer and Hodgkinson regarding dialogic and authoritative teaching styles is summarised in the above chart. Once again this information was examined during the analysis stage rather than during the data collection or recording stages.

It was an interesting activity to attempt to place each teacher into the relevant boxes. What became evident was that with some teachers this was possible and with others they tended towards different styles depending on the type of task in which they were involved, which part of the lesson they were teaching, and the situations they were faced with. This is referred to in greater detail during this chapter.

3. Bloom's Taxonomy – affective and cognitive domains

Table 6.3: Bloom's Cognitive domain

Original Bloom's Taxonomy	Revised Bloom's Taxonomy
Knowledge	Remembering
Comprehension	Understanding
Application	Applying
Analysis	Analysing
Synthesis	Evaluating
Evaluation	Creating

Shallow

Deep

This feature of Bloom's taxonomy, the *Cognitive domain*, is more commonly used in education than the *Affective domain*, (Beirne and Velsor, 2012, p.22) although both have relevance in this research. One aspect which became very clear during the analysis of the data was the role teacher-questioning had in determining student learning and the vital link it had to fostering higher order thinking. The data showed that a lack of questioning of the type referenced in the darker half of the chart above led to shallow, superficial learning and was more commonly found in those lessons which focused more on learning skills rather than content. Some teachers favoured this in the entirety of their lessons. Data suggested that over time the students in these classes had less opportunities for engaging in learning-talk, and made less progress overall than those where deeper thinking questions were applied.

Bloom's Affective domain

Table 6.4: Bloom's Affective Domain

Receiving	the student pays attention
Responding	the student participates in the learning process; has a reaction
Valuing	the student attaches value to information or a situation
Organising	the student relates learning to self; elaborates on learning
Characterising	the student internalises information, which influences personal characteristics

Beirne and Velsor, 2012, p.22

This domain has relevance to the analysis in terms of depth of involvement or engagement. The earlier descriptors of receiving and responding could be measured in terms of the more basic, expected responses of a group of students. The deeper responses of valuing, organising and characterising were evidenced in lessons where the students experimented with their ideas, engaged in a more exploratory approach, often in sustained dialogue with their peers, and ultimately made greater progress. Each was examined against the transcripts and video recordings, to explore trends and contextual links.

4. <u>OFSTED's indication of rates of progress</u>

Table 6.5: OFSTED's descriptors

	Outstanding	**Inadequate**
Achievement of pupils at the school	Almost all pupils, including where applicable disabled pupils and those with special educational needs, are making **rapid and sustained progress** in most subjects over time given their starting points	Learning and progress lead to **underachievement**
	They **learn exceptionally well** and as a result acquire knowledge quickly and **in depth** and are developing their understanding rapidly	Attainment is consistently low, showing little, **fragile or inconsistent improvement**, or is in decline
Quality of teaching in the school	Almost all pupils are making **rapid and sustained progress.** All teachers have consistently **high expectations** of all pupils	As a result of weak teaching over time, pupils or groups of pupils currently in the school are making **inadequate progress**
	Teachers plan astutely and set **challenging tasks**	Teachers do not have sufficiently high expectations and teaching over time **fails to excite, enthuse, engage or motivate** particular groups of pupils

	Teachers and other adults generate high levels of enthusiasm for, participation in and commitment to learning	Learning activities are not sufficiently well matched to the needs of pupils so that they make **inadequate progress**
	Teaching promotes pupils' high levels of resilience, confidence and independence when they tackle challenging activities	

OFSTED Grading Criteria 2012 (extract)

It is not the intention of this thesis to judge the teachers in terms of '*Outstanding', 'Good', 'Need to Improve'* or '*Inadequate'*. However, the criteria used in OFSTED's assessment of the 'quality of teaching' and 'achievement of pupils' (highlighted in the table above) was an important part of the analysis in terms of its standardised approach. To answer the overarching question 'to what extent is it possible to enable classroom teachers to demonstrate specific OFSTED criteria and satisfy the Government's regulated Teacher Standards?' necessitated the assessment of how each criterion could be applied to sections of the lessons, and what might have led to each occurrence. In this way it was possible, through the analysis of the data, to make some proposals as to where the teacher could have accessed deeper learning and helped the students to make more rapid progress, or to cite examples of good practice.

The highlighted key words in the table describe those aspects pertinent to this research which were tracked in each lesson observation.

<u>Sections in the Findings and Analysis chapters:</u>

Chapter 6 Findings and Analysis – Students: types of talk

6.1: Extended Conversations

6.2: Exploratory and Presentational talk

6.3: Types of Student Talk

Chapter 7: Findings and Analysis – Students: questioning and reflection

7.1: Student Questioning

7.2: Student Reflection

Chapter 8: Findings and Analysis - Teachers

8.1: Types of Teacher Talk

8.2: Teacher Questioning

Extracts of lessons have been used in these chapters to describe particular aspects of learning talk, and each teacher is defined by a different colour table for ease of reading.

Section 6.1: Extended conversations

Extended and sustained conversations were suggested in chapter 3 as being evidence of the teacher giving value to the students' responses. Alexander (2008) cited this as a most important element of dialogic teaching, although suggested in his own research, equally evident in *these* data, that it was a rare occurrence to see teachers questioning students to develop 'more complete or elaborate ideas' (Alexander, 2008, p.16).

Examples of extended conversations were analysed, to determine the context in which they occurred and the various factors which could be attributed to them. The intention was to examine if it was possible to create an environment in which teachers could expect these learning conversations to occur.

The first aspects which were explored during the observation analysis were the context of the interactions, and the type of teacher talk which led to extended conversations. The Observation Database listed the following aspects to determine the context of interactions for the purposes of *this* research:

- Whole class teaching.
- Collaborative group-work – teacher led.
- Collaborative group-work – student led.
- One-to-one teacher and student.
- One-to-one student pairs.

The *type of task* was an additional category which was added during the analysis stage, as its importance was noted in the context of what occurred. These are referred to within the body of the analytical commentary which follows.

The second aspect to be examined was the content and structure of the conversation. Figure 6.1 shows the elements in the Observation Database which defined the different ways in which teachers enabled extended conversations.

Staying with same student to encourage sustained and extended dialogue	**Extended and sustained conversations**
Uptake questions – listening and responding to each other	
Questions to assist students to more complete or elaborate ideas	
Following up on students' answers	
Extended dialogue	

Figure 6.1: Extract from Observation Database – extended and sustained conversations

This Figure shows the features listed in the Observation Database which were reported on as being contributing factors to encouraging extended and sustained student conversations.

Many of the extended conversation opportunities and the exploratory nature of 'trying out' ideas, occurred during paired or group work. There were a few occasions where the teacher initiated an extended dialogue during whole class discussion and this was where he or she stayed with one student to further develop their thinking, often using uptake questions (Figure 6.1). There were differences in the contexts which led to the occurrence of each of these conversations, and in how each one impacted on the depth of learning.

The following examples examine those occasions when the teacher encouraged an extended dialogue students, the context in which this occurred, and the impact it had. This was only evidenced in four of the observed lessons, and each was different. Each of the

following examples occurred during *whole class* activity or *teacher and student* conversations.

In Janet's English lesson these types of conversations were quite extensive and initiated equally by the student and the teacher. In David's Geography lesson it occurred when a student required further information and continued asking questions until satisfied. In Sandra's Science lesson, where the class had been discussing a topic in pairs and small groups, she targeted specific students to ask what conclusions they had drawn and encouraged them to explain their thinking further. Glen's Technology lesson also saw an extended conversation, but in contrast this was through a series of short questions linked to the practical task the students were carrying out.

JANET – whole class

The first extract from Janet's lesson was taken as the class were discussing the poem they had just read. Janet's question in line 1 was an open one, which asked for the students to think deeply about what they had read and to use their imagination to fill in the gaps in knowledge. The second part of the two-pronged question (line 1) told the students that she was asking for their ideas – implicit in this was that there could not be a wrong answer.

(Extract 6.1.1a)

1	Teacher	OK – hands up then. Who do we think the traveller is? What are our ideas? Emma?
2	Emma	A messenger
3	Teacher	A messenger. What makes you say that?
4	Emma	Because he said 'tell them I'm coming' and to - like their family - and to one of their granddads, like…
5	Teacher	Excellent. So what you've actually done there is you've actually done the bit where it talks about analysing the effect of particular things so using a particular word you're 'analysing' it and bringing it back to the poem. That's very good, well done.
6	Teacher	Leah? Who do you think the traveller is
7	Leah	Me and Debbie, we think the traveller is an old friend who used to live there maybe, and like he went off to fight in the war and um is coming back like on a promise to say like 'I've survived'
8	Debbie	But I think also you can't like justify who the traveller is because it doesn't actually specify who it could be, just a traveller. It doesn't have no name, it doesn't give any description apart from the facial expression, I think, and the sound of the voice.

Several hands went up and Janet chose Emma to answer. Emma's reply (line 2) was short. Janet probed further, asking her to justify her thinking (line 3). Emma explained her rationale using a quote from the poem (line 4) and Janet's response was to tell the class why this was a good answer in line 5. Emma's phrasing shows that she was thinking as she spoke, displaying elements of exploratory talk: 'and to - like their family - and to one of their granddads, like….'. This type of talk is examined further in Section 4.5.

Through Janet giving specific feedback to Emma (line 5) she was also telling the class that it was good to analyse 'the effect of particular things' and that 'using a particular word you're analysing it'. The impact of this was that Leah's reply (line 7) needed none of the prompts Janet gave to Emma. She explained who she thought the traveller was, and used a quote to justify her thinking. Debbie, who had been working with Leah, joined in and further developed their rationale. The students here had reflected on the information given by Janet, and used it to reframe their knowledge and understanding of their earlier discussions.

Leah and Debbie had clearly discussed this and come up with their ideas, but Janet's questioning of Emma enabled them to take their thoughts to the next stage, to order them, to rationalise them and to articulate them. This capacity to learn sits within the *deep learning* category of West-Burnham's and Coates's Models of Learning, 2005 (Table 6.1, p.138) and would feed into OFSTED criteria of the students making progress (Table 6.5, p.141).

JANET – Teacher-student

The second example from Janet's lesson described a conversation between her and Denise. This occurred during the period where the class were discussing their ideas in small groups and pairs. Denise called to the teacher to come to talk to her. She told Janet (line 1) what she wanted to say in her answer to the question: 'why do you think the traveller came to the house?' She had not asked the teacher a question, whether her idea was right or wrong for instance, but expressed her thoughts as a statement, with the expectation of an acknowledgement of some kind in return.

Janet's speech patterns with Denise in this context are different to those in the whole class discussion. In extract 6.1.1a, she framed her questioning carefully to prompt for deeper thinking. Here she picked up on the fact that Denise had not asked a question, and allowed her to control the flow of the conversation; her first response was just one word (line 2).

(Extract 6.1.1b)

1	Denise	Miss – um on the – the second one, I've put I think he's come to the house because he wants to talk to the person about something between them
2	Teacher	Yeah
3	Denise	And then on the third one – would it be like a lonely house 'cos no-one was there?
4	Teacher	Yeah. It doesn't say a lonely house, it says here – 'and a bird flew out of the turret' Why do you think … *(unintelligible)*
5	Denise	A church or a castle
6	Teacher	Could be
7	Denise	I think…
8	Teacher	What kinds of houses have turrets?
9	Denise	Mansions
10		*She gets excited now as it starts to make sense – but the words are unclear*

Janet's short 'Yeah' (line 2) had the effect of both acknowledging the correctness of the response, and encouraging Denise to keep talking. Denise's second comment (line 3) was phrased as a question, inviting Janet to join in. Again, Janet used the shortened 'yeah' (line 4) but continued to prompt Denise to explain why she thought the house was lonely. Line 5 was delivered tentatively by Denise and with a facial expression that suggested a lack of clear understanding. Janet's short reply (line 6) encouraged Denise to continue the idea, but in line 7 she was unable to finish the thought and Janet interjected with a further question in line 8. This closed question had the desired effect of directing Denise to the right answer and her reaction suggested that this had helped establish in Denise's mind where the poem was set. Although the words in the recording were unclear, the visual image showed Denise getting excited and starting to write with renewed confidence. The body language during this episode saw both Janet and Denise leaning on the table with

each unconsciously mirroring the other. This, along with Janet's quiet involvement in the thinking process, only probing deeper when invited, (lines 3 and 7) enabled Denise to maintain control of the direction and pace of her learning.

JANET – whole class

The final example from Janet's lesson is taken from a whole group discussion towards the end of the lesson. Many students had been contributing to the conversation and Janet had given time to each to develop their thinking. Line 1 below showed Janet using a similar phrase to a student earlier in the lesson: 'And as me and Alice were saying actually'. She used this to refer back to a conversation she had had with Alice when Alice had called her across to help during the task process. This gave weight to their earlier conversation, and gave Alice the credit for the thought, raising her standing in the class. Janet completed her contribution by reminding the class that there were no wrong answers as the interpretation was up to them.

(Extract 6.1.1c)

1	Teacher	Exactly. And as me and Alice were saying actually, there's no detail about what country this is set in. There's really little detail about what the building actually looks like – and there's turrets. The fact that the ma has a horse. Well that's it. So you could actually *(chatter)* so other than that there's no actual time period that this could be written in. It's written during those world wars, or could have been written during those periods, but it could have been set in any time. So it's all how you interpret it or you think
2	Alice	I think it's older than that. I think it's older than the war.
3	Teacher	Why do you think that?
4	Alice	Well if it was in the 30s, why didn't they use a car why use a horse?
5	Teacher	Well I think cars were quite expensive when they first came out. I'm not certain though.
6	Teacher	OK well moving onto the next one then. Some of you have already said why you thought he came to the house then. That he may be bringing a message to somebody there, he may be a soldier coming back from war. So what sort of house do you think it is? *(pause)*

The impact of this was to encourage Alice to join in (line 2) and Janet probed deeper with her question in line 3. Alice's reply used her existing knowledge to make a connection which had the potential to move the conversation away from the desired route. Janet

brought it back swiftly in line 6, and there followed a further dialogue with two other students explaining what they thought.

It seems that Janet's manner with the class had led to them feeling confident to try out ideas in whole class discussions. This appeared to be due to her ability to let the students lead the direction of their thinking, supporting their ideas with positive, specific feedback and gentle re-direction when they were on the wrong track.

DAVID – whole class

This example of extended dialogue came from one of David's Geography lessons. The dialogue was initiated by Simon as he wanted to find out more information. David was in the middle of a section of whole class authoritative, factual teaching where he was explaining information to the class, when Simon put his hand up.

(Extract 6.1.2a)

1	Teacher	*(continues)* Every country has a developed side to it and a developing side to it, but Kenya is mostly developing. Simon you want to say something?
2	Simon	So it's a bit like – Kenya's a bit like Italy because in the North and South (*inaudible)* because part of it's rich and part of it's poor and in Kenya, part of it's rich and part of it's poor.
3	Teacher	That's true (*inaudible)* The only difference is in Italy, most Italians earn a decent wage, so most of Italy is wealthy whereas in Kenya, most of Kenya is *(inaudible)*.
4	Simon	It's like with Kenya – most people are homeless aren't they?
5	Teacher	I wouldn't say … You have homeless people in Italy, and you have homeless in Kenya and there may be more homeless people in Kenya than in Italy but I wouldn't say most people in Kenya are homeless.

Simon (line 2) wanted the teacher to clarify something for him and tried out his own explanation of the situation to see if it sounded right. The teacher agreed with most of Simon's statement, (line 3) 'that's true', but followed this up with more information to clarify his misconception. Simon continued with his thought process in line 4 as he needed confirmation of his ideas, as evidenced in his question at the end of his statement – 'aren't

they?' David explained the facts through a further comparison with Italy and a clear statement 'I wouldn't say most people in Kenya are homeless'.

This example differs from those explored so far, in that it was instigated by a student. As soon as Simon had finished he looked down at this book to signal that for him the conversation was over and David moved on.

This small section of David's teaching corresponded to the *Non-interactive/Dialogic* quartile of Mercer and Hodgkinson's 'Four Classes of Communication Approach, 2008 (Table 6.2, p.139) where the teacher outlined the different points of view with little interaction from the student. This may be the result of Simon's question being asked in the middle of the part of the lesson where the teacher was delivering information through a lecture style approach; certainly there were other sections of David's lessons where he interacted with the students in a different manner. However the impact of this was that Simon's learning remained superficial. The teacher did not foster any independent learning by asking questions, and gave Simon factual information for which he appeared to have little understanding – hence his continuation of the same thought in line 4. This also met the criteria in West-Burnham's and Coates's Models of Learning, 2005 (Table 6.1, p.138) for *Shallow Learning* and would have been highlighted by OFSTED (2010; 2012) as having evidenced limited progress.

There were only a few observed occasions during whole class discussion where a student initiated the control of the dialogue. This was one, and the others were all in Janet's lesson. They came in the form of student questions and have been given as examples throughout this chapter. On all other occasions in whole class discussion the initiation came from the teacher.

SANDRA – whole class

Sandra's extract is taken from the section of her lesson where the students were working in pairs to answer questions on a sheet Sandra had given out. The introduction to the lesson had been based on factual information about artificial insemination and 'designer babies', and the questions were designed to elicit students' opinions and feelings about the issues

raised. The paired discussions prior to this extract evidenced exploratory talk and deep learning through reflection and interpretation of the information they had.

At this stage of the lesson, Sandra had moved around each partnership and now asked them to share with the class what they had been discussing. Her first question was to Emma, and was directly taken from the question on the worksheet they had been completing. The question (line 1) asked Emma to repeat what they had decided were the reasons for choosing to have a baby. Emma's reply (line 2) was in the presentation style, retelling what she and her partner had written down. Sandra reinforced the reply through repetition and summary of the points Emma had made (line 3 and 5) before moving on to another pair.

(Extract 6.1.3a)

1	Teacher	So - I've been round to everyone - what are some of the reasons someone would normally choose to have a baby - ideal circumstances – Emma?
2	Emma	Um - you might love them - and you want to start a family - your own family
3	Teacher	Yeah - so you need sort of love
4	Emma	Yeah
5	Teacher	Yeah, …caring - yeah - anyone else?

Although there was evidence of deep learning taking place during the paired conversations, this section of the lesson did not achieve any further learning, acting instead as a check on what the pairs had spoken about. For the 10 minutes of this question and answer section therefore, there were some missed opportunities for helping the students to make more rapid and extended progress. This could have been achieved through further questioning to expand on the students' thinking and more sustained conversations by using uptake and follow-on questions (Section 8.2).

The structure of the dialogue remained the same each time Sandra asked a different pair what they had discussed: Sandra asked the opening question, the students responded and then Sandra repeated a summarised version of their answer for the class. When she spoke to Rachel, however, (Extract 6.1.3b) this pattern changed.

SANDRA – whole class

(Extract 6.1.3b)

1	Rachel	You shouldn't need money for it
2	Teacher	So you shouldn't have to pay for it?
3	Rachel	If it's limited then you shouldn't be -
4	Teacher	What do you mean by limited - can you explain?
5	Rachel	Errm - like - Science can only do it a number of times.
6	Teacher	Oh I see
7	Rachel	You should only do it like for people who are ill - like cancer or something
8	Teacher	OK so you think maybe along those lines. So what you need to do you need to read through - you've got A to L - so do you think that it's acceptable for someone to choose their partner? Naturally - you choose the person you want to be with.

Rachel (line 1) made a statement that showed she and her partner had been thinking more deeply about the topic. Sandra wanted to know more, and repeated the statement but in the form of a question (line 2) thus inviting Rachel to continue. Rachel's reply prompted Sandra to ask for clarification (line 3), filling the brief pause at the end of Rachel's sentence.

'Can you explain?' (line 4) is a clear instruction to Rachel to expand on her idea, but Rachel found this difficult. The question was challenging Rachel to develop her higher order thinking skills, thus pushing her to deeper learning. In line 6 Sandra's short response allowed Rachel to try to explain further (line 7). Rather than giving more thinking time to Rachel, however, Sandra intervened (line 8) and appeared to change the subject. She did not dismiss Rachel's ideas, as she prompted the class to 'think maybe along those lines', but returned to the original task sheet and what she wanted the class to do next.

This illustration contrasted to the opening discussion in which the students were involved, which developed deep thinking and an empathetic approach. In *her* questioning she was simply checking they had completed the task, rather than using this as an opportunity to deepen thinking – and learning – even further.

GLEN – Teacher-student

The extract taken from Glen's lesson showed him talking to two students, Trevor and Neil. The task in this lesson was a practical one which involved the students gathering resources from around the room and carrying out a soldering activity. Glen asked Trevor to evaluate a fellow student's work. He did this by asking Trevor a series of questions where only one right answer was possible for each question. The students needed *diodes* to do the task.

(Extract 6.1.4a)

1	Teacher	Right. OK. We've decided we haven't got any diodes.
2	Trevor	Yeah.
3	Teacher	Right. So. She put a resistor in. What's wrong with the resistor?
4	Trevor	It's on the wrong bit. It's meant to be in the gaps.
5	Teacher	Brilliant. Right. It's supposed to be in the gap. There is something else wrong with it as well.
6	Trevor	Oh right.
7	Teacher	It goes the other side because we can't solder…
8	Neil	…underneath.

In line 4 Trevor gave the correct answer and Glen acknowledged the reply reinforcing it through repetition (line 5). He then suggested there was something else Trevor should have spotted. Trevor invited the teacher to tell him the answer by his response (line 6) which Glen does (line 7). Neil, who was listening and watching this conversation, completed the teacher's sentence (line 8) as he recognised what Glen had shown them.

This dialogue echoed the nature of the rest of the lesson which was purely task based, and did not demand more thinking from the students than an understanding of how to safely carry out the activity. Closed questions and teacher instruction was all that was necessary for this type of activity. However it is questionable as to the depth of learning which was taking place. It could be argued that for this subject students were learning skills and did not require higher order thinking to enable this. However, there was total dependence on the teacher as the students needed to go to him for each stage of the completion of the task. They were given factual information by the teacher and the questions throughout the lesson were in the nature of recalling those facts. Although there was evidence of some understanding, there was little development of higher order thinking through application or

analysis. Consequently the learning could be described as Shallow and the progress of the students restricted to the completion of the task.

Section 6.2: Exploratory and Presentational

One of the definitions of dialogic learning suggested that the students needed an opportunity to use exploratory talk. Barnes (1976) described this as the hesitant thinking aloud of pupils during collaborative discussions, the main element being that students could 'try out' ideas in a safe environment (Mercer and Hodgkinson, 2008, p.21). The distinction which became apparent during this research was that exploratory talk occurred when the students were given a chance to discuss ideas without judgement. As soon as there was an element of having to come up with the right answer, they presented the information without expansion. In those cases where the teacher followed this up with further questions and encouraged an extended dialogue, then the students were able to access the deeper learning. In those cases where the teacher left the students' answers as they were first given, the learning on that occasion did not move beyond the superficial.

This section examines *exploratory* and *presentational* talk in whole class discussion and in small group tasks where extended conversations were also sometimes evident.

The following extract was taken from one of Lara's English lessons. The students had been asked to describe pirates in a story they were devising. The act of devising and creating falls into the higher order thinking of Bloom's taxonomy (Table 6.3, p.140) so was challenging the students in the manner of their thinking. The teacher's role was to help focus this thinking and ensure those who struggled with the higher level of thought were resilient enough to remain engaged. One of the ways to do this was to scaffold the learning in collaborative group discussion, from which this example is taken.

LARA

The first part of the lesson was delivered as a whole class activity, where the teacher ensured they all recognised the need to use creative vocabulary in the subsequent task. She then spent some time sharing good descriptive words and phrases they could use. This

extract was from the second part of the lesson and was an activity for small groups; each group received a prompt sheet with aspects for discussion.

The extract below illustrated a student, Annabelle, for whom the higher order thinking was proving a challenge. This extract has been split into three for the purpose of reporting.

- *2. 1a* shows Annabelle's struggle with finding a name for her pirate.
- *2. 1b* illustrates how the group share their thoughts out loud to help build on their own ideas; Annabelle cannot engage in this in the same way as the others.
- *2. 1c* displays Annabelle asking how to go about being creative.

LARA

Looking solely at Annabelle's comments throughout *Extract 6.2.1a*, it was apparent that she was not comfortable in being creative. She initially struggled with finding a name for her pirate (line 1) and then had a conversation with Elsa in lines 7 to 10 where she said that she did not understand her choice of name; she said she 'doesn't get it' (line 9). Elsa had no way to explain it as there was no explanation for imagination – that was simply the name she came up with (line 10).

(Extract 6.2.1a)

1	Annabelle	OK then, what's your one called? What's your – er - pirate called?
7	Annabelle	Oh, that's really good.
8	Elsa	Jane Louise Elven
9	Annabelle	Elven? I just don't get it.
10	Elsa	Elven - I didn't know what to call her

LARA

She proceeded to ask the others about the next question on their worksheet: *describe your horrible deed* (line 13). Sue had an idea that she wanted to use 'torture' and was stimulated to further explanation in line 17 by the comments of Annabelle and Caron (lines 15 and 16). Annabelle had not understood the term 'horrible deed' until Sue's description, and voiced this in line 15. Caron confirmed this with quite a cutting statement in line 16, and then lightened the moment in her response to Sue's suggestion that she would cut off their

hair. What happened next was interesting, as although Annabelle appeared to have struggled with the nature of the creativity she then reacted ‘in role’ and talked about being nice to ‘Sue the pirate’. Elsa joined in with this and they all wrote down their ideas for a few moments.

(Extract 6.2.1b)

13	Annabelle	What's your horrible deed?
14	Sue	Torture. For anyone who gets on my nerves who I don't like.
15	Annabelle	Oh, what you do to people
16	Caron	Yeah, that's the whole point
17	Sue	I cut off their hair
18	Caron	Lovely!
19		*all laugh*
20	Annabelle	I'm gonna be - I'm gonna be nice to you! (Laughs)
21	Elsa	I'll be your Friend!

LARA

Annabelle was still quite insecure with the whole process, and articulated this to Sue, asking her how she went about being creative in Extract 6.2.1c (line 22). Sue did not appear to need Annabelle to finish her sentence - she has understood the question and confirmed this in line 23. Elsa joined in here, as Annabelle asked again about the name. Elsa made a suggestion to help Annabelle, in that she could do the task by describing *her*. In doing this she made it appear more concrete for Annabelle who (line 26) realised she could possibly manage the task. Line 27 shows how far Annabelle had moved forward in her learning, with an acknowledgment that it was due to Elsa’s advice.

(Extract 6.2.1c)

22	Annabelle	Have you just basically described …?
23	Sue	Yeah, pretty much
24	Annabelle	Have you got a name for yours?

25	Elsa	So I might describe Caron and you might describe me
26	Annabelle	Yeah. *(looks at the others who are now writing)*
27	Annabelle	I might just describe - um - you're really good at this - seriously. *(pause – starts to write)*

Without the opportunity for this group conversation Annabelle would not have managed to understand how to approach this creative task. Her learning had been at a different level to the others in her group, but she had made progress in terms of beginning to understand a new approach and to use, and develop, a new skill.

JANET

This extract, taken from Janet's English lesson, was at the point in the lesson where Janet had read the poem to them, while they looked at it on the screen, and she wanted to stimulate them to share their first thoughts.

(Extract 6.2.2a)

1	Teacher	After the first reading, not looking too closely at the poem, what's the general impression? What's it about? Is there anything of the structure that you noticed? Natalie?
2	Natalie	Um – it's telling a story.
3	Teacher	What about?
4	Students	*Students call out:* "a traveller" "horses" "a person" "a traveller, someone who's been travelling"
5	Teacher	OK so it tells the story about someone travelling. Mary?
6	Mary	It's about some person who's knocking on some door - um somewhere, and - um - looking for someone, I guess, because he promised that he would.
7	Teacher	Good, OK. What else – Rachel?
8	Rachel	Well. It's like *(she then responds to others talking to her)* Well it rhymes…
9	Teacher	Yeah
10	Rachel	… but it's not like any sort of structure. It reminds me of the highwayman poem.
11	Teacher	OK. Can you tell me about the highway poem
12	Rachel	OK well right, it's about a highwayman – OK so there's this highway man and he's riding along and he's got this girl with him
13	Students	Oh yeah, I remember that
14	Teacher	So there's a similar theme coming through
15	Students	*All join in*

The first questions in this extract (line 1) offered the class the opportunity for them give their own opinions. There were no expectations of a ‘right’ answer as Janet stated ‘not looking too closely…’ implying that she simply wanted first impressions. The ensuing responses were framed in a series of exploratory contributions.

Natalie’s hesitation (line 2) suggested she was ‘trying out’ the answer. The teacher’s immediate returning question (line 3) encouraged the other students to join in. They did this simultaneously, without the restrictions of the hands-up rule of earlier in the lesson. In this lesson Janet only expected hands-up when she asked closed, test questions. All of her open questions appeared to have the implied understanding that students had the freedom to join in without any limitations, as soon as the ideas came to them.

Janet reinforced their contributions in a summarising statement (line 5). She had listened to them all with a smile on her face, tacitly implying that their contributions, and the manner in which they were being offered, were what she wanted. This statement (line 5) was followed with a request for another student to join in – ‘OK so it tells the story about someone travelling. Mary?’

Mary’s hesitations and casual ‘I guess’ in her contribution (line 6) echoed earlier descriptions of exploratory dialogue. Janet’s praise – ‘Good’ followed immediately by an invitation to someone else to add to Mary’s comment led to Rachel joining in and making a connection to an earlier piece of work they had learned together (lines 10 and 12). Janet’s response to this was to validate its importance by asking her to elaborate (line 11); the other students then remembered this activity (line 13) and joined in.

This example demonstrated a seemingly relaxed, informal conversation which displayed evidence of student engagement and developing their thinking through talk.

Janet’s was the only lesson observed that showed exploratory conversations taking place in whole class situations with the teacher leading the discussion. Janet’s approaches are referenced again at the end of the chapter, as she enabled the students in her class to achieve deep learning throughout as a result of the various teaching methods she used.

JANET

The aspect of student talk described as *'explanations'* occurred in Janet's lessons during group interactions. Both Leah and Debbie in the example below were explaining their thinking to each other. Line 1 was a clear example of exploratory talk. Debbie was stumbling over her thinking while trying out her explanation of the task they had to complete. Leah listened as Debbie tried to order her thoughts and make them fit with what she knew. She described what she believed the teacher had asked them to do '- and they've written about a specific subject but they've left things out that we have to put in with our imaginations'. Leah picked up on this in line 2, and offered her explanation as to who was 'the voice' of the poem.

(Extract 6.2.2b)

1	Debbie	…or something like that – but then – it's a story *(unintelligible – seem to be looking around at what others are doing)* of a soldier (*questioning this as if the rest of the class are all saying it's a soldier)* Yes, I know we've got to use our imaginations and stuff but – *(stumbles over words – trying to work this out)* – somebody has written this – why this is happening to them or what they're thinking. What they've seen, what they've heard about – and they've written about a specific subject but they've left things out that we have to put in with our imaginations… But we're not sure entirely what he's talking about – it's like all poems really – unless it's like a direct like – flower *(not clear)*
2	Leah	Cos it's written like somebody's watching it, it's like that person was in the castle.
3	Debbie	Maybe – yeah, it depends really doesn't it? Because the time period he was writing it was the world war and he could – something like that – or say – the person got paralysed (laughs) and he can't move and he's sitting like up in the attic – and his mouth is paralysed too! So you know – screw the talking
4	Leah	Yeah – bang goes that theory!

This thinking was quite advanced in terms of examining the poem's 'voice', especially as the teacher had simply asked them to consider what the poem was about. Through their discussion Debbie and Leah had applied what they knew – that it was written in a world war – and used their imaginations to speculate about the content of the poem. Making these connections took them in a different direction – to the poet himself – and Debbie picked up on this, imagining the poet sitting in an attic, writing (line 3). They appeared to realise it

was not the direction they wanted to go in, and Leah finished this line of thought quite succinctly in line 4. Each of these aspects of student talk, which are described more fully in Section 5.3, can be classified as deep learning according to West-Burnham and Coates's 'Model of Learning' (2005).

DAVID

A slightly different approach came at the start of David's Geography lesson. There was little opportunity for exploratory talk in this situation. The teacher started by reminding the class what they been learning in the previous lesson about 'developed and developing countries' and then asked a question about this (line 1). The first response from Simon (line 2) was read from his book – so the teacher asked a question to prompt further thought (line 3). Simon's response was to search for another answer in his book (line 4).

(Extract 6.2.3a)

1	Teacher	OK. What can we - what do you know about Kenya so far? Is Kenya a developed or a developing country? That's what we were doing last lesson. Is Kenya a developed or developing country? And do you have a reason for that? Simon go ahead.
2	Simon	Er … (reads) Kenya is a developing country because they have very little money which means there is very little work
3	Teacher	How do you know?
4	Simon	Because, when we looked at our fact file, that we made, it said (reads) there's - oh where is it - oh yeah, there's like little money, like 4,100 US dollars GNP.

The teacher in this lesson had clear expectations for the students' answers. They had been learning facts in the previous lesson and been asked to recall them at the start of this one; factual recall being an element which meets the 'shallow learning' classification. Had the students been involved in deeper learning they may not have been so dependent on the text book to provide the answers. The need to produce a correct answer also led the students away from the *exploratory talk* and into Barnes's (1976) *presentational model* of communication (Barnes, 1976, p.108).

PAUL

The extract below is an example of the form of questioning from the teacher and short statements in response by the students which, in its entirety, lasted two minutes. Each contribution was met with a reinforcement of accuracy through the teacher's repetition of the answer (line 4 and 7) and each fitted into the *presentational model* of reply.

(Extract 6.2.4a)

1	Teacher	What was the real key word that we spent the lesson *(inaudible)* trying to compare the two countries?
2	Teacher	Um - Whose hand was up first? Go on then Gina
3	Gina	Development
4	Teacher	Right, 'development'. OK?
5	Teacher	So er how well developed did we say that Kenya is? Compared to the UK or just in general. Claude?
6	Claude	Well I can see *(inaudible section but it is clear he is reading figures from the book)*
7	Teacher	OK, good, so talking about the number of TV sets that people have.

The first question Paul asked was to recall a key-word from the previous lesson. There could only be one right answer here, so there was no need for discussion. Gina had the answer, which showed that she had a good memory. Had the teacher wanted to test her 'learning' in addition to her memory, he could have followed this up with a question to encourage Gina to offer her definition of the word, or to use the word in a sentence – similar to the question he then asked Claude. Just like David's earlier extract, Claude searched for the answer in his book. Even though this is a short extract it would be difficult to assess the level of learning of Gina and Claude as all they had demonstrated was an ability to remember and to find information in a book. To measure *learning*, and to initiate a deeper response, the teacher would have needed to ask more probing questions.

Exploratory talk in itself is not necessarily deep learning or higher order thinking. However, the *process* of discussion and trying out ideas was a starting point for many students – like Annabelle. The pursuit of sharing ideas and bouncing thoughts around,

moved thinking on – and when this was done within the structure of a planned and purposeful task, set by the teacher, then it was more likely to lead to deeper learning.

There were noticeable links between teacher talk and exploratory dialogue. When the teacher asked questions which stimulated higher order thinking or encouraged a sustained conversation with students, the opportunity was there for the students to try out ideas beyond the superficial. When they felt comfortable to take risks, as evidenced in Janet's class, they were more likely to try out ideas in front of the teacher. In small group tasks the nature of the discussion was dependent on the students being empowered to control the direction and pace of the learning. The tasks which offered questions or 'prompts' were those where the conversation was structured but the content free-flowing, and exploratory conversations were evidenced.

Further discussion about types of teacher-talk and questioning is found later in this chapter.

Section 6.3: Types of Student Talk

Mercer and Hodgkinson (2008) described features of successful learning talk (chapter 3) and a chart was created to examine the presence of these in the lesson observations.

Argue, reason and justify	**Types of student talk**
Discuss	
Analyse and solve problems	
Explain	
Receive, act and build on questions	
Narrate	
Negotiate	
Speculate and imagine	
Explore and evaluate	
Answer direct question with information	
Instruct	

Figure 6.2: Extract from Observation Database - Students' Learning Talk

These were listed on the Observation Database (Figure 6.2, p.162) and each time an utterance fitted the relevant description, a tick was placed in the column pertaining to it. At the end of the data-collection it was easy to note the patterns of those most commonly used, and those whose occurrences were infrequent.

The 11 features of student talk that were present in the observed lessons have been expressed in the pie-chart below in terms of the amount of lessons in which they appeared – the larger the slice, the more lessons each occurred in.

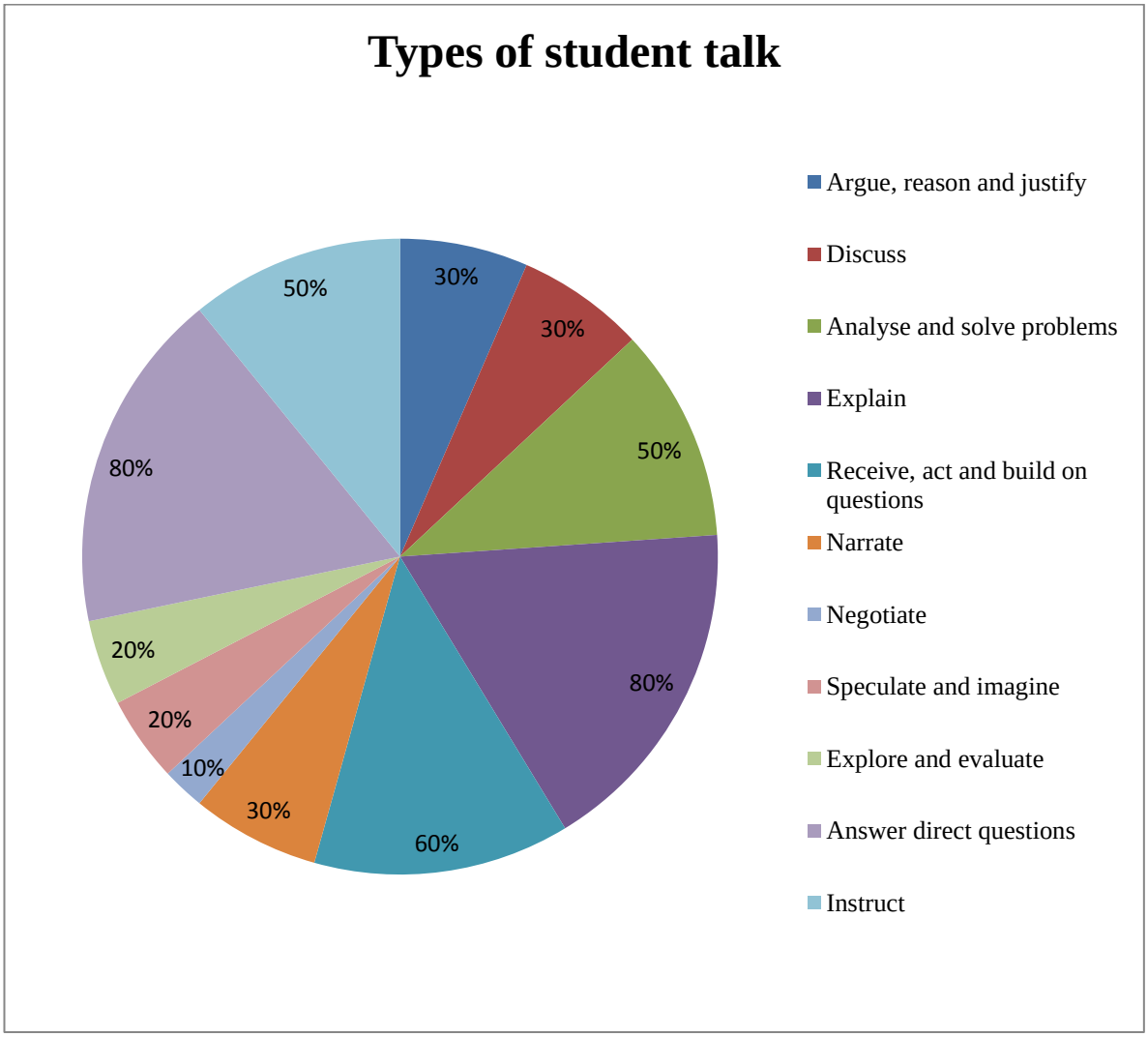


Figure 6.3: Features of learning talk expressed in a frequency pie chart

The numbers describe the percentage of occasions when each feature occurred in the lessons observed. For example, it is possible to see that talking to 'explain' and to 'answer

direct questions' occurred in more of the lessons than, for example, talking to 'speculate and imagine'. For some of these elements it is expected that they would only feature in specific types of lessons – talking to 'speculate and imagine' occurred in the Science and English lessons for instance. Many of those listed however were not restricted to types of lesson or task, and when one considered the level of thinking required for the higher-order activities such as to 'analyse and solve problems', it was useful to examine when they occurred and how the teacher either provided opportunities for, or inhibited, this deeper learning.

The presence of each of the types of talk is discussed below, and the role of the teacher in enabling them is examined. A table was created which expressed the level of frequency of different types of teacher talk. Four teachers had the greatest percentages in two or more areas; extracts used in this section are from Janet, Sandra, Paul and Kathy.

Table 6.6: Percentage of utterances of types of teacher talk

	Argue, reason and justify	**Discuss**	**Analyse and solve problems**	**Explain**	**Instruct**	**Receive, act and build on questions**	**Narrate**	**Speculate and imagine**	**Explore and evaluate**	**Answer direct questions**	**Total utterances**
Janet		5 6%	7 8%	18 21%	1 1%	15 18%		24 28%	1 1%	14 16%	**85**
Sandra	4 13%	16 53%		9 30%		1 3%	3 10%	1 3%			**30**
Paul	16 18%		19 22%	6 7%		3 3%	4 5%		19 22%	19 22%	**87**
Kathy				1 7%						13 93%	**14**

Table 6.6 (p.164) shows the percentage of utterances in the four teacher's lessons which were attributed to each of the aspects of student talk in this section. Those which have been selected as examples below have been highlighted.

Undoubtedly the lesson where the widest variety of learning talk was evidenced was Janet's English lesson. Her contribution in terms of purposeful planning was vital to support the types of learning opportunities her students were offered. The largest proportion of learning talk in this lesson fell into three main categories: *explain; receive, act and build on questions; speculate and imagine.*

Table 6.7: percentage of utterances of types of student talk

Type of student talk	**Percentage of total utterances noted in lesson**
a) Explain	21% of student utterances
b) Receive, act and build on questions	18% of student utterances
c) Speculate and imagine	28% of student utterances

An example of each of these types is presented in the extracts below and examined in greater detail.

<u>JANET</u> – Talking to 'explain'

(Extract 6.3.1a)

1	Leah	*(calls out)* Miss, how many lines has it got altogether?
2	Teacher	Altogether? I don't know. We can count them. *(does so)* 36 – so it does work.
3	Leah	Yeah. No – just checking to see if it did actually work, 'cos sometimes you say that there's the rhyme scheme but then sometimes there's not. Like sometimes it doesn't fit with the poem.
4	Teacher	OK – well yeah, do we agree with it then?

At this stage of the lesson Janet was explaining how the rhyming scheme of the poem worked. The class were finding the concept difficult to understand and Janet had been patiently explaining it in different ways to help them. Some of them had become a bit fidgety as they could not engage with the topic. Leah called out this question (line 1) during Janet's explanation. The student had taken the initiative here and was asking a question to clarify her understanding. Janet's response (line 2) was to use an uptake question - 'Altogether?' which had the intention of both acknowledging Leah's question

and helping her to understand what Leah needed. The rest of line 2 created a feeling of sharing the learning as she said ‘we can count them’. Her dialogue with Leah created a two way, extended conversation and was spoken in such a way that it suggested to Leah that the conversation was expected to continue. Leah explained her reasons in line 3.

For Leah this was a good example of talk for learning: she was able to articulate her thinking and at the same time explain what she was finding difficult to comprehend. There are many different scenarios of how this conversation could have played out. A teacher may have dismissed the question as one which interrupted the flow of the explanation, and told Leah off for calling out; or may have considered the question as unrelated to the flow of teacher-thought and rejected it as irrelevant. Either of these could have caused Leah to switch off or become belligerent – and potentially restricted the learning opportunity that Leah required at that stage.

JANET – Talking to ‘receive, act and build on questions’

In this extract, taken from the whole class discussion, the teacher was encouraging Rachel to develop her line of thinking. Rachel’s first contribution (line 1) simply explained that the poem rhymed. It could have been left there, but the teacher wanted Rachel to expand on this; Janet’s ‘yeah’ (line 2) led Rachel to develop her earlier statement.

Through this prompting, and without knowing where Rachel’s thoughts would go, the teacher helped Rachel to make a connection to prior learning. This was a small risk for Janet, as she did not know what was in Rachel’s mind. At the worst she may have needed to redirect the learning back to the original course of the lesson, but in this case it proved to be a useful detour. Janet’s acceptance of the students following their own lines of thought (line 4) was one of the features that resulted in the propensity for so much learning talk being apparent in this lesson.

(Extract 6.3.1b)

1	Rachel	Well. It’s like *(she then responds to others talking to her)*Well it rhymes,
2	Teacher	Yeah

3	Rachel	… but it's not like any sort of structure. It reminds me of the highwayman poem.
4	Teacher	OK. Can you tell me about the highway poem
5	Rachel	OK well right, it's about a highwayman – OK so there's this highway man and he's riding along and he's got this girl with him

As discussed in chapter 3, the brain makes connections to help make sense of new knowledge. Janet's question to Rachel asking her what she could remember about the other poem (line 4) led Rachel to further embed the connection, thus placing the new learning into a context that made sense to her. The reaction of the rest of the group immediately following this extract showed that it helped make the connection for many of them too, and the learning was able to advance further forward.

The dialogic classroom, as outlined in chapter 3, includes student questioning and student reflection as important features. The occurrences of 'receiving, acting and building on questions' (Figure 3.6, p.53) often linked to students' reflections through 'making connections' (Figure 3.9, p.58). These two quotes were in response to Janet's question about the role of a narrator.

> 'Is it when someone that acts when someone reads out the story?' (Emma)
>
> 'Is it like when they tell a story over other two people, something like that?' (Alice)

Both students had connected to previous learning experiences and made these associations to help them make sense of the current topic. Burnham and Coates claimed that the 'deeper the connections, the deeper the learning' (Burnham and Coates, 2005, p.129). The teacher's facilitation of this discussion through her questioning meant that these connections were made available to the rest of the class and as such moved everyone's learning in the right direction.

JANET – Talking to 'speculate and imagine'

By far the largest type of learning talk in Janet's lesson was talking to 'speculate and imagine'. 28% of the students' utterances fitted this description – and 70% of *these* were also indicative of students reflecting on their learning. There was an equal spread of this

type of talk evident in both whole class discussion and in paired and group discussions. In whole class activity, this could be directly attributed to the manner of questioning. In the latter situation this was as a result of the task they had been set which encouraged them to answer a set of questions by using their imaginations. The initial class discussion provided the model for their learning talk, which they then imitated when in their non-teacher-led groups.

The extract chosen to demonstrate this type of talk (Extract 6.3.1c) was taken from a small group discussion. There was evidence of exploratory talk in line 1, where Leah offered incomplete sentences, and a disjointed set of thoughts. In this conversation Leah took the lead which was not her usual position. Her opening statements (line 1) were not pre-planned, but were expressed as directly as she thought them.

(Extract 6.3.1c)

1	Leah	It could be like anyone, depending on what interpretation you've got. So I think, in my mind, I think this is partly right and partly wrong. *(looking at her work)*. Because um... because it's got like – it could be (unintelligible)… but then it couldn't because it could be a messenger or it could be a warden but then there's definitely ghosts in this, which I believe, because it's got the 'only hosts of phantom listeners' so – but then it's been deserted, the castle – it's definitely a castle because it's got all the detail
2	Susan	The turrets
3	Leah	Yeah, but then, I'm not entirely sure who the traveller is, because – you don't really know, do you. It depends what you believe in your mind, but – I don't know what I believe.
4	Susan	I think it's someone who they knew before he went away because -
5 6	Debbie Susan	…because it's like 'tell them I came' And they obviously know him and they definitely know the person who lives there and the traveller – but you don't know for sure what, and why… the traveller has come. It could be
7	Leah	I think it's just to let them know that I might have survived the war and all my friends have or haven't, stuff like that
8	Debbie	Yeah, yeah.
9	Susan	Kind of a messenger, kind of a friend
10	Debbie	Yeah, but – yeah, actually got a point, yeah because they could be saying yes, I survived from the war, and say they've been evacuated to the country or something …

She was clearly confident in the group with which she was talking, to take the risk of not ‘presenting’ her information in an organised form. Susan’s contribution, line 2, offered an example to back up what Leah had been saying. Leah was keen to continue with her stream of thought in line 3, and was comfortable in saying that she did not have any idea who the traveller was. She vocalised information from the teacher who had told them that this was their interpretation, thus giving them permission *not* to know. As a result of this they were empowered to share their ideas to work it out.

Susan started this off in line 4, pausing after ‘because’ to invite the others to join in with their ideas. This was noticed frequently in these observations, where one started the sentence and the other finished it. It was seen particularly in group activities where there was no expectation of a *right* answer, but where they were to find their own answers through discussion. Debbie, who had been listening to the dialogue, joined in (line 5) to complete Susan’s thought. Susan started her next utterance with ‘and’ which showed she had accepted Debbie’s contribution which she added to in line 6.

Leah’s contribution in line 7 demonstrated a new, empathetic, involvement in the task drawing on higher order thinking processes. She had taken on the role of the character they were discussing and talked in the first person: ‘just to let them know that I might have survived the war’. Debbie and Susan both positively acknowledged this statement (lines 8 and 9) with Susan presenting a statement which summarised their thoughts so far. This gave Leah the opening to join in again, also ‘in-role’, in order to confirm how this fitted into their existing knowledge of the poem.

At the start of this extract the students were ‘trying out’ their thinking and sharing muddled ideas. By the end of this discussion it was clear that through learning talk they had managed to formulate a clear idea of who the protagonist may be and could justify their thinking with lines from the text. The evidence of deep learning is provided by the students’ internalising the thinking and talking ‘in-role’, and through a shared analysis were able to identify aspects of the text to make inference through a growing understanding. OFSTED would have identified the good progress made by the students through this discussion as being a positive element of the lesson.

SANDRA – Talking to 'discuss'

Sandra's Science lesson contained two main elements in terms of student talk: talking to 'discuss' and talking to 'explain'. Whereas in Janet's English class the evidence of 'explaining talk' was evenly spread in both whole class and small group activities, in Sandra's class this talk favoured the small group interactions. Student 'discussion' however took up 53% of the student utterances and was evident in both small group dialogue and whole class conversations. The example below was taken from a class discussion to illustrate *talking to discuss*.

(Extract 6.3.2a)

1	Teacher	So - I've been round to everyone - what are some of the reasons someone would normally choose to have a baby - ideal circumstances - Emma?
2	Emma	Um - you might love them - and you want to start a family - your own family
3	Teacher	Yeah - so you need sort of love
4	Emma	Yeah
5	Teacher	Yeah, …caring - yeah - anyone else?
6	Peter	To carry on your family name?
7	Teacher	Yup - to carry on your family name.
8	Stu	Pass on your genes?
9	Teacher	Pass on your genes - excellent - and your characteristics. OK

Sandra wanted the students to share what they had been discussing in the earlier part of the lesson. She repeated the question (line 1) and chose Emma to answer. The teacher had been specific in using the same question they had when they were talking through their ideas thus implying that she expected a summary of their thoughts. In this way their answers provided an end result rather than forming part of the learning process.

This contrasted to Janet's example where the students were trying out ideas until they came up with one which sounded right and then fitted it into their joint sphere of knowledge to test their theories. In Sandra's case, the students had already had the opportunity to

formulate their ideas based on the facts of the preliminary part of the lesson. This was the chance for them to report back on those ideas.

Emma's summary of her group's answer (line 2) was 'you might love them - and you want to start a family - your own family'. It was delivered in a presentational model as a 'rehearsed' statement. Sandra's reply (line 3) was to acknowledge, 'sort of love'. Emma's acceptance of this (line 4) prompted Sandra to add to it, 'yeah … caring …' (line 5) before moving on to the next person.

Once she had established this pattern, the students subconsciously accepted the routine and mentally prepared to offer short statements without explanation or justification as this had not been asked for on the first occasion. Sandra confirmed that this was the limit of her expectation as she praised each statement with an acknowledgement 'yup' (line 7) or a single word of praise 'excellent' (line 9).

The opportunities for learning talk in this lesson came in the small group discussions. This was where there was a chance for student to share ideas and form opinions. The whole class question-and-answer session which was illustrated in the extract above acted as a test of this rather than a chance to further build on the learning.

PAUL – Talking to 'analyse and solve problems'

One of Paul's Geography lessons favoured three types of learning talk, talk to

- analyse and solve problems
- argue, reason and justify
- explore and evaluate

Each of these appeared fairly equally, with a slight bias in favour of *'argue, reason and justify'* (22% of utterances) *and 'explore and evaluate'* (22% of utterances).

'Analyse and solve problems' provided 19% of the student's utterances; all of these occurred during small group conversations. The extract used to illustrate this showed Fran and Elise starting to discuss where the rapids were situated on their map. For the first 6

lines, the sentences were fragmentary but each one flowed readily into the other without pause. Fran's opening statement (line 1) was phrased as a question, asking for confirmation from Elise. They were both leaning over the text book, focused on understanding the symbols in front of them. This lesson was the second in a series of lessons looking at the different courses of a river – upper, middle and lower. Consequently they were making connections to earlier learning to try and make sense of the new knowledge which they were expected to find in the book.

(Extract 6.3.3a)

1	Fran	Rapids are here aren't they?
2	Elise	Rapids would be up here, wouldn't they? Or would that be a waterfall?
3	Fran	Oh yeah.
4	Elise	The waterfall is there, that's the, that's the
5	Fran	Would you, would you… I'm not sure where the rapids…
6	Elise	I think the rapids
7	Gill	(joins in) I still think the rapids would be around here
8	All	*All overlap* - Yeah, I think they're there.

This contrasts to both Janet's and Sandra's lessons. In the former, they had read a poem, discussed certain aspects of it, modelled the approach to their investigation, and then embarked on a task which required them to use their imaginations to complete. Sandra's lesson offered them a set of facts which they then had to use to formulate their own opinions. In *this* lesson they had a set of questions for which they had to find the answers. This learning was through investigation and the pursuit of problem solving. Consequently the nature of the dialogue was one which necessitated them to base their analyses in the evidence in front of them.

Elise tended to take the lead in coming up with possible conclusions (line 2 and line 4). The role Fran adopted after her initial question in this discussion appeared to be to agree, question and move the learning forward. Her second utterance (line 3) was an acknowledgment that Elise may have found the waterfall. It was not clear whether her 'yeah' was agreeing to the fact that they were looking at the rapids or a waterfall, but it

was taken by Elise as a cue to continue to work out the problem. Elise did not complete her sentence in line 4 although needed to say something to show she was still involved in the task. Fran joined in (line 5), but had no information to bring to the discussion, so her contribution was more by way of encouraging Elise to keep going. Elise was still unable to find the answer, evidenced by an incomplete sentence in line 6. Gill joined in at this stage, with a clear suggestion with which the others quickly agreed (line 8).

This conversation was noteworthy as on the first glance it appears that nothing meaningful is being said as no-one could find the answer. However, the importance for the students' learning comes from the *process* of discussing and trying out their ideas. In this way they are learning how to look for the answers, how to learn new information. So even if they were unable to solve the problem on this occasion they were learning how to approach tasks of this nature in the future. This learning talk, along with the ability to reflect upon their learning was considered particularly beneficial for the 'life-long learner' (West-Burnham and Coates, 2005, p.122).

PAUL – whole class activity

It was useful to examine why the students did not use any of these aspects of learning talk during whole class activities in Paul's lesson. Below is an examination of the nature of Paul's questioning at the start of the lesson and his response to the students' answers. Following this extract, the students watched a video and completed worksheets based on checking their understanding of the information given. The extract does not attribute the dialogue to named students as the answers were mainly called out by the class and this example is intended to show the nature of the question and answer routine.

(Extract 6.3. 3b)

1	Teacher	… and so the starter activity was to check out what people had been learning recently.
2	Teacher	Right, so - your answers. Right I'm not going to ask you to swap over, or anything, but just call out. Don't shout out but call out.
3	Teacher	*Reads:* Land is steep.
4	Students	*(some call out)* Upper
5	Teacher	All those people who said upper, well done.

6	Teacher	The river meanders…
7	Students	*(some call out)* Lower / middle
8	Teacher	Middle - whoever said lower - that's correct too. OK - that's moving on … But middle, that's what we're really looking for.
9	Teacher	V shaped valleys…
10	Students	*(some call out)* middle / upper
11	Teacher	Upper
12	Student A	Told you it was upper
13	Teacher	OK – 'cos that's where it's steepest
14	Teacher	Flatter land?
15	Students	*(some call out - mixed responses)*

The aim of the questioning was to 'check out what people had been learning recently' (line 1). This was a clue to the students as to the type of questions he would be asking. The students may have predicted that they would have to bid for their chance to answer, by putting up their hands (as described in chapter 3). However Paul explained (line 2) that he wanted them to call out their answers. This signalled that perhaps he was not interested in who got which questions right, simply that he could ensure the right answers were given to the whole class so they could move onto the next task.

This illustration is intended to focus on Paul's response to the students' answers. Line 5 showed Paul acknowledging 'all those people' who got the answer right, and offered them praise in the form of a 'well done'. It was explored in chapter 3 that specific, targeted praise was one of the best forms of supporting students' progress. However this unspecific and generally attributed 'well done' may have had the effect of giving confidence to those who were correct but not having specifically enhanced their learning.

The teacher's response in Line 8 may have be confusing for some of the students as it was not clear which of the two terms was the correct answer – middle or upper. His reply (line 13) to the student who told them 'it was upper', in line 12, was to begin to explain why 'upper' was the right answer. There was an opportunity to develop this into a short dialogue with the student concerned, which may have developed his learning further, but this was lost in favour of continuing the run through the questions.

It is clear from this analysis that the opportunities for students using learning talk during this activity were restricted by the teacher's decision to ask quick fire questions in this manner. In essence the option to conduct the question-and-answer session in this way can be appreciated as Paul required the students to learn facts in their starter activity which they would need for a later task. However this whole class activity simply required the students to call out the right answers to his closed questions which did not require, nor develop, higher order thinking skills, and consequently would be categorised as shallow learning according to West-Burnham's and Coates's (2005, p.35) Models of Learning (Table 6.1, p.138).

KATHY –Talking through 'answering direct questions'

David and Kathy's lessons saw the majority of student talk being evidenced through the students answering direct questions. In Kathy's lesson 93% of the responses fitted into this category. David's students were involved in more of a range of student talk, with 69% being attributed to this classification. Most of the teachers observed had occurrences that fitted this category, but in David and Kathy's case, this matched the majority of their student talk.

(Extract 6.3.4a)

1	Teacher	It was warm, wasn't it? Now did we say that was exothermic or endothermic? Warm.
2	Sandra	Endothermic
3	Teacher	Was it giving out heat if it was warm?
4	Sandra	Exothermic
5	Teacher	You still going for exothermic? *(student nods vigorously)*
6	Robert	*(calls out)* Endothermic.
7	Max	It's in our books
8	Teacher	You've got it in your books, yes, well done. Max has pointed it out. I think we did write it down. Anthony?
9	Anthony	Exothermic.
10	Teacher	Exothermic. Yes. It's exothermic isn't it, when it's warm and it's giving out heat.

Kathy asked a series of questions to determine whether the students could remember the meaning of the two terms they had learned in the previous lesson: endothermic and exothermic. The students had written the experiment in their books but were trying to remember which term applied to which definition. The question in line 1 was asking for a single answer, which measured 'recall of facts', demanding a revisiting of previous shallow learning. The students were struggling to remember this, suggesting that the learning had not been embedded from the previous lesson.

Kathy asked if the warmth indicated exothermic or endothermic. This extract was the second part of a longer set of identical questions where the students had already been calling out one term then the other, waiting for the teacher to tell them which was right. They were totally dependent on her for the answer, having no recall of any other thinking that may have been applied to the experiment to trigger a memory. Sandra (lines 2 and 4) tried both terms without the teacher acknowledging either one as being correct. In fact when Sandra gave the correct answer the teacher's reaction (line 5) was to question it in such a way that Robert believed she must have been wrong, hence his guess in line 6. Max's contribution brought the questioning to an end by reminding the class that they wrote the answer down: 'it's in our books'. Eventually the teacher agreed that they wrote it down, and asked Anthony to read out the answer. It is not clear whether the students would leave *this* lesson fully understanding the answer as there was limited progress evidenced from this section of the lesson.

At no time did the teacher encourage the students to think differently about the answer. She was testing memory recall. There are different approaches she may have used to develop deeper learning: encouraging them to reflect on a connection they had made during the experiment or discussing in groups before sharing their answers. There were two elements that may have restricted the students' thinking here: the type of questioning she used and the nature of her responses. These aspects are examined further in chapter 8.

Chapter 7: Findings and Analysis – Students: questioning and reflection

Section 7.1: Student Questioning

The research described in chapter 3 suggested that student questioning was an important element of the dialogic classroom. Barnes (1976) suggested that students who asked questions would 'gain more from lessons than the child who listens passively' (Barnes, 1976, p.55) and that through asking questions the students would be able to access deeper learning experiences. Mercer and Hodgkinson (2008) advocated that it was part of the teacher's job to create an environment where students felt safe to ask questions (Mercer, 2008, p.14).

The Observation Database listed the following five areas to examine during the lesson observations. As with other aspects, each time a student asked a question a tick was scored in the appropriate column.

For clarification	**Student questioning**
For understanding	
About the lesson	
For knowledge	
To guess an answer	

Figure 7.1: Extract from Observation Database - Student Questioning

Following the initial analysis this was further refined into the list below:

- Operational questions (extracts from Lara, Paul, Janet, Ruth).
- Responses to teacher questions (extracts from David, Glen).
- Questions to clarify (extracts from Paul, Sandra, Glen).
- Questions to develop knowledge (extracts from Janet, Lara, Paul, Sandra).

The extracts below examine some of the occasions where students ask questions, noting the context and links associated with this.

LARA – Operational questions

Questions for operating within the classroom tended to occur when students were involved in practical based tasks. In one of Lara's English lessons the class were involved in a task which required them to stick the poems they had been writing onto a wall display. 'Can I have some left-handed scissors?' (line 4) was in response to the teacher asking if any of them had any questions (line 2).

(Extract 7.1.1a)

1	Teacher	Just very quickly, 'cos I know you're itching to start. All the glues I have put out on the table, OK? Everything you have should be out on the table. If you need anything you can put up your hand, but I don't really want you wandering round 'cos there's too much stuff going on. So if you need something, ask - unless you're coming up to get paper.
2	Teacher	Anybody any questions?
3	Teacher	Yes, Francis
4	Francis	Can I have some left-handed scissors?
5	Teacher	Yes, I have left-handed scissors. I'll get you some.
6	Teacher	*(inaudible)* If you're really clear on what you're doing, can I have a 'thumbs-up'?
7	Teacher	If you're not clear what you're doing, 'thumbs-down'. If you're not sure, I'll have a bit of a wiggle… not sure? Right. A few people.

On this occasion however, the teacher appeared to have intended her question to confirm the students knew what the task was, and when she did not have this answered, followed it up with a more specific request to the class (lines 6 and 7).

In this lesson there were no other student questions generated during whole class activity, although later examples of Lara's lessons examine student questioning in small groups, used to develop knowledge and support each other.

PAUL – Operational questions

A second example of operational questioning occurred in one of Paul's Geography lessons. The class were being asked to present their findings in their books.

(Extract 7.1.2a)

1	Cassy	Sir?
2	Teacher	Yes, Cassy
3	Cassy	Do we have to do it colour coded?
4	Teacher	That's a brilliant way of doing it, yes.

Cassy's question comes amongst other queries regarding the content of the work and students checking understanding. This was a seemingly straightforward query about presentation, but as a strategy may have had the unintended impact of helping Cassy structure her thoughts. Her question indicated either that she felt she needed permission to do this, or that she required confirmation that she was on the right lines.

Two occasions have been noted where students wanted to move their learning on, and prompted this through framed questions – one example was in Paul's lesson, the second in Janet's lesson (Extract 7.1.3a). In Paul's geography lesson, he had spent the first five minutes ensuring all students understood the task and had the necessary information and resources to complete it. 'Can we start?' was taken as a prompt from the students that they were indeed ready to move on. On this occasion the question did not need agreement from the teacher and having been asked, was accepted automatically; the class immediately began discussing their ideas. Although the teacher did not explicitly acknowledge this student request, the class acted as one in support of the questioner. The relationship with the teacher appeared to be such that this would not be taken as criticism but as part of the classroom routine. Paul moved round the class and talked to individuals as they began working.

JANET – Operational questions

Another example of students trying to control the direction of the lesson was in Janet's English class. They had been discussing elements of poetry studied in a previous lesson and Janet had been setting the scene for a new poem to be read.

(Extract 7.1.3a)

1	Sue	Are we actually gonna read it miss?
2	Teacher	So *while* we read it – I'm going to read it to you – I want you to see if you can spot any structural things about it that you notice. What do narrative poems actually – what are their features?

Sue, in line 1, asked the question, but in a manner which could be construed as a negative one – not helped by the word 'actually' which hinted at criticism. In all the lessons observed these were the only two occasions where students explicitly tried to control the structure of the lesson. Others had questions which altered the content, but these two students wanted to force the pace of the learning. In Paul's case he was accepting of this prompt. In Janet's lesson, she accepted the request, but made it clear that it was *her* decision that the lesson moved in this way. She demonstrated this in an immediate response, almost overlapping the question, stressing '*while* we read it' (line 2), thus indicating that she was just about to start to do this when Sue interrupted her. Her continuing instruction ensured her standing in the class that she was in control of the direction and content of the lesson.

Other examples of operational questions occurred in most of the lessons observed, 'What's the title?' for example. These questions appeared to be the norm in many lessons, enabling students to check and meet different teachers' expectations. The two examples which follow occurred in Janet's lesson and her response to each was in the form of a more detailed explanation.

JANET – Operational questions

(Extract 7.1.3b)

1	Student	Do we do it in our books?
2	Teacher	In your books – so I'm going to find your books *(points to some students)* I think they might be on my desk. You can do this alone or in pairs *(noise level rises. Teacher points to task on screen)* Can I stress – sshh – haven't asked anyone to start yet.

In line 2 above, Janet had not finished explaining how they should carry out the task, even though the students were keen to begin. There was a dichotomy between the fact that the students thought they knew enough to get started on the task, and that the teacher believed she needed to clarify certain aspects first.

JANET – Operational questions

Trish's question below had a similar effect to Sue's question

(Extract 7.1.3c)

1	Trish	Can we have the learning objectives?
2	Teacher	That's what I'm drawing your attention to (points to screen). All of you should, by the end of the lesson, be able to comment on the features, which is what you're doing by answering these questions. But some of you, or most of you, should be able to comment on the structure.

It was an expectation in the research school that all teachers shared their learning objectives with the class in order that the students could understand the expectations in terms of learning, and know what the success criteria was for each task. This prompt by a student held an implication that the teacher may have forgotten to do this. Janet's response made it clear that she had not forgotten and was in the process of outlining these, using the school's process of describing differentiation of 'all students will be able to…, most students will be able to…, some students will be able to…'. She explained (line 2) that all students would be successful if they could comment on the features of the poem, and that some of them would also be able to comment on the structure.

RUTH – Operational questions

In Ruth's ICT lesson there were only four questions asked by students during the entire lesson. These were all operational and all while the class were copying the homework from the board. One student asked what something on the board said, 'Miss? What does that say? Common … ?'. Another student asked, 'Is that the homework?' (referring to the writing on the board), and a third student whispered to his friend, 'Do we write it in our journal?'

The only other student question was querying the content of the lesson where they asked if they could watch another one of the animations. Ruth's response to this was 'you will get a chance to watch and evaluate them by yourself, OK?'

It is apparent when examining the entirety of Ruth's lesson that the structure of the lesson and the style of teaching led to very little student interaction and little meaningful student talk. This lack of student questioning was not surprising therefore when taken in the context of the teaching strategies used. Further examples from Ruth's lesson are given throughout this chapter, and comments made about the links to student progress and levels of student learning.

DAVID – Questions in response to teacher questions

This was not an element in the original Observation Database. However, through examination of the observations it was clear that this was a frequently used device by students and often had the same intention as asking a specific question, hence its inclusion in this chapter.

Often when students responded to teacher questioning, they offered their answers in the form of a question, with an upward inflection at the end. The intention of this may have been to let the teacher know they were not secure in their answer and that they required further confirmation of their accuracy.

The first extract used to illustrate this comes from one of David's Geography lessons, and was taken during a whole class question-and-answer session. The class were going to be writing an article about the topic they had been studying. The article was to be in a format suitable to be featured in the National Geographic Magazine. David was encouraging the students to list the success criteria for aspects to include in such an article.

(Extract 7.1.4a)

1	Teacher	For example Cath?
2	Students	*Several students answer:* mountains, trees, forests *etc.*
3	Cath	Rivers?

David had targeted Cath for an answer (line 1), but was faced with replies from several of the class, calling out around her (line 2). Cath's reply (line 3), when it came, held a hint of uncertainty. The teacher's confirmation was delivered to Cath through his repetition of her answer. During this type of closed questioning where this teacher had specific expectations of the answers, repetition was a frequent response. This was not a time when David built on any of the answers to develop higher-order thinking.

DAVID – Questions in response to teacher questions

In another example, David had to deal with the fact that the students found Andrew's uncertain answer amusing.

(Extract 7.1.4b)

1	Teacher	Next one – can you give me something specific to geography please. *(3 sec pause)* No, OK I'll come back to you. Andrew? Anything specific to Geography?
2	Andrew	Um – things that are man-made?
3		*(Class laugh.)*
4	Teacher	OK, think about it and I'll come back to you.

This question had been asked several times during the previous few minutes. David was determined to encourage the answers to be Geography based, but none were forthcoming. Andrew's uncertainty suggested to the class that this answer too was incorrect, and resulted in their laughter (line 3). After two further answers however, the teacher came back to Andrew's reply to confirm its accuracy (line 1 below).

1	Teacher	Yes, that goes back to what Andrew was saying – things that are man-made features. So facts about the man-made and physical features of the country or the area…?

DAVID – Questions in response to teacher questions

The final example from this lesson came when the teacher had completed the list about content, and was now asking the class to list aspects for an effective article in terms of

style and form of the writing. Imogen was unable to give the teacher an answer, so he prompted her by signalling something he had written on the board earlier.

(Extract 7.1.4c)

1	Teacher	How about mention this, Imogen? *(points to the board where he has another list)*
2	Imogen	What?
3	Teacher	How about mention this? *(points to Key Words, written on the board)*
4	Imogen	Key words?
5	Teacher	Yes
6	Imogen	What in a magazine?
7	Teacher	Yes – key words in a magazine. It's a geographic article in a geographic magazine so you have to have key words. So let's put that right here *(writes under criteria list)* geographic key words.

The tone of Imogen's reply appeared quite critical of the teacher's suggestion, as she could not make the connection between the teacher's use of the term 'key words' and what may appear in a published article. David ignored her tone, and confirmed both verbally and then visually, by writing on the board, that this was indeed an important factor for their article.

GLEN – Questions in response to teacher questions

The two examples below came from Glen's lesson.

(Extract 7.1.5a)

1	Teacher	Hand up please - what's one of these called?
2	Teacher	*Chooses one of the students*
3	Adam	Is it a diode?
4	Teacher	It is a diode. OK. If you look very carefully, what's it remind us of?
5		*Pause. Some students say* oh…I know…*T shushes them and chooses one.*
6	Luke	A resistor?
7	Teacher	A resistor. OK?
8	Teacher	What is the difference between the resistor and our diode just by looking at it?

The closed questions from Glen only had one right answer and this had the impact of students checking their answers by forming their replies as questions. In line 3, for example, Adam suggested an answer but prefaced it with 'is it' thus turning it into a question. Luke (line 6) did not use the words 'is it…?' but presented his answer in the form of a question with an upward inflection at the end. Both had the result of the teacher confirming the answers (lines 4 and 7) before moving on.

PAUL – Questions to clarify

The examples below illustrate three different approaches by students in terms of asking questions to clarify both expectations and knowledge.

The first example was from Paul's lesson and was in response to him asking the class to let him know if they did not understand.

(Extract 7.1.6a)

1	Teacher	OK - so have a go at that for me. If you don't understand you must put your hand up.
2		*Andrew immediately puts his hand up*
3	Andrew	Sir - can you check - once I put the ... In the other that means… *(inaudible)*
4	Teacher	Yes I can, yes.
5	Teacher	*(to another student)* You don't understand?

Andrew's immediate hand-up was met by the teacher going across to him while the rest of the class began to work. However, the speed at which Paul responded meant that Andrew had not yet ordered his thinking to be able to articulate what it was he did not understand. He wanted the teacher to check that he *had* understood by looking at his book once the task was completed which he stated through a hesitant, broken sentence. The teacher agreed that he would come back to check, before moving on to help other students, and Andrew was able to start work.

SANDRA – Questions to clarify

In Sandra's Science lesson her Year 10 class were involved in a discussion about artificial insemination and 'designer babies'. The seemingly operational question 'should we write it in our books' (line 1 below) had a different meaning to the one in Janet's lesson.

(Extract 7.1.7a)

1	Rebecca	*(calls to teacher)* Should we write this in our books?
2	Teacher	You don't have to write it down - I'm happy for you to just discuss it..

The students were discussing an issue which enabled them to learn and reflect through each other's comments and responses. Rebecca's question was more to do with whether there was a need to record these thoughts or whether the act of discussing them was enough. It was a reasonable question as so much of students' work needs to be written down. However on this occasion the teacher was content for them to learn through discussion. Her response (line 2) indicated that they 'don't have to…' but if Rebecca had chosen to make notes then this would have been equally acceptable. The effect of Janet's answer was to share the responsibility for the decision between the teacher and the class. Some students did then decide to make notes as they talked.

SANDRA – *Questions to clarify*

The final example of a clarification question below is also one which enabled further development of knowledge. In Sandra's Science lesson, Shelly wanted to know whether the process they were discussing was real, or just something to encourage an emotive response from the class.

(Extract 7.1.7b)

1	Teacher	OK - you can talk to each other about it but I want you to make your own decisions.
2	Shelly	Is this process real?
3	Teacher	At the moment - that's a good point, Shelly thank you for reminding me - when you get to 'H' there's a big box and it says that's as far as we can go today. OK? That's as far as technology lets us go at the moment.

Sandra's lesson had reached the stage where the group had to make some decisions about their opinions. They had a sheet to complete which asked them to justify their thinking based on the information they had been given throughout the lesson. Shelly's question prompted an operational instruction from Sandra, together with the answer Shelly required. The students had been fully engaged with the discussion task, and each time one of them needed further clarification this was forthcoming from Sandra enabling the group to continue their thinking and reflecting virtually uninterrupted.

GLEN – Questions to clarify

The example below came from a practical Design and Technology lesson. The teacher, Glen, had set them a task after they watched a demonstration. They were all engaged with, and focused on the task, although the nature of most of their discussion was unrelated to their work and could be described as social talk (Mercer and Hodgkinson, 2008). The nature of the task may have allowed for this as it was purely practical – putting a wire through a hole and soldering it on the other side. This social talk did not appear to be stopping them from carrying out the task, although it was not possible to judge whether the speed of completion was affected.

During this lesson there were several clarification questions by the students to ensure they were able to do the task correctly. On each occasion Glen suggested they ask each other rather than him. Both examples below show the students being guided to talk to each other.

(Extract 7.1.8a)

1	Trevor	Is the orange on that side?
2	Teacher	Right. What I want you to do is to go and ask our friend over there because he *(inaudible). S walks to the other student.*
3	Trevor	Does it go on that side?
4	Rachel	Yeah I think so. And the black goes on that side.

Neil similarly asked the teacher for advice before being sent to another couple of students to ask them.

1	Neil	So what hole do you put it in?
2	Teacher	Ask these two. I'm not telling you.
3	Teacher	I want you to think. I want you to think. *(Walks to another student)*

There are possible reasons why Glen chose to direct the students to ask each other. The most likely is that he was aware that it was good practice for the students to interact with each other in order to deepen their learning, and therefore suggested they do this rather than expecting him to answer the questions for them. However, in this situation it did not have the effect of developing their learning. The answers they were looking for were going to be either right or wrong; there was no need for analysis or understanding of knowledge to be developed. Consequently the students still got the answer they required, but from each other instead of the teacher. What was apparent in this lesson was that although the teacher was trying to encourage the students to talk to each other, the *nature* of the dialogue was restricted, as the questions on this occasion were purely practical and only had one possible answer.

Another reason for Glen to do this may have been to remove the dependence on him as the teacher. Creating independent learners required more than this simple act however, and would need to be something the students did without prompting once it was an accepted and routine approach to their learning in this lesson. It was possible that this was the first time Glen had suggested the students do this, and may have been a reaction to being involved in this research.

JANET – Questions to develop knowledge – whole class

The majority of students' questions to develop knowledge occurred in pair and group discussions. In fact Janet's lesson was the only example of students asking questions related to furthering their knowledge and understanding which occurred during whole class discussions.

Janet's style of questioning and manner of responses to these questions had developed into a style of shared conversation about the learning. Consequently when the students

answered her, they tended to do so in the manner of part of a conversation rather than the answer being an end product in itself. The example below illustrates this.

(Extract 7.1.9a)

1	Teacher	Very good, so from the word "narrator" *(points to the word on the screen)* - someone reading a story. Alice?
2	Alice	Is it like when they tell a story over other two people, something like that?
3	Teacher	*(Pause - to clarify)* So someone telling a story about another two people?
4	Alice	Yeah or like it doesn't have to be like two, it can be like one

This example demonstrates how the teacher developed a dialogue with the student to enable them to take their thinking forward. The extended talk of a dialogic classroom encouraged the students to join in in and ask questions of their own thus developing their knowledge and learning power.

The difference between the nature of the questions here and those in Glen's technology lesson (Extract 7.1.8a) was that in his lesson there was only one expected answer. Here the questions were open and so the responses were seen more as students 'trying out' their answers, in the nature of Barnes's (1976) exploratory dialogue.

The following examples were all observed in paired or group work. Students used exploratory techniques to engage with the topic and were not afraid to express their need for clarification.

LARA – Questions to develop knowledge

Allison, in Lara's lesson, unashamedly stated that her work was rubbish. She wanted Betty to help her, but did not know what help to ask for. Allison was unable to articulate this further, and Betty tried to work out how she could help (line 4).

(Extract 7.1.10a)

1	Allison	Help me.
2	Betty	Why do you want me to help you?

3	Allison	‘cos it's rubbish!
4	Betty	*(Pauses to think)* Um, well,

In Allison’s case, she appeared to want support from her peer as she did not understand the task. In this situation Betty believed the problem to be more to do with the presentation than the content and suggested Allison copied her (line 5). As Allison had not been able to state why she was struggling, Betty was unable to offer any more advice and continued to repeat her instruction to Allison to copy her design. Eventually Allison agreed. The continued requests from Allison (lines 9, 10 and 11), with no response either vocally or non-verbally from Allison, indicated that something was still troubling her, and she needed more help than Betty was able to give.

5	Betty	Make it like mine. Look.
6	Allison	It's terrible *(speaking about her own)*
7	Betty	Oh, you're saying mine's rubbish then
8	Allison	No!
9	Betty	Well then do it like mine. Just do a spiral. Look. Do it like mine.
10	Betty	Do it - just do it - oh my God!
11	Betty	Just do it like a swirly one.
12	Allison	*Whispering to herself about what to do. Eventually…* OK.

On this occasion Allison could not formulate a question, stating instead that her work was rubbish. Had she managed to articulate this in a different way she may have been able to increase her learning of this topic.

PAUL – Questions to develop knowledge

The next example, taken from Paul’s geography lesson, was taken from a conversation between Ben and Charlie. Charlie needed Ben to agree with his understanding of middle and upper course rivers. Charlie and Ben were more articulate than Allison in questioning each other.

(Extract 7.1.11a)

1	Charlie	Isn't it the middle?
2	Ben	No it's upper, ‘cos it starts on the beach
3	Charlie	I could have sworn it was the middle
4	Ben	We have to do *(inaudible)*
5	Charlie	Yeah, but isn't that like *(inaudible)* look… it's in yellow, so it's the beach.
6	Ben	Maybe it is the upper course then.*(Laughs)*

This extract started with Charlie asking a question (line 1) but in a manner that suggested he had thought he knew the answer. When he noticed that Ben had written something else he questioned this understanding. His question therefore was in the nature of checking which of them had understood the teacher correctly. Ben was sure that *he* was right, stating his reasons to support this fact (line 2). Charlie remained unconvinced however (line 3), resulting in Ben deflecting the conversation to the need to complete the task in line 4. Charlie continued to explain his thoughts, even though the words at this stage are hesitant and the sentences unformed (line 5). Remarkably this incomplete sentence is the one that swayed Ben to his point of view and he accepted Charlie’s original point of view. The nature of being wrong in front of his friend does not appear to have a negative impact on this occasion, highlighted by Ben’s laugh in line 6.

Later in the conversation, they were negotiating their understanding of how the river behaved in its middle and upper courses, their dialogue punctuated with reading the text book (lines 2 and 6).

1	Ben	The river flows faster in the middle course, yeah?
2	Charlie	Um *(reads)* yeah, ‘cos it's *(inaudible - points to drawing)*
3	Ben	Yeah *(both agree)*
4	Ben	That's the – middle
5	Charlie	I'll just put M U L
6	Ben	*(reads)* The climate is less extreme in the middle course

Charlie (line 2 above) agreed with Ben's definition and stated 'yeah, cos it's …' thus justifying his initial understanding. They both agreed (line 3) as the text book had confirmed their knowledge, and wrote their answers in their books before moving on (line 6).

The two boys had made notable progress during this conversation, using each other's knowledge to build on their understanding; *understanding* being the key to moving their learning from 'shallow' to 'deep' in this instance.

PAUL – Questions to develop knowledge

In the example below, Elise and Fran were also defining the parts of the river. Both these examples showed the students indicating the rationale behind their thinking. Elise explained 'Cos it's the *(inaudible)* shaped valley…' (line 3) and clarified 'cos it's got a V on it' (line 7). The nature of this second example (Extract 7.1.12 b) demonstrates how the questioning developed into a more extended dialogue as the students tried out their ideas with hesitant and unfinished sentences.

Elise started the conversation with a question, but wanted to clarify her own thinking before Fran answered, so interrupted her (line 3) to complete her rationale. Lines 4 - 13 illustrate Elise and Fran learning to understand the nature of the V shaped valley, which culminated in Elise's comment 'I didn't know that' (line 13).

(Extract 7.1.121b)

1	Elise	It's the middle course isn't it?
2	Fran	I think so but I've put …
3	Elise	'Cos it's the *(inaudible)* shaped valley but yours is more like a circle shape valley!
4	Fran	That's a V.
5	Elise	Is that the V shaped valley?
6	Fran	I thought it was because it has V shapes here, but I'm not sure…
7	Elise	No, this is the V shape valley 'cos it's got a V on it *(points to her drawing)*

8	Elise	See the V
9	Fran	Yeah that is.
10	Elise	Where it comes down…
11	Fran	Yeah.
12	Elise	… and goes into the sea.
13	Fran	I didn't know that.

This part of their conversation focused on the shape of the V, and how to recognise it on the map. The comments in lines 3 to 5 confirmed that the valley was so named because of its shape and developed as they found it on the map (lines 6 and 7). They joined in each other's sentences in lines 8 to 12, enabling their combined thinking to flow naturally from one to the other. Fran's final utterance (line 13) confirmed when new learning had taken place. Once again the evidence of the student interaction, based around questioning each other and exploratory talk, helped them develop deeper understanding of the topic, and highlighted the good progress the students made in this lesson.

SANDRA – Questions to develop knowledge

Sandra's Science lesson offered several examples of students' questioning in pairs and small groups to enable deeper learning to take place.

The first example showed Trish trying to catch-up with what she missed in the previous lesson. Sarah and Rachel were answering her questions.

(Extract 7.1.12a)

1	Sarah	We did that and then we drew it down. And that's basically it.
2	Rachel	*(joins in)* and parents choose, parents choose, like the personality … eye colour - all the aspects -
3	Trish	What like you had a child - what you want it to look like?
4	Rachel	What would affect it? *(Pause for 1 sec)* if one of them was ill? Infertile?
5	Trish	What did your baby look like?
6	Rachel	Huh?

7	Trish	What you did last -
8	Rachel	Oh - male, average, dark hair, average attractiveness, decent intelligence, and funny but *(inaudible)*

Trish's first question was to clarify her understanding of the task (line 3). Her second question however (line 5) initially threw Rachel off guard as in addition to checking what the task was, Trish was trying to advance her thinking so she could also catch up with the concepts discussed. This second question was one which demanded more of the recipients than pure recap as it required them to consider how they felt when they undertook the task in choosing their own 'designer baby'. In doing this, Trish has managed, unconsciously, to deepen their thinking making them more reflective and ready for the next piece of learning.

SANDRA – Questions to develop knowledge

Emma was also absent in the previous lesson. Sandra's instruction to Tracy, to help Emma understand what they learnt in her absence, helped both students. Emma was able to ask twice (lines 1 and 3) until she understood. Tracy had to articulate her understanding of designer babies, thus making it make sense to herself as well as to Tracy.

(Extract 7.1.12b)

1	Emma	But what is a designer baby?
2	Tracy	Um, designer babies would be you could design your own baby like taking your genes…
3	Emma	What's it …
4	Tracy	- like deciding what the hair colour's gonna be -
5		*General chatter*
6	Rebecca	…and like, 'cos like, a designer baby is you can make it look perfect as in like you can choose it eyes or it's like facial stuff and hair and that. That's what basically a designer baby is.

In this situation it was described to Emma using exploratory talk, trying out how the explanation sounded, and adding to it until it sounded right. The girls used learning talk in this way to build their understanding until it reached a deeper learning than previously

achieved. Clearly this discussion could not have achieved this on its own, but the extract was chosen to illustrate the benefits of this type of learning talk and how an extended encounter of this kind could lead to a deeper learning experience.

Section 7.2: Student reflection

According to West-Burnham and Coates, student reflection and student questioning are the two key elements of dialogic talk in the classroom, and often lead to deep learning (West-Burnham and Coates, 2005, p.122). OFSTED state that the manifestation of 'participation, creativity, reflection and independence' (edisonlearning.net, 2013) is a vital proponent of preparing students for life. Lucas maintains that 'effective reflection requires you to be open and exploratory' (Lucas, 2001, p.199) and suggests that the teacher's role in providing purposeful opportunities for this to occur is important for developing the higher order thinking that leads to deeper learning.

The four teachers who provided opportunities for reflective practice in their lessons were Paul, Sandra, and Janet and David. There was little evidence of student reflective practices in the other lessons. The possible reasons behind this are examined later in this section.

Table 7.1: Table showing percentages of reflective opportunities

	Total number of opportunities for reflection	**Reflection – making connections**	**Reflection – examples**	**Reflection – interpret experiences**
Paul	25	44%	32%	24%
Sandra	17	0	47%	53%
Janet	48	40%	18%	52%
David	15	67%	27%	13%

Mercer and Hodgkinson referred to reflection as 'taking responsibility for finding connections and examples, asking questions, reinterpreting experience' (Mercer and

Hodgkinson, 2008, p.15). This was indicated in the Observation Database as three separate activities, a tick being added when each was observed. They were

1. Reflection – making connections;
2. Reflection – examples;
3. Reflection – re-interpreting experiences.

Table 7.1 (p.195) shows the percentage of opportunities for student reflections that fitted into each category. The deeper highlight shows the greater percentage for each teacher, the lighter highlight shows the second most frequently observed.

It is important not to see these as three separate areas of, and approaches to reflection, but by dividing them in this way for the Observation Database, it enabled more contextual analysis to be carried out. There were clearly areas where the three overlapped, particularly in Janet's lessons, where students reflected on their learning more readily than in other lessons.

The examples which follow highlighted those occasions when the process of reflecting was meaningful for the students, leading to deeper learning experiences, as well as those where the students tried, but failed to make the necessary connections, or where the teacher did the reflecting for them.

Paul's lesson opened up opportunities for reflection in his classes with the following outcomes: 44% through making connections; 32% through giving examples and 24% by re-interpreting experiences. Opportunities for reflecting through *making connections* existed both in whole class activity, as well as when working collaboratively in smaller groups, although the latter was less frequent. There was a difference between the teacher generating opportunities for reflection and facilitating the actual process of reflection. Many opportunities fell short of the students being able to engage in this process; the reasons for this are described in the extracts below.

In David's lesson the students *making connections* were found more in small group or paired work. The chosen illustration highlights the importance of a successful partnership to aid purposeful learning, which was not the case in this example. The disjointed meeting

of minds on this occasion ensured the process of reflection and uptake of learning talk was restricted.

None of Sandra's class reflected on their learning through *making connections,* and the division of types of reflection was more clear-cut in Sandra's class than any other. The observations evidenced both *reflection through example,* occurring only in the whole class question and answer session, and that through *re-interpreting experience,* which was observed only during group discussion.

In Janet's lesson students were seen reflecting in both small group activities and whole class discussion. Janet's students mainly used the notion of *re-interpreting existing experiences* to support their reflections. 52% of their reflections were expressed in this way, while 40% of the students' reflections were through *making connections*.

The main features which had an impact on the types of reflection occurring were the presence of the teacher and group size (whole class or small groups/pairs); the type of activity in which the groups were involved; and the nature of teacher questioning and response to students' answers.

JANET – Reflection - making connections

In whole class discussion Janet set the tone for reflection through both her questioning and her responses to the students' answers.

Reflecting through *making connections* was more frequent in whole class activity in Janet's lesson than in small groups. In this example, during a whole class discussion, Rachel remembered a previous task where they had all acted out the scenes from the poem. The memory itself may have been generated due to the physical and possible emotional response to the activity, and she used this now to connect to the current question. Janet's praise in line 2 was through a single word – 'excellent' and repetition and summary of Rachel's contribution.

(Extract 7.2.1a)

1	Rachel	*Another student contributes unintelligibly about the task they did …* We all stood up…
2	Teacher	Excellent. Very good, we all acted out the different scenes.

Janet's question in line 2 in the example below encouraged Debbie to continue her reflection. She had started to make connections but the association, possibly to a childhood game or film, led to her embarrassment at making this link. Janet dismissed the embarrassment through ignoring it, and focused instead on the connection she had made (line 2) by asking Debbie another question.

1	Debbie	Could he be like, like a, so could he be like a, like a knight? *(she plays with her pen in front of her mouth here, to cover her embarrassment)*
2	Teacher	What makes you say it's a knight?
3	Debbie	Because he's got the horse, but the thing that I don't, that he doesn't, I've got this feeling that he's going into like a house *(looks at teacher for a few seconds)*

Janet's manner, praise and focus on what mattered from the students' comments, encouraged them to contribute to the discussion. This may have also proved to be a model for the small group discussions, where students were engaged in a similar manner, making connections to help interpret the learning.

The small group tasks enabled students to explore their imaginations and use language to move towards a solution. Susan and Leah's joint spheres of reference, possibly through other lessons, or through television or film, assisted the flow of the discussion.

6	Susan	And they obviously know him and they definitely know the person who lives there and the traveller – but you don't know for sure what, and why… the traveller has come. It could be
7	Leah	I think it's just to let them know that I might have survived the war and all my friends have or haven't, stuff like that

The importance of the shared spheres-of-reference is further reflected upon in the following example from Paul.

PAUL – Reflection - making connections (whole class)

Students who *made connections* did so in both whole class and small group work, although there were less opportunities in small groups due, in part, to the type of task in which the students were involved. In the following example taken from a whole class question and answer session, the teacher asked Richard to explain what he understood by 'how developed Kenya is' (line 1). This invitation required Richard to make a link to his own experiences to answer the question. It also had the potential to move immediately into the deeper concept of *understanding* knowledge.

(Extract 7.2.2a)

1	Teacher	OK, good, so talking about the number of TV sets that people have. So what does that mean then about how developed Kenya is then compared to the UK?
2	Richard	They don't have much TVs compared to us

Richard's one line answer demonstrated his basic understanding of the situation. Although he had made a connection to existing understanding it could not yet be considered to be an act of reflection, although the opportunity was there. Richard's answer was based on his existing understanding of the priorities of material goods. The teacher needed to question him further in order to generate deeper thinking around the idea and a better understanding of the need for electricity. What occurred instead was that Paul moved onto another student with the same question, missing the chance for an extended learning conversation with Richard.

PAUL – Reflection - making connections (small group)

It was harder to find students making connections in the small group activity. The task was based on a set of questions and a text book. The students were required to look up their answers and add these to information they had learnt in the previous lesson. The example below suggested (line 4) that Jason was basing this on personal experience of being in a market. Stu reminded him (line 3) that this was to do with benefits for Kenya, not for individuals. Jason and Stu did not appear to be able to find a joint sphere of reference, and consequently their discussion was not helping their learning on this occasion.

(Extract 7.2.2b)

1	Jason	I don't know – people like markets
2	Stu	They get more money!
3	Jason	Yeah. Yeah, yeah. They get more money… And – you get gift … things
4	Stu	It's supposed to be good for Kenya

A key factor in successful student conversations was the ability for them to access joint spheres of reference. In groups this was not so much of an issue as one could learn from the others. However in pairs, if the two students working together could not find a common understanding to start with, they were unlikely to be able to develop their learning together. The role of the teacher here was important, in choosing partnerships in advance perhaps or in the timing and delivery of their expectations.

DAVID – Reflection - making connections

Students in David's class had similar experiences to Paul in terms of types of task, as they too were tasked with collecting information from a text book in order to answer questions on a worksheet. The main type of reflection by these students was through making connections – and opportunities to take this up tended to occur mainly in paired discussion.

(Extract 7.2.3a)

1	Neil	Sir. It doesn't say how hot parts of Kenya is
2	Denise	Yeah. But it's near the equator part
3	Neil	*(sarcastically)* Which means?...
4	Denise	It's really hot.
5	Neil	How?
6	Denise	'Cos it's – the biggest part *(uses her hands - goes quieter)* like you know the globe – *(indicates with her hands)*

In the example above, Neil tried to call the teacher over to help him answer one of the questions. He was not able to find the answer in the book, and had not tried previously to talk it through with Denise. However, she started to talk with him about it at this stage and made the connection *for* him (line 2). Neil did not see what the association was between

the equator and the temperature, hence his reply, which was uttered in a sarcastic tone, in line 3. The relationship between the two of these students was not good. They alternated between unconsciously and deliberately missing the point the other one was making. Consequently there was little learning talk going on between them, and no learning beyond the superficial could be said to be taking place.

The following example from this partnership showed Neil trying to make a connection of his own. His own experiences were limited here, leaving him little to draw upon, so his results were inaccurate and his partner became incredulous at his developing argument.

> 'And - *(with glee)* it's next to an airport. I'll put – it has an airport. That means, if there's only one airport in the whole of Kenya, if someone wants to go to *(inaudible)* it takes like – three hours to get there – (*Denise looks up at him)* - because they don't have any cars, they have bikes, so it'll take a year -- maybe less -- *(she looks at him with incredulity)'*
>
> (Neil)

Denise was working independently at this stage, any attempt at developing a learning conversation together having failed. She looked up at Neil when he said it would take three hours to get to the airport. Even though her body language and facial expressions told him otherwise, he took confidence in this and continued with enthusiasm. On his final statement she stared at him with amazement. It is not clear at which stage he realised he was wrong in his judgement, and how much was in jest, but it was agreed between them that the final comment was quite extreme.

<u>DAVID</u> – Reflection - making connections

In contrast, Angela's quote below showed how she was matching what she knew to the picture in the text book.

(Extract 7.2.3b)

> 'Isn't Kenya like a developed and a developing country because some places are really developed and they've got like massive swimming pools like the picture and they've got like really big nice places and they've got like money around and jobs, and there's like the other side of Kenya where there's like poverty and people are like (*inaudible*)'
>
> Angela

Her reflections used her own understanding of the situation to make connections and it then became the teacher's role to develop this thinking and add to her understanding and knowledge.

PAUL – Reflection - using examples

This class had access to plenty of examples for the teacher from the source material they were all working with. Paul's role was to build on their responses to help them deepen their learning. Following the extract above, with Richard using an example about TVs, Paul follows up his answer with an invitation (line 3) to make the link.

(Extract 7.2.4a)

3	Teacher	Right so they don't have as many TVs - compared to us – so
4	Richard	Electricity
5	Teacher	Right, so we could link that in turn to electricity - people's homes and things like that

It is worth noting that the person doing the most talking here was the teacher. So although Richard was being encouraged to find examples to reflect upon, Paul's twenty-seven words against Richard's one, showed that it was Paul doing the reflecting rather than the student. The *process* of reflecting was what deepened the learning, not the information garnered from it. For a student to be told the information was the same as them hearing it from a lecture or reading it from a book. The *making* of the link was the important element of learning talk here.

JANET – Reflection - using examples

(Extract 7.2.5a)

1	Teacher	But the thing with the ballad is it's written like a song. Which means it's got verses and a chorus as well. Do you remember the first verse was repeated at the beginning and the end?

Janet's question to the class was specific, asking the class to remember something that was in a previous lesson. This question was intended to stimulate memory but not just to recall the facts. Evidence showed that this teacher always followed up answers with further

questioning, so the student's answer in response to this was just the start of their reflections and was due directly to this question being asked.

JANET – Reflection - using examples

Similarly in the extract below the example that Debbie offered was praised by Janet with her adding to, and summarising the student's answer. Janet began by starting the sentence for Debbie to continue. This was phrased as a question, but as Janet left the end of the sentence unspoken, Debbie automatically joined in (line 2), echoing the style of exploratory conversation evidenced in small group activities in Janet's lessons, and giving the example of a knight wearing armour.

(Extract 7.2.5b)

1	Teacher	Yeah so how – if it was going to be a knight what would you have …
2	Debbie	Like armour and like -
3	Teacher	Armour -
4	Debbie	Yeah and like – he might have a sword…
5	Teacher	Yeah. So that's not there, so you – I don't think he's a knight, so what else could he be?

Janet continued the flow of the dialogue (line 3) with just the one word, repeated from Debbie's example, and Debbie continued by referring to a sword that the knight would have (line 4). The flow of the conversation was punctuated, and connected, with words such as 'yeah' and 'like' which made the whole dialogue sound as if it was one person talking. At the end of the extract (line 5) Janet re-directed Debbie's thinking to consider what else the protagonist could be if he was not a knight. This was done smoothly and without judgement, and as such Debbie comfortably changed direction and started to reflect on the next idea.

PAUL – Reflection - re-interpreting experience

There was only one instance of students in small group discussion in Paul's lessons using examples by way of reflection. Equally hard to find were examples of students in whole

class discussion *re-interpreting their experiences*. This example from a short discussion between Jason and Stu was the only occurrence of how this could have developed.

(Extract 7.2.6a)

1	Jason	Markets – you know markets the stall thingies where you buy different goods *(inaudible)*
2	Stu	Yeah - what's good about that?
3	Jason	I don't know – people like markets

Jason referred to the idea of a market based on his own, limited understanding of how markets work. Although he was able to describe the purpose of a market – as in line 1 – he was incapable of making the link required to explain *why* this was good for Kenya. Had Stu been able to connect to Jason's sphere of reference, he may have been able to move the discussion forward, but his question (line 2) was not strong enough to further their knowledge. Jason's comment in line 3 was a naïve judgement based on his own experiences and Stu was unable to change this direction of thought. This highlighted the fact that the boys wanted to be able to make the necessary connections and join their thinking together, but did not have the knowledge or experience to be able to do this. The role of the teacher in ensuring they have this information is vital if students are to be able to enjoy the process of reflection.

SANDRA – Reflection - re-interpreting experience

In contrast, none of Sandra's students' reflections were evidenced through *making connections.* The task she set was to discuss the facts surrounding a particular topic and to form opinions about it. This used a more emotive context, as the topic was a controversial, and topical, one and the students were all engaged in the group discussions. The conversations evidenced both reflections through *example* and through *re-interpreting experience* during the learning talk.

The *reinterpreting of their thoughts and experiences* occurred only during the group discussion, as is shown in the extract below.

(Extract 7.2.7a)

1	Sarah	… like want to have a baby, like want to have a family
2	Rachel	Yeah
3	Sarah	Stuff like that. *(4 sec pause)*
4	Rachel	*(reads)* Do you know what would affect this decision?
5	Trish	I wouldn't do that - I'd adopt. I wouldn't have a designer baby, I'd just adopt.
6	Sarah	Yeah, 'cos there could be health issues *(4 sec pause)*

The class had been given specific questions to guide their conversations. The students decided when they had exhausted a particular topic and were empowered to move on when ready. The question Sarah was answering (line 1) was 'when would someone want to have artificial insemination?' The girls found their sphere of knowledge was limited in this area, and consequently were unable to call on their experiences to further answer the question. Rachel agreed with Sarah (line 2) and Sarah wanted to advance this idea but was unable to, leaving the thought undeveloped (line 3). Rachel acknowledged they had reached their limit, after a 4 second pause to make sure and read the next question (line 4). This question was more easily addressed, and Trish contributed her opinions on this (line 5) followed by Sarah's example which was linked to facts gained in a previous lesson.

SANDRA – Reflection - re-interpreting experience

Tracy and Rebecca also formed opinions based on their understanding of the facts they had received earlier in the lesson. Tracy was virtually quoting the information she had in her book in front of her. Her tone at this stage did not give any clue as to her feelings about what she was saying, and it was Rebecca who declared her opinion.

(Extract 7.2.7b)

1	Tracy	…and like, cos like, a designer baby is you can make it look perfect as in like you can choose it eyes or it's like facial stuff and hair and that. That's what basically a designer baby is.
2	Rebecca	So - but - I think that it's wrong - you should love your baby no matter what it looks like.

The topic itself had not been discussed in the class yet, the group discussion being the chance for the students to find out what they and their peers thought. Following their discussion, there would have been a good opportunity, through structured teacher questioning, to encourage deeper reflection, advance thinking and facilitate an analysis of their initial thoughts. However, the teacher's plenary questions were to ask the students to feed back their answers in a formal question and answer session which did not build on their ideas. The students' reflections in the second part of the lesson therefore, were restricted to giving examples. This is further described later in this chapter as it also feeds into the discussion on the value of extended conversations to develop knowledge and learning.

This lesson tested existing knowledge and opinion but did not manage to develop it further, enabling some higher order thinking but only shallow learning for some students.

JANET – Reflection - re-interpreting experience

Leah also offered a mixture of *example* and of her *own experiences* of ghosts and mansions, in this extract taken from a small group discussion. Her explanation is a continuous flow of thoughts, interspersed with example and justification. There are two occasions where she established her conviction in her answer. She used the word 'definitely' twice to press her point home: 'definitely ghosts' and 'definitely a castle' and her phrase 'which I believe' was also intended to give her audience confidence.

(Extract 7.2.8a)

1	Leah	It could be like anyone, depending on what interpretation you've got. So I think, in my mind, I think this is partly right and partly wrong. *(Looking at her work)*. Because um... because it's got like – it could be *(unintelligible)…* but then it couldn't because it could be a messenger or it could be a warden but then there's definitely ghosts in this, which I believe, because it's got the 'only hosts of phantom listeners' so – but then it's been deserted, the castle – it's definitely a castle because it's got all the detail

Leah felt safe working in this environment, evidenced by the fact that she was able, uninterrupted, to rehearse her thoughts until such time as she felt able to present them in a more coherent form.

Her thought processes are worth noting in detail. She began by reminding the group – and herself – that the answer was open to interpretation and therefore the protagonist 'could be anyone'. She then added to this by saying it may be 'partly right and partly wrong' which she qualified by stating 'in my mind'. Up to this stage Leah had not made any clear pronouncements, but she had processed the fact that she could make up any interpretation she wished as long as it made sense in the context. She then proceeded to define who the character could be in terms of a warden or a messenger, but developed this set against the background of the 'phantom listeners'. This thought – the one she was definite about, probably because she could quote from the poem to support it – developed into a declaration that the setting was very likely therefore to be a castle.

JANET – Reflection - re-interpreting experience

Debbie, who was working in Leah's group, exemplified another instance of student reflection. This extract is also used elsewhere in this chapter as it is a good illustration of exploratory talk and how Janet managed to elicit the students' ideas through her teaching strategies. Here though it is to demonstrate how the process of reflection moved Debbie to a deeper understanding of the work they were doing.

(Extract 7.2.8b)

1	Debbie	…or something like that – but then – it's a story *(unintelligible – seem to be looking around at what others are doing)* of a soldier (*questioning this as if the rest of the class are all saying it's a soldier)* Yes, I know we've got to use our imaginations and stuff but – *(stumbles over words – trying to work this out)* – somebody has written this – why this is happening to them or what they're thinking. What they've seen, what they've heard about – and they've written about a specific subject but they've left things out that we have to put in with our imaginations… But we're not sure entirely what he's talking about – it's like all poems really – unless it's like a direct like – flower *(not clear)*

Debbie was working through the concept of the distinction between someone having written the poem, and the poem's 'voice' – in this case the protagonist – was presented in the first person. Janet had asked the class who the protagonist might have been. Debbie, however, was reflecting deeper into why he had described certain aspects and not others.

Debbie wanted to take the answer to a higher dimension than those students who were simply going to state that he may have been a messenger.

Like Leah she qualified her thinking by saying that like all poems, the interpretation was open to debate, and the fact that they were not 'entirely sure what he's talking about' was acceptable within this premise.

Janet's question had enabled a challenge for the brighter student to think beyond the basic and into a higher level of learning. It was debatable whether the question enabled this or whether the student's ability to reflect pushed her into a higher level of thought. What was clear was that in the context of the entire lesson there were many opportunities for students to be stretched to deeper learning and this lesson evidenced more rapid progress than in many of the other lessons observed.

The act of reflecting is a higher order thinking process, and one which the students needed to learn how to do. Some had more of a propensity to reflect than others, but some teachers offered opportunities for reflecting to occur, and gave students the tools to empower them to develop the reflection process. For this to occur, the teachers needed to understand the benefits, not just of reflection, but also of sharing these thoughts with others. This process of sharing reflective ideas moved students more quickly into the deeper learning zone and thus demonstrated more rapid progress being made within the lesson.

There was a definite distinction between the teachers in this case-study who enabled reflections to occur and those who provided opportunities for students to reflect, but had not enabled the students to develop their thought processes in this way. There were also those teachers who, on this occasion, did not provide any opportunities for students to reflect, as demonstrated in the extracts below which are taken from Ruth's lessons.

<u>RUTH</u> - Absence of student reflection or purposeful learning talk

In Ruth's ICT lesson there was little student reflection or evidence of learning talk leading to deeper learning. The lesson structure played a part in this. For the first 25 minutes the teacher was addressing the new topic, for the second part they were working on their computers to begin the task. When the students were involved in the ICT task, they were,

of necessity, working independently so there was limited conversation between them. Consequently the main opportunities for learning talk were during the first 25 minutes.

The first set of questions the teacher asked were in relation to the previous lesson. The class were asked to remember what they did and to link it to the expected outcomes for this lesson. Students were not very forthcoming with their answers and there were a lot of pauses where the teacher repeated the question. It was not clear why this was the case as when she asked outright if they had forgotten the previous lesson they replied that they had not. However once the lesson got going, the pace picked up and students began to contribute.

(Extract 7.2.9a)

1	Teacher	The task we are going to do is we are going to do with something to do with animation - right?
2		*3 second pause*
3	Teacher	So how are we going to link this to our project? Can anyone tell me?
4		*1 second pause*
5	Teacher	…what we have been doing in the last couple of weeks?
6		*1 second pause*
7	Teacher	What is the project we have been doing?
8		*4 second pause*
9	Student	*Answer inaudible*
10	Teacher	No
11		*4 second pause*
12	Teacher	Murder mystery - We have been - we were trying to solve a - *(pause and student correctly fills the gap)* …murder, thank you very much.

This extract illustrated the slow pace of the start of the lesson. The students were ready to learn before the teacher was ready to give them the opportunity to start. The teacher was controlling the direction of the lesson and proceeded to explain each aspect of the lesson before the students were able to begin. In the recording of the observation it was noted that students had either started to daydream, or were fidgeting and unsettled.

<u>RUTH</u> - Absence of student reflection or purposeful learning talk

After ten minutes into the start of the lesson the students watched a short animation made by a primary school pupil about which they were going to answer some questions. The questions asked them what they thought about the animation, and having watched the film, what features they believed a successful animation would contain. They were tasked to discuss this in groups.

(Extract 7.2.9b)

1	Teacher	OK - it is a very short animation done by the primary school kids, so you can see it has got very basic techniques, OK?
2	Teacher	So what you need to decide is - what is it about? What are they trying to tell you?
3	Teacher	I don't want you to tell it to me right now. I want you to discuss it in groups.
4	Teacher	And identify the purpose and the target audience.
5	Teacher	OK? 2 minutes. I'll put it on again. *(They have already started to discuss.)*

In the example above the teacher explained who created the animation (line 1). She spent some time explaining the task to the students. In line 2 she offered two questions the students should consider. She then explained that she did not want the answers delivered to the whole class (line 3) but that they should discuss this in their groups. She then added a third, two part question to the list (line 4). The students were asked to decide what the animation was about, what the provider was trying to tell them, what the purpose of the animation was and who its target audience was.

In reality this instruction only took one minute to deliver, but the students had already begun to discuss the animation while Ruth was finishing her explanation. The students' desire to start learning was also due to the fact that this instruction was not new; Ruth had already spent time explaining the task, as illustrated in the extract 7.2.9c.

<u>RUTH</u> - Absence of student reflection or purposeful learning talk

Each line in the extract below was spoken by the teacher. Her first line connected the new task to the project the students were working on – that of a murder mystery. Line 2

introduced the concept of animation and in line 3 Ruth told the class why they were going to be doing the task she had arranged. She also told them that they would be using new software (line 4) and gave them another reason why they would be doing the prepared task (line 5). Ruth told the class what the task would be, while she set up the animation on her computer. This took some time, so she talked while she was setting it up once again explaining what they would be doing (lines 6 and 7). In line 8 Ruth gave them the task and explained twice (lines 9 and 10) that they would be discussing it in groups. In summary Ruth had told them what they would be doing, why they would be doing it, and what the task was going to be. Then she set the task and told them how they would be carrying it out.

(Extract 7.2.9c)

1	OK - so today we are going to look at animations and after - er -next lesson we are going to start creating an animation. We are going to create an advert to find the suspect. Right?
2	Using animations. So that is what we are going to do today, using animations.
3	You haven't done animations so far, so you need to learn about animations before you start doing it, OK.
4	We are going to use a new piece of software that we have never used. So -
5	So because of that, we need to learn the basics. OK?
6	So… what I'm going to give you, the first task I'm going to give you, is you're going to look at - you're going to look at, ah, …
7	One of the animations I'm going to put on the board now, right - and you're going to tell me -
8	What is the message it is trying to give you? And who the target audience is. Two questions. What is the message it is trying to give you? And who the target audience is. OK?
9	This is created by one of the primary school kids. OK?
10	What I want you to do is look at this - discuss in groups - and say - what it is trying to tell you.
11	OK - that is the first thing you can discuss in groups, OK. First - look at it very carefully.

This teacher-led explanation was delivered to the students, giving them no doubt as to who was in control of the direction and content of this lesson. The students were visibly getting fidgety during this explanation, and consequently were keen to get to work. The time spent explaining the task was disproportionately long compared to the time given to the students

to have their discussion. The above explanation took almost 3 minutes, whereas the students were just given 1 minute 30 to discuss the animation.

This had a bearing on the nature and quality of the learning talk. What was noticeable in other observations was the time it took some students to get used to each other in their conversations and register the common frame of reference. In some cases of group discussion in other lessons, the first sentences uttered were simply to understand the context of the task or question, and then to begin to make the necessary connections and reflections for deeper learning to occur. Here, however, this length of 1 minute 30 was not long enough for more than the most basic answers as those which appear in Extract 7.2.9d below.

RUTH - *Absence of student reflection or purposeful learning talk*

Another possible key to why the students' learning conversations were limited in this lesson can be found in the extract below. Andrew was concerned as he did not know *how* to carry out the learning talk. Other observations in this research have seen students in similar tasks, being asked to explain what features made up specific products - an effective article for example, in David's Geography lesson. Andrew used this prior learning experience as his frame of reference but instinctively knew it was not appropriate as evidenced in line 1.

(Extract 7.2.9d)

1	Andrew	I'm not sure what kind of stuff counts – 'cos you could say loads of stuff like colour and writing, but I'm not sure what actually -
2		*(5 sec pause)*
3	Ben	Yeah.
4		*7 sec pause - until teacher calls them together again. Andrew plays with his pen. Ben stares straight ahead.*

Ben's reply in line 3 was to agree with Andrew and the long pauses (lines 2 and 4) in-between their contributions was indicative of their inability to redress the situation in which they found themselves.

RUTH - *Absence of student reflection or purposeful learning talk*

When Ruth called them together she used a series of closed questions to establish what they had learned through their discussion. The *nature* of the students' discussions was illustrated in the previous extract and consequently this, coupled with Ruth's style of questioning, limited the possibility of developing their thinking.

She had also shared with the students that 'It is not a fantastic animation but it is a basic animation - right?' It was possible that the reason the students were finding it difficult to analyse the animation was *because* it was so basic.

(Extract 7.2.9e)

1	Teacher	OK - what about this? What are the things we have go in here? What have we got?
2	Student 1	Pictures
3	Teacher	OK, pictures
4	Student 2	Information
5	Teacher	Information
6	Student 4	Colour
7	Student 5	Animation
8	Teacher	Animation

After the 8 minute introduction to the activity prior to watching the animation, and the reinforced instruction prior to their 1 minute 30 discussion, the students offered just four suggestions to the class discussion. This was the only time spent on this sharing of information as the students were then about to embark on the computer based task. As each student offered a feature associated with the animation, the teacher repeated it and moved on. Line 2 and 3 told the class that the students saw 'pictures' in the animation; Lines 4 and 5 told the class that they saw 'information'. Student 4 stated 'colour' as being a feature of the animation, which was not reinforced by the teacher, who went onto student 5 who declared that 'animation' was present. The teacher repeated this by way of acceptance of its accuracy. Whether or not the offerings were right is not clear through this brief extract. The intention was that the students would now be able to put these features into their own animations; but no discussion as to how this would be applicable or an analysis of each

aspect was forthcoming. The *plan* for deeper learning was apparent, but the *delivery* was not present.

Consequently from the time they watched the animation to the time the teacher finished questioning them, the students had not learned any new knowledge and additionally had made no progress. They had been tested on existing thoughts, but these had not been developed nor had they been challenged.

It should be remembered that these students experience a range of opportunities for learning during each day, just as varied as the observed lessons which were part of this research. They are used to reading the nature and context of the lesson on arrival, *prior* to the lesson if the teacher uses predictable processes, and are ready to fit into the role they have been allocated. Those lessons where they are given some responsibility for their learning such as the opportunities for learning talk evidenced in Janet's or Sandra's lessons, would be those lessons where the students are more engaged, possibly more motivated, and more likely to access deeper learning.

Chapter 8: Findings and Analysis - Teachers

Section 8.1: Types of Teacher talk

Introduction

Having examined the elements of effective learning-talk, and made some connections to the role of the teacher in determining these, this section looks in more depth at the nature of teacher talk, and teacher questioning. The concept of collaborative working is explored towards the end of this chapter and finally the necessity for a balance of contribution between teacher and student in contrast to the teacher-led experiences which restrict student learning.

This section intends to provide findings and analysis of the data to address the third of the research questions: 'In what ways might a teacher influence the nature of learning talk in the classroom?'

Alexander posed the question 'do we provide and promote the right kind of talk; and how can we strengthen its power to help children think and learn even more effectively than they do?' (Alexander, 2008, p.10). What became clear during the analysis of the opportunities for learning talk was the key role played by the teacher. Good questioning for example, could enhance or restrict the nature and value of learning talk, and determine whether the learning was superficial or deep. This section examines the patterns observed from the analysis in terms of teacher talk. What did the teacher do that produced effective learning talk in the classroom?

Both the style of delivery and the purpose of the talk, as described in chapter 3, were examined in the analysis of the teacher talk. All the teachers in the research cohort attempted to engage the students in interactive pursuits. However the nature of the interaction and its success with regard to learning talk was where it was possible to distinguish between the styles of delivery. It was necessary therefore to examine more deeply the nature of teacher talk and the following terms, as discussed in chapter 3, were recorded on the Observation Database and ticked when observed.

Interactive: teacher and student (actively involving students Q and A)	**Types of teacher talk**
Non-interactive: teacher only (lecturing style)	
Dialogic: asks for points of view (exploratory talk)	
Authoritative: factual teaching	
Instruction	
New knowledge	
Managing behaviour	
Classroom / operational management	
Teacher prompting	
Statement / instruction / lecture: teacher	
Teacher statement to manage class	

Figure 8.1: Extract from Observation Database – types of teacher talk

This chart represented the types of teacher talk being explored through the lesson observations. During initial analysis of the transcripts, each was ticked when observed. Percentages of types of talk used in each lesson were calculated and the most frequently used of each was then determined.

The first aspect examined was the contrast between *dialogic* teaching, where the teacher and student worked together towards establishing points of view and the students were more engaged in exploratory talk, and the more *authoritative*, factual teaching (figure 8.1). The following chart shows those teachers who demonstrated these aspects as their most frequently used approaches.

Table 8.1: Comparison of Dialogic and Authoritative Teaching

	Dialogic: asks for points of view; exploratory talk	Authoritative; factual teaching
Janet	34%	22%
David	0	70%
Lara	38%	7%
Glen	16%	1%
Sandra	32%	2%
Ruth	14%	3.5%

Janet, Lara, Glen, Sandra and Ruth all demonstrated dialogic teaching as their most frequently used approach. David favoured authoritative, factual teaching delivery, with no dialogic teacher-talk evidenced. However, within this there were notable differences. Janet, Lara and Sandra showed relatively high amounts of teacher talk to encourage student participation and interaction; Glen and Ruth evidenced less than 20% of their teaching to feature dialogic aspects.

Another useful comparison was the amount of teacher talk compared to the amount of teacher questions in the lesson. Table 8.2 (p.218) expresses the percentages for each teacher. For those teachers who were observed twice there was little difference between their lessons except in the case of Paul. David and Lara's teaching approaches were consistent in each of their observed lessons. In David's case there was very little difference in each, both in terms of his approach and the students' learning talk. In Lara's lesson although the *proportions* of talk against questioning remained the same, the *amount* of questioning increased in the second lesson. Lara's first lesson was related to the students presenting the work they had done on poetry, working on developing presentational skills. In the second lesson they were involved in creating and devising. The second lesson demanded more from the students in terms of levels of learning, and this was echoed in the amount of questioning and prompting from the teacher.

Table 8.2: Table comparing percentages of questioning and talk

	Questioning	Talk
Janet	34%	66%
Paul lesson 1	64%	36%
Paul lesson 2	32%	68%
David lesson 1	28%	78%
David lesson 2	21%	79%
Kathy	42%	58%
Lara lesson 1	20%	80%
Lara lesson 2	38%	63%
Glen	43%	57%
Sandra	48%	52%
Ruth	26%	74%

Each of Paul's lessons gave a very different scenario and this was based on the type of task he had set. In the first lesson the work was about Kenya and its development as a country. He started and finished with a whole class discussion, sandwiched around a collaborative group task. In the second lesson, Paul had set a task which involved students working in groups to find out facts from the book about upper, middle and lower courses in rivers. The first lesson showed a far greater percentage of his talk being questioning, compared to the second where the situation was reversed. From the evidence shown, this had an impact on the nature of the students' responses. In the lesson where Paul was asking questions the opportunities for learning talk were greater and the students' responses were more developed. However, it will be noted later in this section that none of the aspects of teacher talk can be taken on its own to determine student learning outcomes; the *patterns* are the key elements. It was necessary to examine the context and identify the patterns for each teacher, and then relate this to the type of learning talk demonstrated.

Each aspect of teacher talk was explored separately in terms of the context of the lesson, the nature of the talk and the elements of dialogic teaching and teacher questioning. The recorded lessons were watched several times and ticks set against each of the chosen features of teacher-talk. It was easy to see the patterns and connections from these. During deeper analysis it became apparent that these fitted into two categories: Category A and

Category B. The descriptions are outlined below; the analysis from the illustrations follows later.

Category A - Dialogic teaching was defined as including aspects of talk which encouraged exploratory language in students, questioning from students and sustained learning conversations. Those aspects of teacher talk that fed into these were teacher prompting, encouraging a shared discussion which acknowledged the students' points of view. Teacher questioning, and collaborative group work also had a key role to play in these student outcomes, and are being addressed later in this chapter. Consequently, from the Observation Database list, dialogic teaching, teacher prompting and teacher questioning have been placed in one category.

Category B - The second link was seen in those lessons where the students were not given as many opportunities for learning talk and the levels of balanced interaction were not as frequent. Teacher questions tended to be closed and resulted in presentational responses and restricted learning opportunities. The aspects which linked together in this category were authoritative teaching; instructing; statements / instruction / lecture.

Table 8.3: Table expressing two categories of teacher talk

A	Dialogic teaching
	Teacher prompting
	Questioning (Section 8.2)
B	Authoritative teaching
	Instructing
	Statement / instruction / lecture

Before examining these two categories it is worth looking at the three aspects from the original list which did not fit into either of these two categories:

- New knowledge;
- Behaviour management;
- Classroom management.

New knowledge

The characteristic of *new knowledge* was one not readily observable in this case-study. One of Paul's lessons evidenced 34% of his talking being relating new knowledge to the students, but the other lessons were less obvious through teacher talk. Paul was asking his class to determine 'benefits' and 'problems' associated with tourism. The students had their hands up and were offering suggestions for each.

1	Richard	A 'benefit' – the more money they get they might be able to build more schools, so more people would be able to read
2	Teacher	Right – so with the money they can improve local facilities *(writes)* – which would have an impact on their development, won't it, as a country. Steven?
3	Steven	Robert told me this one – you can learn about their religion?
4	Teacher	Excellent – learn about their religion, understand their culture – we're trying to do it from a classroom. It would be much better if we could pick up our classroom and go and put it in Nairobi, but I'm afraid we can't, so –
5	Rachel	'Problem' – too much tourism destroys the environment

Richard (line 1) suggested a benefit which the teacher reinforced in his reply. Firstly Paul re-worded Richard's answer and wrote it on the white-board; secondly he finished the answer to give the class a greater understanding. From Richard's example of more money being able to build schools and help people read, Paul had given the group two statements of new knowledge: more money could improve local facilities and this would impact their development as a country. Similarly through Paul's repeating of Steven's statement (line 4) and building on this, he was able to produce new facts, which he wrote on the board for the class to learn.

This was not to suggest that the other teachers were not delivering new knowledge to their students, but that it was done in a different way than through teacher-talk. Through further examination it became clear that the term 'new knowledge' was not easy to define through a single classification as it was complex and would give more information than this research required. Therefore, because of its complexities and since it had no bearing on the outcomes of learning talk in this case-study, it was removed from the final analytical categories.

Behaviour management

The classification of talk for the purposes of *behaviour management* was demonstrated in ways that would be expected in most of the lessons: settling students down to start the lesson, calling the class to listen during transitions between tasks. However the one lesson where this classification was more evident was in Kathy's Science class where almost half of her talking was related to managing student behaviour. The content of the teacher talk in this category was not only in terms of making the class quiet, but mainly by way of discussing with them what they needed to do in order for them to have a good practical session.

The extract from this lesson showed Kathy asking questions about expected behaviour. The first question began by asking what 'skills' the class were going to need. However Kathy immediately qualified this by adding 'if we are going to follow these instructions safely…'

1	Teacher	SShhh … ssshhh… ssshhh. Right I want to spend two minutes on this and then you can do the work. You can do the practical. Don't be silly please. Don't be silly. Right – look this way. *(holds up the book)* Everybody – Carole that includes you – look this way and listen please. Now the three practicals you're going to do – what skills are we going to need? If we're going to follow these instructions safely and record our results? Let's ask Simon.
2	Simon	Concentrate
3	Teacher	We're going to need to concentrate, thank you.
4	Sandra	No messing about
5	Teacher	No messing about. John?
6	John	Listen
7	Teacher	Listen to who?
8	John	You
9	Teacher	Me
10	Teacher	OK you're going to read the book properly – so who are you listening to if you're reading the book properly?
11	Teacher	The person who's reading it ….. the people on your table.

Kathy used the technique of asking the students for the success criteria for good behaviour. The question required a list of expectations; Simon said ‘concentrate’, Sandra said ‘not messing about’ and John said ‘listen’. These words were what Kathy had asked for, hoping that the act of asking the students to articulate the expected behaviours should have the effect of them following their own rules. On this occasion it did not have the desired effect. Students at the research school were often asked to list what they think the expectations were, and they were used to listing them. This had been evidenced in many formal and informal lesson observations carried out by the leadership team and recorded as part of the monitoring of the quality of teaching and learning. It may be that the words came to the students’ minds more readily than the actions which required more thought.

The student responses here were in the model of ‘*directly answering the teacher’s questions’*, and were not demanding in terms of levels of learning talk. However, this was due to the nature of the questioning style being *closed* questions with a range of expected answers, rather than the context in which the questions were being asked. Consequently *‘behaviour management’* was also removed from the final teacher-talk categories.

Classroom management

The last of the three was the classification of *classroom management*. This only occurred in two lesson observations and described the type of talk where the teacher needed to control the movement of the class, as in the case of David’s lesson where they were distributing and using equipment to prepare their models of the river courses, or in the case of Lara’s lesson where the class were moving into groups to work on the next activity.

DAVID

Teacher	Right. So you have your research. You have the resources at the front here. And … paper
	We have also - sand and stones for those of you who want to show me the rocks falling off the mountain side
	…and later…
	(over the top of the chatter) if you are using the rocks, you have to use this particular glue.

LARA

Teacher	so you'll need to move the furniture around maybe - you'll have to move yourselves around - get into groups of your island -
	...and later...
	OK - so move yourselves - move your tables into... …

This teacher talk had no impact on the contribution to, or nature of, the learning talk and consequently was also removed from the final analysis. It is acknowledged that other factors also have a bearing on the conditions for learning talk to occur, such as layout of tables and groups, but this section is just concerned with the types of teacher talk and its effects.

The following sections then, examine each of the two categories in depth.
8.1a – Category A: dialogic teaching; teacher prompting; questioning
8.1b – Category B: authoritative teaching; instructing; statement / instruction / lecture

8.1a - Category A

A	Dialogic teaching
	Teacher prompting
	Questioning (Section 8.2)

Janet, Lara and Sandra showed elements of each of these aspects of teacher talk in their lessons, in varying degrees.

Table 8.4: Percentages of types of teacher talk – Category A

	Dialogic: asks for points of view; exploratory talk	Authoritative: factual teaching	Instruction	New knowledge	Managing behaviour	Classroom / operational management	Teacher prompting	Statement / instruction / lecture: teacher *	Teacher statement to manage class	Questioning	Talk
Janet	34%	22%	7.5%	7.5%	2.5%	11%	12%	33%	9%	34%	66%
Lara	38%	7%	0	2%	0	3%	15%	24%	0	38%	63%
Sandra	32%	2%	14%	2%	0	2%	2%	58%	0	48%	52%

JANET

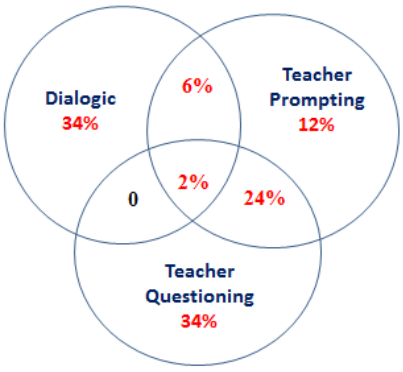


Figure 8.2: Venn Diagram of Janet's teacher talk - Category A

Janet's range of different types of teacher talk enabled the students to contribute comfortably to both whole class and small group discussions. They were able to demonstrate exploratory talk in both whole class and small groups, which was unusual, both in terms of the literature studied and the data collected from *this* research. Although the percentage of questions Janet asked appeared small, the *type* of question asked was an important factor. This is examined further in the section on Teacher Questions (Section 8.2).

Much of Janet's dialogic talk has already been referenced earlier in the chapter. However the quote below is a good illustration of how her general questioning, as well as her

specific, targeted questions, intended to elicit the students' points of view. This set of questions was 'authentic' in that there was no expected answer, and in the way they were delivered, offered the students suggested foci for their responses thus scaffolding their answers.

JANET

(Extract 8.1.1a)

Teacher	After the first reading, not looking too closely at the poem, what's the general impression? What's it about? Is there anything of the structure that you noticed?

The first question gave them permission to share their first impressions, with the statement that they should not think too hard about the poem. This encouraged exploratory talk as implicit in this was that Janet was not expecting a well-rehearsed answer. The following two questions were the clues as to what the students could comment on. The first – 'what's it about?' was the basic question to check comprehension. The second – 'is there anything about the structure…?' was a more challenging question which asked them to think more deeply outside of the content.

Janet's 'prompting' was often in the form of questions. Fitting in with the style of her teaching she managed with few words to redirect student thinking, or stimulate new ideas. In extract 8.1.1b, Janet was working with Debbie who was unsure about who the protagonist was. She thought he may be a knight and Janet prompted her to deeper thinking about how she would know. She could have asked Debbie a more specific question and had a similar response. However this style of Janet's talking also had the effect of modelling to the students how conversations of this nature looked like. Consequently their own learning talk developed throughout the lesson and led to deeper and more grounded learning experiences as a result.

JANET

(Extract 8.1.1b)

1	Teacher	Yeah so how – if it was going to be a knight what would you have …
2	Debbie	Like armour and like -

Extract 8.1.1c is from part of the lesson where Janet had been teaching the class how to determine rhyming schemes in poetry; they were having difficulty understanding the concept. They were losing confidence in their abilities, and as a result were not as settled as they had been earlier in the lesson. This was the only time that Janet needed to quieten them down to listen to her, and the only time she used authoritative teaching to secure their understanding (Extract 8.1.1c).

JANET

(Extract 8.1.1c)

Teacher	What I was saying is that when you start a new verse anyway you can start again at 'a'. OK, so since we've actually got this rhyme scheme – it starts rhyming again. Instead of going 'd', 'e', 'd' 'cause it will just go on and on, you go back to 'a'. Right, so the rhyme scheme – if you were going to put it in a sentence, you would say the rhyme scheme is 'a, b, c, b'.

The tone of her voice changed as she re-established herself as the expert to give them new knowledge and build their understanding.

Moving on from explaining the general concept of rhyming schemes and how to report them in an essay, she explained the way this particular poem worked. As a plenary she asked the class what they thought should happen in the following lines of the poem with regard to the rhyming scheme. In the extract below, 8.1.1d, Janet uses gentle prompting to encourage them to see the answer.

JANET

(Extract 8.1.1d)

1	Teacher	So we do 'd' there and then do we do a, b, c again?
2	Students	*Students generally call out their responses.*
3	Teacher	I think it might actually be a, b, c, b again?
4	Students	Yeah.

In line 1 she showed the class how one line was labelled 'd' and then asked them a test question to see how much they understood at this time. The students' responses were mixed (line 2) showing that they still were not all clear in their understanding. In line 3 Janet redirected their thinking, explaining the right answer but stating it in the form of a question. This had the desired effect of starting to give them confidence that they would understand it if they continued to focus, and that she would help them get there.

LARA

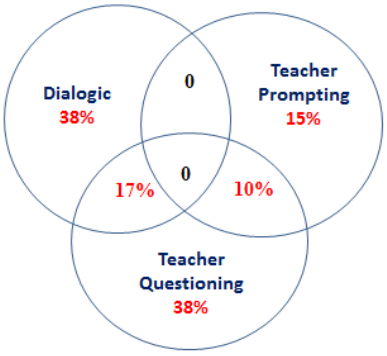


Figure 8.3: Venn Diagram of Lara's Teacher Talk (Lesson 2) - Category A

The students in Lara's classes experienced two different learning environments in each of her observed lessons. In Lesson 1 she demonstrated no 'dialogic talk' favouring instead the giving of instructions and responding with statements; this featured 87% of her first lesson. Additionally in Lesson 1 she only questioned students for 20% of her teacher talk compared to the 38% in Lesson 2.

The dialogic talk in this lesson had the intention of preparing the students to write effectively in their descriptions. The whole class introduction session was to give the

students the necessary ideas and vocabulary to start their discussions. They would then be working in groups to plan their ideas, writing notes as they did so, prior to working independently on extended writing descriptions.

Lara asked questions to encourage responses from the class.

LARA

(Extract 8.1.2a)

1	So - we're going to be using lots of adjectives to describe these pirates.
2	When you describe - you know when you saw Johnny Depp he had the red bandana on, didn't he - the red scarf on his head - if you were going to say that you were wearing a red bandana or a red scarf - are we just going to say that?

In line 1 she told them what the overriding intention of the lesson was. Line 2 stimulated a response as she wanted them to consider what did and did not work for the reader.
In the next extract Andrew has offered a description of the colour red that may be used.

LARA

(Extract 8.1.2b)

1	Andrew	Um it's red from like your enemies blood.
2	Teacher	Red from the blood of your enemies -that type of red. Fantastic, that would be a great way to describe it. And that would mean we are beginning to extend that description.

Lara, in line 2, (Extract 8.1.2b) reinforces this description through both praise and the suggestion that this would be a way to extend their descriptions.

In Lesson 2, in addition to the 38% of Dialogic talk there was just 24% of 'instruction/statement/ lecture' which contrasted to Lesson 1's 87%. It is worth examining why this was the case and whether it had an impact on the students' learning.

To do this the category of 'statement / instruction / lecture' was examined further. This was recorded in a column in the database which allowed for a tick every time the teacher made

a statement in response to a student or when the teacher was ‘lecturing’ the class giving instructions or information.

LARA

(Extract 8.1.2c)

1	Teacher	What I'm gonna ask you to do is - I'm going to ask you to get into your groups from your island - OK - so you
2		so you'll need to move the furniture around maybe - you'll have to move yourselves around - get into groups of your island -
3		… and I want you to think about how you're going to start describing yourselves as pirates. So I don't want you to be sitting there describing yourself - because that's not fun. You're going to talk about how - as a group - you're going to be as pirates - how you’re going to describe yourselves

In extract 8.1.2c, Lara was explaining to the class that they would be working in groups (line 1). They sit and listen while she explains the task and how it would be carried out, before they start to move into groups. Lara clearly had a routine for this type of classroom management, and the class were well-practised at it. In line 2 Lara explained how they would need to move the chairs and tables to get into their groups. She referred to the ‘groups of your island’ (line 2) which suggested they had been working in these groups before. She also wanted to make sure that they fully understood what was expected in terms of the end product (line 3) where she told them what she *did not* want, ‘I don’t want you to be sitting there describing yourself – because that’s not fun’.

In this lesson there was a lot of instruction of this nature from Lara. This appeared to have taken a lot of time in the lesson, away from the opportunities for the students to be contributing and interacting demonstrating that which is often termed as ‘teacher-led’.

LARA

(Extract 8.1.2d)

1	So if you're describing yourself as a pirate, remember, this is not art - you're not drawing a picture, but you've kind of got to draw it with the words -

On the one hand this does little to develop learning opportunities, on the other – by setting her expectations – Lara empowered the students to use greater language and consequently achieve deeper learning experiences.

In the extract below, 8.1.2e, her instruction had five different functions.

1. She explained that the class would be working in groups; this statement was a few minutes earlier than the one described in the extract above. She explained the task they would be doing. This was reminiscent of Ruth's lesson, where she explained several times what the group would be doing and how they would be doing it. However the contrast here was that the task this class were embarking upon appeared to excite them. They were all engaged and keen to move onto the next part of the activity. The other aspect in this instruction was explaining what they would be talking about once they were in their groups. The evidence cited earlier in this chapter illustrated that the students' learning was stimulated by the group discussions enabled by this task.

2. Lara reminded the group that they had already carried out some research. This suggested that the discussions on which they were about to embark would take their learning talk deeper still. They could use the information they had to build their ideas. This also contrasted with the example of Ruth's lesson where the student was unsure about what to discuss as he had no guidance from earlier learning or from the teacher (*Extract 7.2.9d*).

LARA

(Extract 8.1.2e)

1	So - I'm gonna ask you to move into your groups. I'm gonna ask you to talk about the descriptions of each other.
2	You've already done some research on what you think you will look like. Now you've got to describe it on paper.
3	So you're looking to see how you can describe each other. And make that description the best.
4	There's no point saying I had on a brown coat and a black hat 'cos that - that - you want a real sense of how evil these pirates are.
5	And what type of pirate you're gonna be.

3. The third line had two features to it. Firstly she suggested they would be describing each other. Earlier extracts saw Annabelle unable to engage with the creative nature of this task and her friends suggested she described one of them. They used the guidance from the teacher to support their peer and were able, having started the task themselves, to explain how Annabelle could do this successfully. Lara also challenged the class to make their description 'the best'. The students responded well to this challenge, and their dialogue showed how they were all trying to find the best words to use to make their description count.
4. Lara reminded them that the portrayals should be more advanced than straight-forward description. She added the emotive word 'evil' to encourage their deeper thinking.
5. Finally she placed the students 'in-role' by talking to them as the pirates. This took them into a higher order thinking plane thus challenging all the students to work at the deeper learning level.

SANDRA

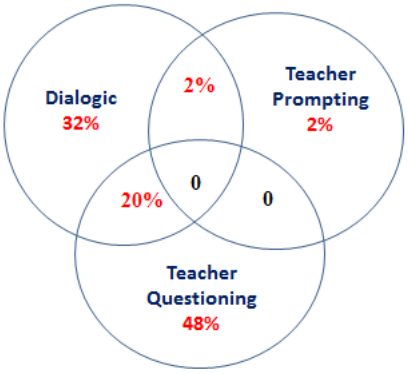


Figure 8.4: Venn Diagram of Sandra's Teacher Talk - Category A

Sandra's lesson was in two parts. In the group work activities, the students were engaged in meaningful learning talk where they had the chance to try out ideas and support the learning of each other through their exploratory language. In the whole class question and answer session Sandra's questions were limiting deeper learning at this stage. This was evidenced in extracts earlier in the chapter. The important factor to note about Sandra's

lesson is the preparation she laid for the students so that they were able to enter into such successful learning talk in the first part of the lesson.

In the previous lesson the students had been learning about the facts related to artificial insemination. The students' recall of the facts on its own could be labelled as shallow or superficial learning. Their understanding of these facts would take them to the next level, and their analysis of the same would lead to an even deeper learning level and embed this understanding for future lessons.

In the example chosen to illustrate the first part of this lesson (Extract 8.1.3a) Sandra reminded the students that they were looking at their opinions (line 1). Sandra had let them know that there was no 'right' answer: whatever they felt would be taken into account and given value. Line 2 sets this firmly into the context of their 'feelings' as well as their thoughts, thus extending their learning approaches.

SANDRA

(Extract 8.1.3a)

1	OK, so we're basically again guys, we're looking at your opinions.
2	OK, and you're gonna explore how you feel about this.
3	Last lesson, Miss (talks to me) you would have been so impressed at how good they were at accepting each other's opinions.
4	Obviously it's a little bit awkward because there's not many of you today, but we'll do our best.
5	OK - well I'll just give you a couple of minutes. I'll stop you at half past, so in the meantime get your objectives down and have a discussion about the questions

In line 3 the direction of this statement appeared to have two intentions: one to praise the students and let them know that what they achieved before was exactly what she was hoping they would achieve again; secondly it allowed them to accept the camera in the room and as such to ignore it and focus on the task she had set.

Line 4 set the situation in a different context: some of the students who had been working in the group in the previous lesson were absent, and some who were present in this lesson had been absent before. An earlier extract showed how Sandra used this to her advantage by asking the students to 'teach' each other what they had learned in the previous session.

By telling the students when the task would finish (line 5) Sandra handed the responsibility for the timing of the task to the students. This balance worked in the students' favour by empowering them for their own learning experience.

SANDRA

(Extract 8.1.3b)

Teacher	OK guys, I think you've got a couple of minutes and then we'll go through them, and then I've got a little activity for you which again is going to be about your personal opinions on these topics. And I want you - I want you to make sure you feel comfortable in giving your own opinions. OK. So we'll look at that in a second.

The extract above is another example of how Sandra was explicitly telling the students that her aim was to encourage them to feel 'comfortable' in giving their own opinions. This sharing of the learning intention was vital to support them taking ownership of their learning, and the knowledge that Sandra was working to help them feel safe to take these risks, raised the profile of the teacher to be both expert and learner-support.

8.1b - Category B

Authoritative teaching
Instructing
Statement / instruction / lecture

Table 8.5: Percentage of types of Teacher Talk – Category B

	Dialogic: asks for points of view; exploratory talk	Authoritative: factual teaching	Instruction	New knowledge	Managing behaviour	Classroom / operational management	Teacher prompting	Statement / instruction / lecture: teacher *	Teacher statement to manage class	Questioning	Talk
Paul 1	19%	21%	8.5%	34%	4%	2%	6%	57%	10.5%	64%	36%
Paul 2	0	6%	9%	0	4%	6%	2%	64%	15%	32%	68%
David 1	12%	14%	14%	8%	2%	4%	12%	63%	7%	28%	78%
David 2	0	70%	54%	3%	6%	15%	3%	85%	0	21%	79%
Glen	16%	1%	14%	7%	1%	1%	5%	65%	0	43%	57%
Ruth	14%	3.5%	2%	0	2%	7%	0	83%	2%	26%	74%

David, Paul, Glen and Ruth were used to illustrate the teacher talk evidenced in Category B. Table 8.5 illustrates the percentage of utterances for each of the listed teachers with regard to the types of teacher-talk. The highlighted boxes indicate where the larger percentages lie.

DAVID

Both of David's lessons evidenced *Authoritative teaching*, although one to a far greater degree than the other. In both lessons there was a tendency for David to deliver fewer questions to students compared to a high proportion of statement/instruction/lecture: in David's case *lecturing*. The following extract evidences three minutes of teacher talk.

(Extract 8.1.1a)

1	You cannot - you cannot - listen carefully - you cannot describe - you cannot describe what the river is doing to the land without your research. That's the reason you did your research.
2	The first thing we did was the research. You collected information on what the river is doing in the different sections - the upper course and the middle course.
3	That is the information you are going to use to present on your model. That's the information you are going to use to determine how you are going to draw your river in the upper course. That's the information you're going to use to determine how you label the different features in the river - um the different features of the river and the surrounding areas in the upper course.
4	If your book is closed it means that you're just drawing a river - and I said to you last week - this is not an art exercise. OK - you're not drawing a river for me. What you're doing - the geographic task here - you're explaining - you're describing to me - what the river is doing to the land as it flows over it in the upper course.
5	As the river flows from the mountain - down the mountain - what is it doing to the land? That's what you're doing.
6	OK - so you need to have your exercise books - with your research notes - on your table - and you need to have your project that you should have - your project - do you all have your projects?

The class were listening attentively and were compliant, the tone of David's delivery suggesting that this was a reprimand. One of the outcomes of this teacher-led approach was that students became more dependent on the teacher for information and less motivated to discover it for themselves. This was apparent here, as there was little response to his final question – 'do you all have your projects' (line 6) apart from a lone student asking 'projects?'

Each line had a different intent. Line 1 was spoken with a negative force – the repetition of the word 'cannot' implied that the students had tried to do their work without using their research and the teacher's tone reinforced this as being a reprimand. Line 2 reminded the students why they had done their projects and what their projects included.

A different, more interactive, approach may have been to ask the class what information from their projects would help them with the current task. This may have encouraged them to think more deeply around applying the knowledge and test their understanding of the

facts they had previously learned. Instead, David described the information to them, (line 3) and explained how they would use it to draw and label the features on the river.

Line 4 was definitely an admonishment as David referred to having told them before that they were not involved in a drawing exercise but a Geographical description through illustration. David's need to repeat this information suggested that the students could not access or did not grasp this concept. Perhaps this was due to the nature of the delivery – after a few minutes of listening the students may have lost focus; or perhaps it was a concept that they needed to discover in a different way. This lesson could have benefited from greater interaction with the students at this stage. Line 5 was a further reiteration of the task and then David asked them (in line 6) to make sure they had the necessary books and project information ready to do the task.

David talked to the students in this manner for 85% of his teacher-talk in one lesson, and 63% of his utterances in the other. If this was a common trend in David's delivery it might explain the propensity towards the types of student questions asked in his lessons and the limited student reflection. The quality of the learning talk in David's observed lessons inclined towards superficial learning.

PAUL (a)

The extracts used to demonstrate Paul's main features of teacher-talk illustrated his use of repetition to acknowledge student answers; his description of what the students would be studying; and instructions to students.

In this illustration line 1 was a repetition of an earlier answer and ended on an incomplete phrase with a question intoned at the end – 'so…' indicating to Richard to finish his thought (line 2).

(Extract 8.1.2a)

1	Teacher	Right so they don't have as many TVs - compared to us – so
2	Richard	Electricity

3	Teacher	Right, so we could link that in turn to electricity - people's homes and things like that
4	Emma	How many people can actually get electricity…
5	Teacher	Alright, excellent - good.
6	Emma	… can afford it
7	Teacher	OK brilliant. Er - go on then *(indicates to another student to answer)*

Paul built on this answer and paused at the end, looking expectantly at the class. Emma picked up on this and added her piece of information, that this indicated how many people had access to electricity. Paul's praise (line 5) overlapped with Emma completing her thought (line 6), which was acknowledged again in line 7.

Paul did not ask questions to encourage the students to build on their own thinking, but used statements to add information to that offered by each student. They did join in, and in this sense the lesson can be described as interactive, but the depth of their responses was not as great as it could be had Paul asked the students questions to prompt higher order thinking.

PAUL

In the second extract Paul was responding to an answer by one of the students. It did not follow the prepared line of the lesson, and although Paul acknowledged the answer, he did not allow it to refocus the lesson plan. He then (line 2) delivered the lesson intention to the class and placed it in the context of earlier study about Italy and tourism.

(Extract 8.1.2b)

1	Teacher	OK, excellent, right. I don't want to focus on that too much, but well remembered --- boys (to call their attention)
2	Teacher	OK Today's lesson we're going to look at tourism in Kenya. We don't need to be spending half the lesson on studying what tourism is, 'cos we've already done that with Italy, so far, haven't we, earlier on this year.

His teacher statements and new information were delivered in amongst student comments, not in the style of David who spent longer periods of time talking to the students. This has

echoes of the description of asymmetrical and symmetrical dialogue as described in chapter 3.

Mercer and Hodgkinson (2008, p.56) described the differences between the 'asymmetrical' teacher-student talk when the conversation was controlled by one person, and the 'symmetrical' approach which saw a more equal balance of interaction. The definition suggested that it was more common for the teacher to control the direction of the conversation. Although Paul's approach was more interactive between teacher and student, he still controlled the direction of the dialogue (*line 1, 7.1.2b*) and therefore both David's illustration *(Extract 8.1.1a)* and Paul's *(Extract 8.1.2b)* would be defined as asymmetrical in nature.

PAUL

This final illustration from Paul's lesson showed him instructing the class about their task. The first utterance was punctuated by his thoughts and appeared disjointed. He firstly suggested to the class that they wrote down the information (line 1). Paul used a turn of phrase 'can *we*…' implicit in this being that he wanted them to believe that they (teacher and student) were working together on this. The next part of his contribution was to start the sentence he wanted them to write. However he realised they had not acknowledged they were meant to be writing, so he reiterated it as a clear instruction (line 2). He spoke the words as he wrote them, (line 3) as a further confirmation of his expectation, and then turned to watch them as they completed the task.

(Extract 8.1.2c)

1	Teacher	So can we just get that written down, rather than me write that on the board? Two…
2	Teacher	- so we don't - just write this sentence down please. Just to get the introduction to our piece of work today - um - *(writes)*
3	Teacher	Two major reasons people travel to - er - to Kenya - Safari and beach - holidays.
4	Teacher	So I'm sure you've seen our aims for today's lesson. We're going to be studying the good things about tourism in Kenya, and bad things. So problems and the benefits. And we're specifically going to be looking at those two types of holidays.

In line 4, Paul stated clearly what the learning intention was for the day. He had already explained this in the previous extract, although this description was more concise as it was a presentation of the facts that were written on the board as Learning Intentions.

GLEN

Table 8.6: Proportion of talk to questioning - Glen

	Dialogic: asks for points of view; exploratory talk	Authoritative: factual teaching	Instruction	New knowledge	Managing behaviour	Classroom / operational management	Teacher prompting	Statement / instruction / lecture: teacher *	Teacher statement to manage class	Questioning	Talk
Glen	16%	1%	14%	7%	1%	1%	5%	65%	0	43%	57%

Glen's proportion of talk to questioning appeared evenly matched, although his 65% statement/instruction/lecture offered more of an imbalance against the dialogic talk seen in some of the other lessons. When examining the nature of the student responses in his lesson, which were heavily biased towards superficial learning talk, it was clear that this was due to the mixture of *closed* questions from the teacher to determine recall of prior factual learning and the lack of opportunities for the students to develop any sustained dialogue or higher order thinking.

The extract below was an example of the nature of direct responses to questions given in Glen's technology lesson. The students were standing in a gathered group circled around a large table, while the teacher demonstrated how to complete the task on which they were just about to embark.

(Extract 8.1.3a)

1	Teacher	What's the give-away? What tells us that this is the diode and the other thing is the resistor?
2	Trevor	Er - that one has got a band *(inaudible)*
3	Teacher	That one has a band. Does a resistor have bands?

4	Trevor	Yeah.
5	Teacher	Yeah. And music!
6	Trevor	Mmmm?
7	Teacher	Bands! Never mind!
8	Teacher	Now. A resistor has four bands, doesn't it. Do you remember that?
9		*Students mumble a response.*
10	Teacher	OK. SO. What we need to do we need to add one of these things.
11	Teacher	Anyone like to tell me where this actually goes? Would you like to tell me
12		*Pause.*
13	Teacher	*(to student 2)* Yes, sir
14	Student 2	*Student points*.
15	Teacher	In there. Fantastic. It goes in there.

The illustration of this extract was to demonstrate Glen's style of questioning. The students were almost an audience to his teaching, rather than participants in the learning. There was little engagement from the students, who mumbled responses, although there was quiet listening and arguably good behaviour. OFSTED's expectation of good behaviour, however, is that it promotes 'active involvement' (OFSTED, 2010). It is difficult to describe the students' contributions to this set of questions as *active involvement* - rather a passive compliance. This was echoed in the rest of the lesson where the students were assembling the desired components.

RUTH (a)

(Extract 8.1.4a)

1	Teacher	What did we do last week, can anyone - tell me?
2		*1 second pause*
3	Teacher	What did we do last week?
4	Student	*Answer inaudible*

5	Teacher	We filled in a questionnaire. We filled in a questionnaire
6	Teacher	To do what?
7		*4 second pause*
8	Teacher	What is the questionnaire for?
9		*6 second pause*
10	Student	*Answer inaudible*
11	Teacher	Right. The police, yeah. To ask different questions to find out - ?
12	Teacher	- to find out?
13	Student	*Answer inaudible*
14	Teacher	Can't hear you (goes up to her)
15	Teacher	OK - to find out the particular - ah - person -
16	Student	*Student continues inaudibly*
17	Teacher	To find a particular person, OK.
18	Teacher	So - some of you have forgotten what we have been doing.
19	Teacher	Put your hand up if you have forgotten what we have been doing.
20	Teacher	No hands up!
21	Teacher	So then why don't you talk?

This extract demonstrated the nature of Ruth's questioning and level of interaction with the students. The final question in this example was an important one to be answered. It may have been due to the presence of a camera in the room, although this did not have a notable impact on any of the other classes in this way. It could equally have been that the students either could not engage in this lesson or had not embedded any of the learning in the previous lesson.

The responses were mumbled, as in Glen's lesson, indicating a passive involvement from the students. This was reflected in their body language, which was shown by students at some of the tables staring ahead of them, or doodling, and some engaged in communicating with each other in a quiet and non-distracting manner.

The teacher gave them thinking time, but often ended up having to prompt so fully that she was almost answering the questions herself. The questions themselves were asking for recall of facts, which the students either could not or would not answer. A different approach could have been to ask the students to discuss what information they had gained

from the questionnaire in the previous lesson, and then sort the information as it was shared into specific categories. This could have engaged the students in learning talk which may have prompted deeper thinking. This could be described as an *authoritative* lesson with little interaction from the students, although this did not appear to have been Ruth's intention; she asked the questions, but the students were unforthcoming with the answers.

Both *teacher-talk* and *teacher questioning* were equal factors in determining the nature of the students' learning talk. Evidence from the extracts above indicated that David's and Paul's lessons both tended towards factual teaching, with questioning designed to ascertain students' understanding of the information they had received. Whereas Paul's questioning developed understanding, some of David's questions only demonstrated the *shallow learning* of factual recall. Ruth attempted to ask questions but the students were not engaged in the lesson and were therefore unable to contribute. Janet, Sandra and Lara's lessons were *dialogic* and *interactive* at different stages in the lesson, and with differing outcomes in terms of levels of learning.

Section 8.2 Teacher Questioning

Different classifications of questions, based on the research outlined in chapter 3, were listed in the Observation Database. After the initial analysis and pattern-matching (Yin, 2009, pp.127-164) two categories were created which are reported in this section.

This section is divided into the following parts:

8.2a Type and Purpose of question

8.2b Questions intended to provoke discussion

Table 8.7: Two categories of questioning

1 (7.2a)																2 (7.2b)
Authentic	Test	Open	Closed /other	Leading	Narrow	Discursive	Clear	Confused	Recall	Elicit	Check	Probe	Instruct	Develop	Manage	Questioning to provoke discussion

8.2a Type and Purpose of Question

This list was initially divided into two: the type of questions (Authentic, Test, Open and Closed) and the purpose of the question. However as each question received ticks in various columns it was clear there was a lot of overlap and it was not possible, nor desirable, to make distinct divisions for each question. Consequently the examples given below, showing the links between the teacher questions and student responses, revealed different patterns of question type and purpose depending on the context of the lesson observed.

Janet asked more *open* questions than any of the other teachers thus endorsing it as being the best lesson to evidence the outcome of *open* questions. Janet, Paul, David, Kathy and Ruth have been chosen to illustrate the varied responses to *closed* questions and how the context and structure of the lesson fed into the nature of the learning-talk from the students.

JANET

Janet asked 41 sets of questions during her lesson. They fell into the following categories:

26 Authentic (63%)

15 Test questions (37%)

28 Open questions (68%)

13 closed questions (32%)

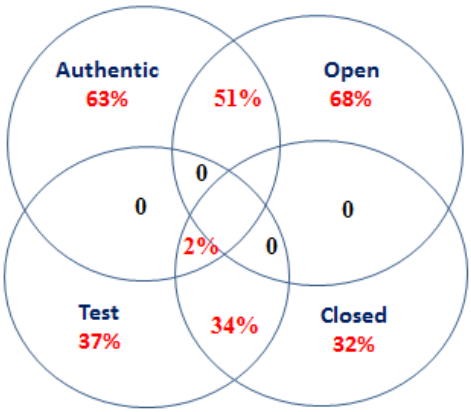


Figure 8.5: Venn diagram to show the relationship between types of questions in Janet's lesson.

Open Questions

JANET

The majority of questions in Janet's English lesson were *open* questions, and most of these were asked with the teacher not having an expected outcome – *authentic* questions.

Janet used this form of questioning evenly spread out throughout her lesson. The responses from the students depended on the reason behind the question and varied from short statements to more exploratory, extended conversations.

These examples illustrate the short statement responses of the students to these open questions. Extended and exploratory responses were discussed in earlier sections.

JANET

(Extract 8.2.1a)

1	Teacher	We've looked at sonnets, we've looked at Haiku, we've looked at one more which was *(says title – unintelligible).*
2	Teacher	Do you remember what kind of poem that was? David?
3	David	A depressing one
4	Teacher	It was a sad poem. It was a ballad.
5	Alice	A ballad, yeah
6	Teacher	What do we remember about the ballads? Brenda?
7	Brenda	Was it – ? *(hears someone answer something behind her)* Oh never mind

8	Teacher	No? Someone said something over here *(points to other side of room)*
9	Student	Another student answers *(unintelligible)*
10	Teacher	It tells a – yes, it tells a story

David's reply to this more open question (line 2) was based on an emotional response where he stated that it was 'a depressing one' (line 3). Janet firstly repeated his answer by way of acknowledgment, and then added her own comment to this to ensure the class had the key word, 'ballad' (line 4). She may have expected the term 'ballad' as the answer to her question in line 1, but had not asked this in the same closed manner as previous examples of test questions. The phrase 'do you remember…?' had the effect of opening up the possible responses to beyond the one, right answer.

JANET

The teacher attempted to focus their recollections back to the structure of the text, (line 1, Extract 8.2.1b) and referred to the verse being repeated at the beginning and the end, but the students wanted to cite the other, creative, aspects of this poem. Again, this may have been due to the teacher's term 'do you remember?' The previous learning appeared to have been embedded through the students acting out sections of the poem (line 7). This active learning style required an emotional response and empathy with the characters in the text. It is likely they would have remembered this above the facts and consequently this was how they responded to the *recap questions* in this lesson.

(Extract 8.2.1b)

1	Teacher	But the thing with the ballad is it's written like a song. Which means it's got verses and a chorus as well.
2	Teacher	Do you remember the first verse was repeated at the beginning and the end?
3	Steven	Something about his illness?
4	Teacher	"pain loitering" Very good, well remembered. *(Points to Alice)* Yes.
5	Alice	Are they meant to be about love?
6	Teacher	Very good. Yes, ballads are normally about love.
7	Rachel	*Another student contributes unintelligibly about the task they did …* We all stood up…
8	Teacher	Excellent. Very good, we all acted out the different scenes.

Steven remembered it was about the character's illness (line 3) and Alice talked about 'love' (line 5). Rachel too recollected the activity of standing up and performing parts of the poem (line 7). It may have been interesting to find out if the scenes Alice and Steven worked on were actually those verses they referred to.

Janet had not achieved her intention of the students remembering the structural aspects of the ballad but still praised their recall. This was indicative of an earlier reference by James *et al* about using praise to 'make pupils feel good' but not necessarily moving their learning forward (James *et al*, 2006, p.11).

Closed Questions

JANET

The purpose of *closed* questions in Janet's lessons was either to recap on prior learning or to introduce topics and gauge the students' understanding of these before moving on. It was a method which quickly established the level of knowledge of the students but was not intended to develop their learning. 37% of Janet's questions were *test* questions and although fairly evenly spread throughout the lesson were more prevalent in the first 15 minutes.

Most of these questions to test knowledge or understanding were also closed questions as one might expect. The one occasion that did not fit this trend is expressed in the extract below. In the lesson the students were discussing what a narrator was, and Alice's reply (line 1) was a little confused. The teacher wanted to check her understanding and did this by repeating Alice's statement in the form of a question (line 2). On this occasion this question acted as a stimulus for Alice to elaborate (line 3).

JANET

(Extract 8.2.1c)

1	Alice	Is it like when they tell a story over other two people, something like that?
2	Teacher	*(Pause)* So someone telling a story about another two people?
3	Alice	Yeah or like it doesn't have to be like two, it can be like one
4	Teacher	Like any one?

5	Alice	Yeah
6	Teacher	Yeah, so it's like someone telling a story.

Janet's questioning had the effect of guiding Alice's thinking in the right direction and consequently she was able to establish an accurate definition. Janet achieved two things here: firstly to clarify the definition for the class, secondly to enable Alice to move from a confused description into being able to articulate one which sounded much clearer. The act of Alice articulating this, rather than the teacher simply correcting her, would have shaped her understanding of the definition.

Other closed questions in this lesson were frequently followed by a closed statement from the student. The following examples of this are taken from a section of the lesson where the teacher was checking understanding and recall from an earlier lesson. The questions were unambiguous and had the expectation of receiving the one, right answer.

JANET

(Extract 8.2.1c)

1	Teacher	Right – so far with poems we've looked at a Haiku, which is a what? Hands up. Alice?
2	Alice	A 14 line poem

Janet was specific in the intended outcome for this question. Rather than asking the students to perhaps list the types of poetry they had covered so far, she focused on the term 'Haiku' and the question asked for its definition.

She asked the question to the whole class and chose one of the students to answer her (line 1). The request for hands up had two outcomes: firstly it acted as a reminder to the class not to call out – they all became quiet at her request – secondly it relayed to them that this section of question-answer was one which required the students to 'bid' for attention (Mercer, 1995, pp.44-45). On this occasion Alice was incorrect.

JANET

The teacher repeated the term, thus prompting Alice for another answer.

(Extract 8.2.1d)

1	Teacher	Right – so far with poems we've looked at a Haiku, which is a what? - Hands up. Alice?
2	Alice	A 14 line poem
3	Teacher	Haiku…
4	Alice	3 line
5	*All*	*Others all join in saying answers*
6	Alice	No – 4 then 7 then 5…
7	Teacher	*Responding to another answer –* 5, 7, 5?
8	Teacher	(*to A)* but it's 3 lines, you did get it, just got a bit confused. *Smiling at her for encouragement*

This one word response from Janet, uttered as a partial question with a slight upward inflection, was followed by a more tentative answer from Alice (line 4). The slight question in the teacher's tone, and the quieter response from Alice led the class to believe that this answer may have been wrong too, and they all started to join in, calling out what they thought were the right answers. Janet ignored the class suggestions, and confirmed Alice's answer with an encouraging smile before returning to her first – wrong – answer, to clear up the misconception for everyone (*line 1, Extract 8.2.1e*).

JANET

(Extract 8.2.1e)

1	Teacher	And so a 14 line poem is a what?
2	Answer	A sonnet
3	Teacher	A sonnet, excellent.
4	Student	*A student asks about something else (unintelligible)*
5	Teacher	We're going on to that in another lesson, but it's very good you're aware of it.

At this stage of the lesson, the expectation from Janet was that students remembered specific aspects of an earlier lesson. She focused her questions so there was no room to move from the presentational responses into 'exploratory' interaction (Barnes, 1976, p.28).

PAUL

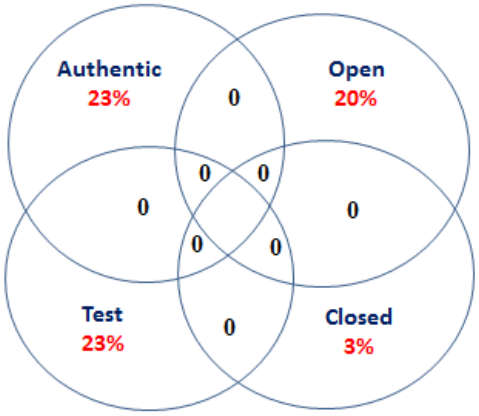


Figure 8.6: Venn diagram of Paul's questioning

The following examples come from a Geography lesson taught by Paul. 38% of Paul's separate utterances in the lesson were in the form of questions. Out of these, 33% were test questions – only 1 of those was a closed question; and 28% were open questions.

Where Janet's style of early questioning was intended to elicit information and establish the recall of facts, the opening of Paul's Geography lesson was similar. However in his lesson the students' recall was aided by them using their exercise books. The opening few minutes in this lesson was in the form of a recap, beginning with a specific question regarding the task the class had been working on (line 1 below). There were only a few possible answers to this question, all factual and all answered with a *presentational* response.

PAUL

(Extract 8.2.2a)

1	Teacher	What were we doing last lesson please?
2	George	We had to draw a scatter graph
3	Teacher	We ended up in the lesson some of us drawing graphs, didn't we?
4	Teacher	OK what were the graphs about please?
5	George	The difference between the UK and Kenya
6	Teacher	Differences between the UK and Kenya. Right, good.
7	Teacher	Anyone like to add to that, or elaborate on that? *(No one answers)*

The question asked specifically what task they had been doing, rather than what they had been learning. Asking students to consider what they had been learning or thinking about may have demanded a higher order thinking process than the *closed, test* question in this case. In most of the lessons observed this higher order thinking was only stimulated towards the end of the lessons.

The teacher reinforced George's answer through his repetition of the answer given, (line 3) and this was followed up with another question to elicit more information. George's answer (line 3) was a short statement, which was all that was demanded of the question, but required Paul to ask two further questions about the task. The first (line 4) attempted to elicit more information about the graphs by using a specific, closed question and one which had a right answer. The third (line 7) was a more open question, which in its phrasing did not give any clues to the students as to the type of answer that was expected. The students did not have anything further they wanted to contribute at this stage.

Paul used the same hands-up approach as Janet, reinforcing his expectation through asking who had their hand up first (line 2). Each of the answers in lines 3, 6, and 9 was read from the student's books. Following Gina's reply (line 3) Paul asked a follow-up question to encourage her to think more deeply about what she had learned (line 5). However rather than elicit a longer, more thought out response, Claude's answer (line 6) was also read from his book where he had written the facts and figures in the previous lesson.

DAVID

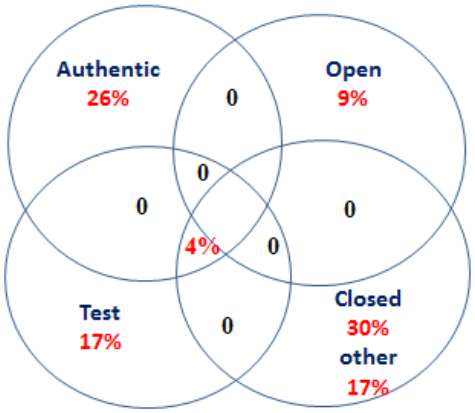


Figure 8.7: Venn Diagram of David's questioning

David asked a total of 23 questions in this lesson. He asked a greater percentage of *closed* questions than any other, some of which were authentic, but most of which had an expected 'right' answer.

DAVID

The following examples were from David's lesson. The first extract was from the beginning of his lesson where he, like Paul, was recapping on the previous learning. Although the first question (line 1) was an open question, and a potential invitation for discussion, the answer provided was read directly from the student's book. David appeared to be trying to encourage deeper thinking with the next question (line3) but the student searched for the information and read this too. Both these answers fitted within the *presentational model.*

(Extract 8.2.3a)

1	Teacher	OK. What can we - what do you know about Kenya so far? Is Kenya a developed or a developing country? That's what we were doing last lesson. Is Kenya a developed or developing country? And do you have a reason for that? Simon, go ahead.
2	Simon	Er … *(reads)* Kenya is a developing country because they have very little money which means there is very little work
3	Teacher	How do you know *(inaudible)*?

4	Simon	Because, when we looked at our fact file, that we made, it said *(reads)* there's - oh where is it - oh yeah, there's like little money, like 4,100 US dollars GNP.
5	Teacher	The GNP is what we use to say how much is earned by each person in a country for that given year. For that given year people were employed for 4,100 US dollars that was their entire salary. So 4,100 US dollars. So Kenya is a poor country because people earn low wages.

David used very little questioning in this lesson. Only 20% of his utterances were questions, and the majority of those were *closed* questions. Half of his *closed* questions were *test* questions. The quote below is taken from the lesson shortly after the above extract. David wanted to check the understanding of a specific term before moving on. Although he only asked one student, the correct answer meant that he was able to ensure that the class all received the definition.

> 'OK we're going to look at the main features of Kenya. When we talk about main features of Kenya we talk about the main physical features and the main human features. Derek – what do I mean when I use the term physical features?'

A second example of David's *test* questioning had a different view point. Asking for a definition had only one right answer. This example asked for prior learning, but has several potential answers and therefore had the potential for greater student contribution.

> 'Right, what we want to know, before we ask is what is the criteria for a good geographical article?'

The answers were presented as one word or one phrase replies; the following extract (8.2.3b) presents the answers to the question cited above.

DAVID

(Extract 8.2.3b)

1	Rebecca	Eye catching
2	Teacher	Right, eye catching. *(inaudible)* OK and you need to give me some things that are specific to Geography *(inaudible section)*
3	John	*(inaudible)*
4	Teacher	OK bold title

5	Sarah	Colourful
6	Teacher	Raise your hands, don't shout out like this (9 sec pause)
7	Stuart	Images
8	Teacher	Images
9	Stuart	Clear text
10	Teacher	Clear text. *(Pause.)* Give us some geographic ideas as well.
11	Steven	You can have it in columns
12		5 sec pause
13	Teacher	OK – lay out or design so you can use colours as your design; you can *(inaudible)* it's up to you. Make sure it's labelled *(inaudible)*

The students called out the answers without the routine of putting hands up. David stopped them doing this (line 6) which resulted in no answers for a few seconds. David repeated each answer, similar to Paul's repetition in an earlier extract. This act acknowledged the validity of the answer as well as ensuring other students had heard it.

DAVID

This extract is taken from 30 minutes into the hour-long lesson. David asked a series of closed questions to check how much the students had learned so far. The replies were short one word answers, and were either right or wrong. They tested whether the students had found the right information, but were not a good check of memory (as they had their books in front of them) or of application and understanding. The questions would have needed to probe further in order to check deeper understanding.

(Extract 8.2.3c)

1	Teacher	OK I'm going to stop you for 5 minutes. Where can I find Ethiopia?
2	*Class*	*Some talk*
3	Angela	Ethiopia?
4	Teacher	Yeah
5	Bradley	In the north
6	*Class*	*Students chat*
7	Teacher	OK – Sssh! Which country is to the west of Kenya? Ssshh! Which country is to the west of Kenya? Kenya's western neighbour. *(repeats)* Which country is to the west of Kenya?

8	Susan	Uganda
9	Teacher	Uganda is correct – good.
10	Teacher	If I live in the South of Kenya, which country am I close to?
11	Neville	Zimbabwe

Line 7 was spoken with no pause for thinking time. The teacher continued to ask the question while students found the answer in their books. The continued 'sshh' hinted to the class that there was no expectation of discussion, simply for the students to find the answers they had written. The answers shared were all correct. The task was not difficult or challenging and gave the teacher the information that those who joined in – Bradley, Susan and Neville – all knew how to find the information. What it did not tell him was whether they could highlight aspects of the country to suggest a deeper understanding of what they had been reading. It also did not tell him about the other 27 students in the class and their progress.

KATHY

The only questions Kathy asked in this Science lesson were those to recap prior learning (Extract 8.2.4a) and to establish rules of expected behaviour.

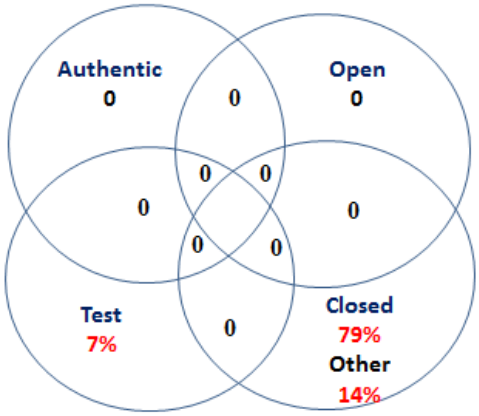


Figure 8.8: Venn diagram of Kathy's questioning

This diagram of Kathy's questioning showed a different combination than the others presented so far.

KATHY

In the example below, Kathy wanted the class to remember the difference between exothermic and endothermic. She asked the same question several times, each time receiving a different answer. Max answered first (line 2) and Kathy's response was to check whether the rest of the group agreed. This was actually the right answer, but as she appeared to question Max's reply, the others start to wonder. Samuel agreed that Max was right (line 4), but Kathy persisted in her questioning. Consequently Estelle offered a different answer (line 6). Kathy questioned this reply too. The nature of the closed questions, with only one right answer, led the students to jump between the two terms until sometime later in the lesson Kathy confirmed that Max's initial answer was in fact correct.

(Extract 8.2.4a)

1	Teacher	The flask got warm and gave out heat. Excellent. Now which word – what does that apply to? What type of reaction is that? One that is warm and gave out heat. What type of reaction is that – do you remember?
2	Max	Exothermic
3	Teacher	Exothermic, Max thinks. Is that right? (1) Does anyone agree with him? Samuel? Do you remember what we did yesterday? Is exothermic giving out heat?
4	Samuel	Yes
5	Teacher	It is? OK Estelle, what do you think?
6	Estelle	I was going to say I thought it was endothermic
7	Teacher	OK – so you think endothermic was the one that warmed up and gave out heat.
8	Estelle	Yeah.
9	Sandra	*Student asks a question about energy – inaudible*
10	Teacher	OK so which one was it – do you remember on Friday when we did the experiment when all the oxygen came burning off? We collected it and *(inaudible)* What did the flask feel like in that one? What did the flask feel like in Friday's experiment?
11	Sandra	Oh, warm.

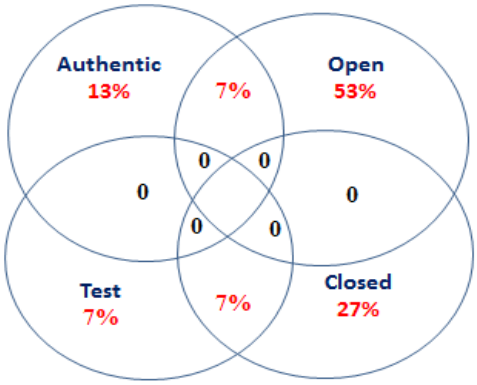


Figure 8.9: Venn diagram of Ruth's questioning

Ruth asked a range of question types in her lesson. There was a marked difference in the responses of the students however and some of the reasons for this are discussed below.

RUTH

Ruth's ICT lesson was structured so that the students had watched a short animation and discussed what aspects they had noted in it. The teacher then asked them a series of closed questions to determine what they had found. The extract below demonstrates how Ruth asked the lead question and four students put up their hands to offer their answers. Each answer was one word, and the teacher repeated the answer by way of acknowledging the student's contribution. There was no evidence that the answer was correct, nor were there any follow-up questions to help the students to develop their thinking. The learning of those students who contributed was superficial, and was not measurable for those who did not get involved.

(Extract 8.2.5a)

1	Teacher	OK - what about this? What are the things we have go in here? What have we got?
2	Jim	Pictures
3	Teacher	OK, pictures
4	Lara	Information
5	Teacher	Information
6	Ruben	Colour
7	Sandra	Animation
8	Teacher	Animation

RUTH

The second extract below is a typical example of when the teacher went round to talk to the students during their group discussions. She asked the same question in line 1 that she had set as a lead question to the class at the start of the task. Sandra answered (line 2), and Ruth repeated her answer. The 'OK' that followed gave Sandra the response that told her she was right, but did not take the opportunity to develop Sandra's thinking by asking further take-up questions.

(Extract 8.2.5b)

1	Teacher	What do you like about it? Is there anything that you like?
2	Sandra	Answer: it's very simple.
3	Teacher	Huh? It's very simple, OK.
4	Teacher	*Asks different groups what it is they like about it. She plays it again while she is going round*

There were limited learning conversations evidenced in this lesson.

8.2b Questions intended to provoke discussion

A 'discussion' for the purposes of this research is defined as being a conversation between teacher and students or student and student which was more than four interactions in length and developed from the same subject. Not all of the teachers observed enabled students to contribute to discussions in their classes. Ruth, Kathy and Glen evidenced no student discussion either in whole class activities or small group tasks. This is not to say that they did not try to stimulate discussion, just that none was forthcoming. The exploratory contributions from students which usually featured during extended conversations, has been examined from several angles in earlier sections in the thesis. This section therefore looks specifically at teacher questioning designed to provoke discussion.

The three teachers, who frequently used questions to provoke discussion, and have been chosen to illustrate this feature, were David, Glen and Janet; the outcomes for each were different.

Each time a teacher asked a question to provoke a discussion, a tick was placed in the relevant column. There were often overlaps with question types, which have been plotted into the charts below.

<u>DAVID</u> – 8 questions to provoke discussion

Table 8.8: Table to show types of questioning used by David

	Elicitation	Probe	Closed/ other	Open	Test	Authentic	Recall	Discursive	Statement	Instruct	Check
1	/					/	/	/			
2		/		/							
3	/								/	/	/
4									/	/	
5									/	/	
6					/						/
7	/	/	/								
8					/						

In David's lessons there were eight occasions when he used questions to stimulate a discursive response from the class. The chart displays the different intent behind each of the questions, either in purpose or delivery. The illustration below (Extract 8.2.6a) is a description of question 2 in the chart: an *open* question which *probed* for more information. The example was chosen because the evidence from other observed teachers was that the pattern of asking open and probing questions did encourage discussion amongst the students. However, this was not the case on this occasion.

In the illustration below Simon was responding to a question David asked to elicit information covered in an earlier lesson. Simon reads his answer from a book (line 1) and David responds in line 2 with another question. The style of this question was an

‘authentic’ one - that is one which did not have an expectation of a specific answer. In this case the question was, ‘How do you know…?’ This could have, had it been developed through further questioning, initiated a discussion either between him and Simon, or amongst the students. However, Simon answered and the lesson moved on in a different direction.

DAVID

(Extract 8.2.6a)

1	Simon	Er … *(reads)* Kenya is a developing country because they have very little money which means there is very little work
2	Teacher	How do you know *(inaudible)*

As had already been noted in the style of David’s delivery, most of his questions were based around statements or instructions to the students. There were many occasions where David was recalling information from earlier lessons, or eliciting facts from students to check current learning. Few of David’s eight questions which had the potential to provoke discussion actually had the desired effect. It could be argued that the reason for this was due to the nature of the closed, factually based questioning and the fact that they did not produce further follow-on or uptake questions. This suggests that the context of the lesson, and the regularity of the strategy used, is an important factor in determining outcome. If the students are not used to open questions or occasions where the teacher encourages exploratory, sustained conversations, then they will not readily fall into that mode of working. They understand ‘typicality’ and expectation and need to be prompted to accept a different approach if the teacher wishes a different outcome.

GLEN – *8 questions to provoke discussion*

Table 8.9: Table to show types of questions used by Glen

	Probe	Closed/ other	Authentic	Teacher prompting	Dialogic – points of view	Discursive	Leading	Statement	Instruct
1	/	/							
2	/						/		
3	/	/					/		
4	/				/	/			
5				/	/			/	
6			/				/		/
7								/	/
8	/						/		

Glen's 'probing' questions in contrast were closed or leading and they were with regard to the practical task on which they were about to embark. He asked them 'what's the difference between…' which required a single, specific answer. Asking 'what the different *applications* might be' could have provoked a more considered discussion.

The occasion where Glen asked for students' points of view was when he asked Trevor *(Extract 6.1.4a)* to peer assess a fellow student's work. When carried out effectively, peer assessment has the facility to encourage students to articulate what makes something successful and what they can do to improve it. On this occasion the query is based on an action for which there is only one right way of doing it. Consequently the nature of the task limited any opportunity for sustained or reflective discussion.

JANET – *21 questions to provoke discussion*

Table 8.10: Table to show types of questions used by Janet

	Elicitation	Develop	Probe	Closed/ other	Open	Test	Authentic	Teacher prompting	
1				/		/			First 10 minutes
2		/		/		/			
3	/				/		/		
4	/		/	/		/			
5	/				/				
6					/	/			
7			/		/		/		
8	/		/		/		/		
9					/		/		
10	/			/		/			
	Elicitation	Develop	Probe	Closed/ other	Open	Test	Authentic	Teacher prompting	
1		/			/		/		After 10 minutes
2		/			/		/		
3		/			/		/		
4					/		/		
5		/	/		/		/		
6			/		/		/		
7			/		/		/		
8		/			/		/		
9								/	
10		/			/		/	/	
11					/				

There was a marked difference in the manner of questioning at different times in Janet's lesson. It was divided into two sections at the start of the lesson, whether consciously or subconsciously, and her style of questioning was reflected in this. For the first 10 minutes of the lesson, Janet's questions favoured those intended to elicit information and were 'closed' and 'test' questions. She then started to develop students' thinking through more 'open' and 'authentic' questioning. After this ten minute activity Janet's questions were nearly all developmental, 'open' and 'authentic'; after the first ten minutes Janet did not ask any closed questions. The impact this had on students' responses has been fully examined earlier in chapters 6 and 7.

The importance of planning for questioning was apparent through the analysis of these lessons. In the lessons where students were able to engage in learning talk which led to deeper thinking, it was because the nature of types of questions and the intention behind them was shared with the students, and the responses were thoughtful and sustained. The recommendations which are based on these conclusions are described more fully in the next chapter.

Chapter 9: Conclusions and Contributions to Knowledge

The data and analysis, coming as it did from literature searches, observation and interview, led to the findings that Learning Talk – particularly Barnes's 'exploratory' domains – led to deeper learning. The confidence in this statement comes from the rigour employed in analysis, using existing theories and evidencing these in the observations of lessons.

Deep learning is defined in this thesis as being that which requires a higher level of thinking to achieve. It is seen when the student is able to demonstrate an understanding of new and existing knowledge. Evidence from this research shows this student asking questions, sharing the development of ideas, and processing connections to existing frames of reference. The evidence here suggests that the process of achieving this depth of knowledge was best achieved through talk. It was observed through paired or group exploratory talk, where ideas were tried out, time and again, before establishing themselves as embedded knowledge. The most effective characteristics to achieve this deeper learning were shown as exploratory talk and questioning, requiring planned, collaborative activity.

The OFSTED framework and the Teacher Standards are designed to measure teachers' performance in terms of set criteria. However there is no explanation written in these as to <u>how</u> to meet the standards. Although educational research has described the successful learning environment as being one which offers opportunities for metacognition, reflection, collaborative practice and teacher-student interaction, there is no specific reference to these in the OFSTED criteria. Additionally, the Teacher Standards refer to the teacher paying particular attention to 'how to personalise learning' (Department for Education: TDA, 2008) and to provide 'opportunities for all learners to achieve their potential' (Department for Education: TDA, 2008*)* but does not specify what this means in practice.

This thesis addresses this omission through its examination of specific research into learning talk. Furthermore, although prior research has highlighted types of both student and teacher talk, there is little published research into the *impact* teacher talk has on the level of student learning. Combining elements from the cited research my thesis has provided new models which show some of these connections, thus enabling teachers to examine their contributions to establishing effective learning talk.

The main theoretical conclusion, with respect to earlier research, is to be found in the nature of development from the theories of Piaget and Vygotsky to the requirements of the twenty-first century learner. My research has contributed to knowledge in the following two ways.

1) It offers practical solutions to enable teachers to demonstrate OFSTED criteria by finding the connections between teacher and student talk to enable deeper learning. (Question 1 and Question 2).
2) It has built on earlier theories to close the gap between Government measurements and current educational theories. (Question 3).

The research questions are listed below, with their related conclusions.

Question 1: To what extent is it possible to enable classroom teachers to demonstrate specific OFSTED criteria and satisfy the Government's regulated Teacher Standards?

The first argument is that greater clarity is required by teachers to understand how the various standards could be met, as this clarity is missing from OFSTED and Teacher Standards documentation, and that a large aspect of effective learning and teaching can be brought about through enabling learning talk in classroom activities. The first contribution to knowledge is evidenced in the findings of the research which have led to the deeper analysis of theories from Bloom (1950s), West-Burnham and Coates (2005), and Mercer and Hodgkinson (2008) to create further methods of measuring the effects of learning talk. This argument is further developed in the response to question 3. Aligned to these findings and a further contribution to knowledge is the method in which the analysis was generated, through the development of an Observation Database. This has resulted in a new model for observing teaching in the research school and provided material for professional development of teachers in local schools and has been presented at national conferences as a tool for developing observation models. The impact of the sharing of this research has been a contribution to the improved teaching and learning in the research school where 97% of teachers currently produce good or outstanding lessons, and a 22% increase in the attainment of students over the last two years.

Each model answers a particular area that has been examined. The analysis of the observations was carried out with rigour and objectivity, by using four chosen indicators of deep and effective learning (see earlier chapters).

1. West-Burnham's and Coates's Models of Learning (2005, p.35),
2. Mercer's and Hodgkinson's 'Four Classes of Communication Approach' (2008, p.21),
3. Bloom's Taxonomy – affective and cognitive domains (Beirne and Velsor, 2012, p.22),
4. OFSTED's (2012) indication of rates progress.

Each one had a specific focus, and each held relevance for particular characteristics. West-Burnham and Coates's model specifically related to shallow, deep, or profound learning characteristics. Mercer and Hodgkinson's classes of communication was concerned with the teacher's approach, in terms of dialogic or authoritative, and the impact this might have on the learner. Bloom's Taxonomy described a range of student responses with stated levels of lower to higher order thinking and could be used to measure opportunities for deeper learning. OFSTED indicators were used when the observable characteristics suggested it may fall below OFSTED requirements for a good lesson. This set of indicators was necessarily used in conjunction with other models, as on its own was insufficient – as this thesis has argued.

Current educational practice still demonstrates many aspects of the theories presented by Vygotsky and to some extent those of Piaget. Both argued that the use of language was vital to generate thinking, and subsequently learning, a premise supported through this research. It is their references to collaboration and interaction, arguably under-developed compared to contemporary thinking, which are still commended today as elements of effective learning. However, the research cited earlier in this thesis, along with the findings from this study, suggest that these elements are still somewhat absent from current practice.

My research has further refined these early theories, building also on more contemporary researchers such as Barnes (1976), Alexander (2008), and Hargreaves (2008), and thus

highlighting the need to develop in students an aptitude for higher-order thinking which is usefully stimulated both through learning-talk and carefully planned collaborative activities. Although this thesis demonstrates development of earlier educational theories, the main contribution to knowledge lies more in how these match the expectations placed upon education from the Government. What challenges contemporary education is the Government's directive that all our learners make progress, are autonomous and able to engage in independent learning. This context is very different from the one faced by learners in the early part of the twentieth century. This thesis has, therefore, re-examined earlier educational theories, developed new models which match those theories to the expectations of contemporary learners, and offered clarity to the judgement of teachers in meeting these expectations.

Question 2: In what ways might a teacher influence the nature of learning talk in the classroom?

There were several practical conclusions evidenced through the research with regard to how the teacher can manipulate the nature of learning talk. The investigation highlighted the need for opportunities for deeper learning, students being active partners in their learning and prolonged interactive activities promoting various aspects of learning talk. The main two aspects where teachers could affect learning talk were found to be through questioning and collaborative learning activities.

a) The evidence in this case study demonstrated that a greater involvement in exploratory discussion led to deeper learning. On occasion this exploratory talk was evidenced in whole class activity. These were cases when the teacher asked the types of questions to students to encourage them to think out loud, and when followed up with further questions and prompts enabled a sustained dialogue which allowed opportunities for students to engage in exploratory interactions.

b) More often however the main occurrences of these exploratory discussions were when students were embarking on collaborative tasks in small groups. The most successful were when the teacher had planned the themes for the groups to

investigate and gave questions and prompts throughout the activity to maintain focus and develop learning. When the teacher gave specific tasks for individuals in the group this also helped to direct the learning without removing the control from the students. Notably these tasks needed to be specifically planned for appropriate learning talk, otherwise the students' contributions were misdirected or too haphazard to have clear learning outcomes. It was rare to observe exploratory interactions when the teacher had not planned for this.

c) Pointed and deliberate questioning to individuals in the groups was an effective way of the teacher encouraging deeper learning.

The practical conclusions drawn from this research suggest that teachers may benefit from greater awareness of the impact learning talk can have on pupil progress. This awareness, and a greater acknowledgement of the role the teacher plays in eliciting this talk, is vital if there is to be any change in practice. In concrete terms the production of observation forms which focus specifically on those elements will enable teachers to more critically apply themselves to meeting the teacher standards. This, in turn, requires further teacher training to both raise awareness and enable these elements to be addressed.

The findings from this research work support the claims that the presence of these characteristics leads to the potential for a deeper level of learning. Implicit in this suggestion is that having enabled these characteristics the teacher will have achieved those expectations being required from OFSTED and the Teacher Standards.

An additional finding from this research, and one which develops the theories of these practitioners in a more innovative way, is demonstrated through the process of linking the teachers' approaches with the type of contribution of the students, and arguably with the depth of their learning. In this research, the predictions of well-known theoretical models have been tested and refined through a rigorous systematic research process. The result is a set of new models of communication in the classroom which, when applied, have been proven to lead to deeper learning.

They offer the potential to be modified by teachers in other schools in order to evaluate their own aptitudes to create opportunities for learning talk. These models will consequently have important repercussions on future research into language and understanding as well as the capacity for the development of new pedagogical strategies.

Once the analysis of the effectiveness of the ranges of learning talk had been carried out, by using a combination of the four indicators, it was possible to highlight those characteristics and features which led to deeper learning. This in turn led to the creation of new, evidence-based models which combined the existing theories with the evidence found through the observation analysis.

Three main links were established in this case-study and they are expressed in the models below.

1. The link between styles of learning talk and depth of learning, and its impact on progress.
2. The link between types of teacher talk and teacher questioning, and its impact on student learning opportunities.
3. The link between planned collaborative tasks and student learning.

Model 1

<u>The link between styles of learning-talk and depth of learning, and its impact on progress</u>

The model described below has been formed from a combination of information gleaned through comparing the data analysis from this research work with the four established pieces of research as referred to in Chapters 3 and 8. These were

1. West-Burnham's and Coates's Models of Learning (2005, p.35)
2. Mercer's and Hodgkinson's 'Four Classes of Communication Approach' (2008, p.21)
3. Bloom's Taxonomy – affective and cognitive domains (Beirne and Velsor, 2012, p.22)
4. OFSTED's (2012) indication of rates of progress

The model suggests that the following six learning processes need to be present if deep learning is to occur.

- Students take part in extended and sustained dialogue
- Students ask questions
- Students are able to reflect on their learning
- Students are engaged in exploratory dialogue – trying out answers and ideas
- Students are involved in interactive learning activities both with the teacher and in student groups
- The teacher delivers a dialogic approach to the lesson

Figure 9.1: Learning processes for deeper learning

In the observed lessons when each of the above processes was present then the students also demonstrated their achievement of both the *deep learning* and *embedded learning* attributes.

This has been expressed in the following table (Table 9.1) which also shows that when these elements were missing or unfocused, the students displayed more superficial learning as described in the first column.

Table 9.1: Evidence observed showing superficial, deep and embedded learning

Superficial learning	**Deep, meaningful learning**	**Embedded learning**
The student paid attention and was compliant	The student participated in, and actively responded to, the learning. The student attached value to their learning.	The student challenged their own learning by asking questions for deeper understanding
There was a dependence on the teacher for learning	There was evidence of the independent learner	The student was involved in collaborative learning and development without teacher presence - interdependent learner
The student recalled information and facts – sometimes requiring helpful questioning and prompting	The student demonstrated understanding and was able to articulate new knowledge	The student displayed wisdom through being able to interpret meaning
The activities required recall and memory	The activities required application of information to	The activities required creating or devising of new ideas;

	new topics; being able to defend opinion; compare ideas; justify thinking	reconstructing information for new projects; summarising information
The student replicated information through descripting, labelling, listing, naming	The student was able to analyse – they were able to identify and make inferences based on understanding	The student internalised information, which influenced personal characteristics; they displayed empathy
The student understood basic information and was able to explain this	The student was given opportunities to solve problems. They demonstrated that they could relate learning to themselves by reinterpreting information and reflecting on their own experiences	The student used intuition and imagination to solve problems
Limited progress was made	Progress for all students who demonstrated these characteristics was evident	Rapid progress for those students who demonstrated these characteristics was evident

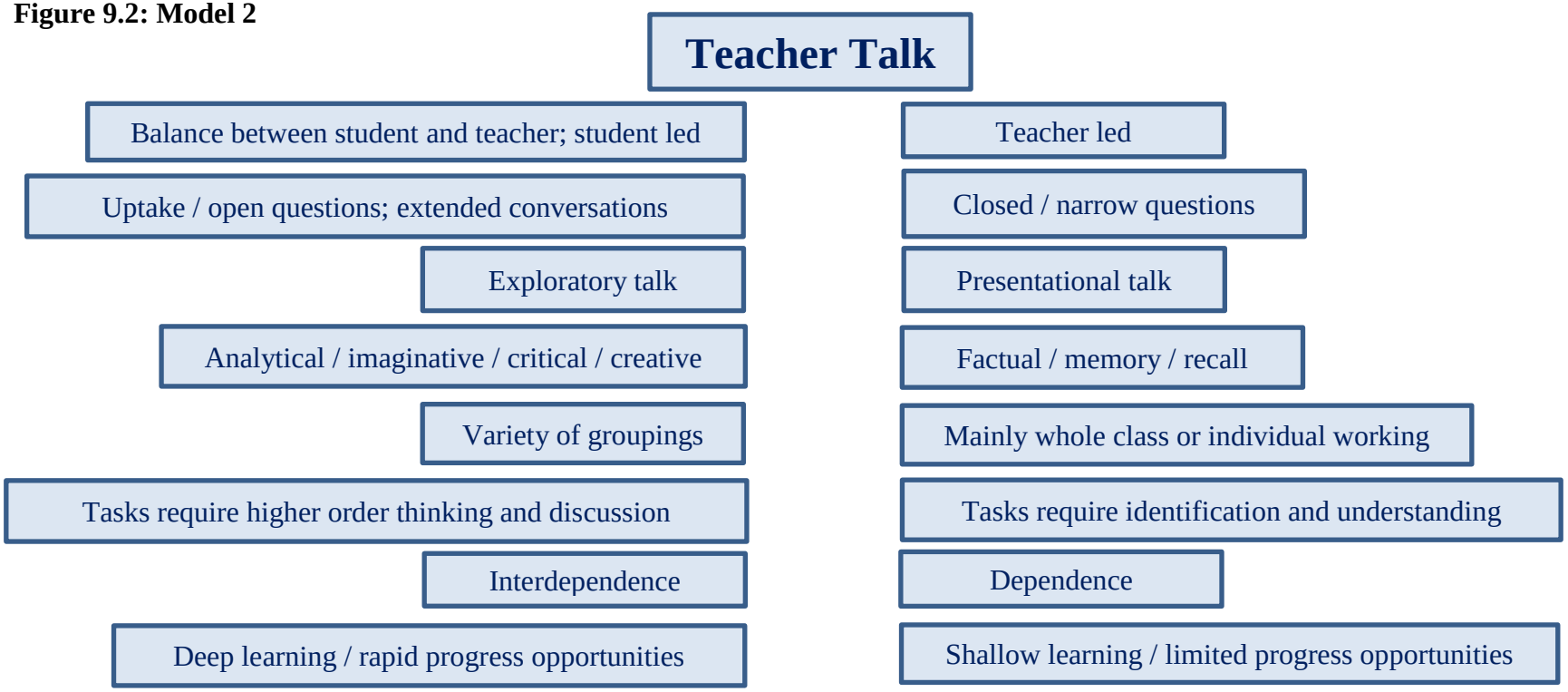
A development of this example is found in Model 2, where the role of the teacher and his or her input is shown as being vital for deep learning to be allowed to occur. The input from the teacher was shown to directly impact upon the opportunities for the student. In cases where the teacher did not facilitate the learning talk in the required ways described above (Table 9.1, p.269), the students were unable to engage in deeper learning: they were restricted and their progress was stifled.

Model 2

<u>The link between teacher talk and learning opportunities</u>

The model below (Figure 9.2) is an expression of the link between the type of teacher talk displayed and those student outcomes which these evidenced.

Figure 9.2: Model 2



The left-hand side of the model (Figure 9.2, p.271) describes the most suitable situation for deeper learning to occur. In the observed lessons this was the result of a more balanced approach between the student and teacher, where the teacher gave real opportunities for the students to engage in a learning dialogue. Often these were lessons where the tasks were imaginative or allowed for critical and analytical thinking. The result was a more independent learner who was able to access higher order thinking through varied interactions and one who wanted to challenge their own learning through asking questions both of the teacher and their peers.

The right-hand side of the flow-diagram (Figure 9.2, p.271) describes those lessons which showed the teacher demonstrating a more authoritative approach and using mainly closed or narrow questions. The expectation of the teacher in these situations tended to be for students to recall facts, establishing little more than a good memory. In this combination, with little student interaction, the outcome was shallow learning and limited progress. Other illustrations of lessons within this classification saw students engaged in whole class activities or in individual tasks. In these situations there was very little planned-for collaborative activity and consequently little opportunity to develop ideas and thoughts through exploratory talk. Here the students showed more dependence on the teacher for their learning, which in turn resulted in limited progress.

Model 3

<u>The link between planned collaborative tasks, focused questioning and student learning</u>

The role the teacher played in ensuring effective learning talk was also affected by the choice of task and opportunities for collaborative learning – that is working in either pairs or groups. The occasions where students were able to engage in exploratory dialogue and higher order thinking were those where the teacher specifically planned for pair or group discussion with guiding questions or hints for developing their ideas. Those occasions where students were either required to work independently or where there was a chance to talk but without a guided structure evidenced fewer contributions from the students and limited their potential to explore ideas and engage in higher order thinking.

The collaborative learning opportunities evidenced in this research led to greater exploratory and sustained conversations and was linked inextricably to the way the teacher planned the lesson. The more successful activities in terms of enabling learning talk were where the teacher

- determined the groups required for the task
- set specific questions or tasks to scaffold the learning talk
- modelled expectations – what does success look like?
- left them alone to do the work (once all of the above were in place)

Open, authentic questions from the teacher with room for the students to develop their own ideas were important. Equally important were the opportunities for students to ask their own questions, both of the teacher and to each other. None of these happened by chance; all required a depth of understanding from the teacher and careful planning to enable opportunities for student involvement in their own learning and achievement.

The second contribution to knowledge surrounds the need to further develop existing educational theories so that they can support practitioners in meeting the expectations of Government initiatives as measured through OFSTED criteria and the teacher standards. As has been expressed earlier in the thesis, the wording of the various criteria are quite ambiguous and offer no clear guidelines to the teacher in how to demonstrate these in practice. This research has aimed to fill this gap by offering suggested strategies for the teacher both in terms of classroom practice and well-defined observation techniques to validate judgements in the classroom. The following recommendations were put in place in the research school as a result of the research analysis and findings.

1. Teachers in the research school were offered a training programme which consisted of the following:
    - Questioning to encourage higher order thinking
    - Collaborative group work
    - Creative teaching to facilitate student interaction

2. Revised lesson planning forms and lesson observation forms reflected the need for student interaction and higher order thinking. The first draft of these is in Appendix 13 (p.314) and is currently being trialled.

3. Observation training for senior leaders was developed to share the findings of the research and to develop strategies to observe aspects which were highlighted in the conclusions chapter.

Question 3: How might it be possible to create effective, robust methods for evaluating and measuring learning talk?

Early definitions of how we learn were historically generated from educational psychologists and scientists. Today, academic researchers are still developing theories about how we learn, but the difference lies in the fact that they are no longer alone in issuing expectations as to how this learning should be measured; this responsibility is now shared with the Government. As stated previously there has appeared a growing division between current theories of learning, and what the Government expects in terms of outcomes from the contemporary teacher. This thesis has therefore addressed some of the inconsistencies between Government expectations and the theories of effective learning in current educational institutions.

Barnes's theories of student learning, 1976, and those who built on his research (Alexander, 2008 and Hargreaves, 2008) resonated the most with the findings evidenced in this research. To reach a position where students could start to take responsibility for their learning, a range of characteristics were described and were demonstrated in this research: questioning; exploratory language; varied group interactions and collaborative learning opportunities. Vygotsky's belief that language was a prime factor in the development of the student has also been supported by the findings of this research, which has clearly demonstrated how students in the research school, given the opportunities to interact meaningfully with each other, could build on their learning and deepen their understanding of issues they were studying.

Perhaps the most important practical achievement of this research is the establishment of an innovative and robust process whereby teachers can examine different types of learning talk, measure its presence in the classroom, and evaluate the effect it has on student learning. The processes used in this research – video recording of lesson observations, and the use of the Observation data analysis charts – have provided a method to examine the links between the teacher input and the depth of student learning thus determining future teacher-training needs.

The thesis has taken current theories and examined them in practice against existing methods of measuring success, the OFSTED framework and the Teacher Standards, thus highlighting what needs to be in place for learners to meet these expectations. The contributions to knowledge therefore highlight implications both for practice and further theoretical debate.

The conclusions led to the following recommendations:

1. Teacher training sessions on questioning; collaborative learning and the value of learning talk.
2. Lesson planning forms which allow teachers to plan for higher order questioning, collaborative tasks and opportunities for greater questioning opportunities – for both students and teachers – during starters and plenaries.
3. Lesson observation forms which highlight the requirement of higher order questioning, opportunities for group tasks and creative starters and plenaries which develop deeper learning from the outset.
4. The use of video as a research method for gathering data from lesson observations.
5. The development of an Observation Database which can be used to aid observation and analysis of learning talk in the classroom.

The research school already works closely with local schools with regard to teaching and learning developments. These links also mean extended research opportunities to examine methods to evaluate the success of the learning conversations through observation and student voice. Plans are in place to share the findings and conclusions of this research with those schools with a view to further enable teachers to address how to demonstrate

OFSTED criteria. The first of these plans has recently been launched with a joint conference between the research school and another local school. The conference allowed for the sharing of some of the research outcomes, through the delivery of workshops on teacher questioning and lesson observation. The workshops featured videoed lessons, which had been specifically prepared for the delegates, with the aim of them being able to examine the impact of questioning and other teaching strategies, on promoting different types of learning talk.

Since this research started the work of the teachers at the research school has begun to demonstrate signs of changing practice, and the impact of this is becoming apparent. It has been evidenced through teacher observations which have cited characteristics of learning talk and through the comments generated by the most recent OFSTED visit in June 2013. These comments confirmed that the lessons which were graded as 'Good' or 'Outstanding' were those in which student interaction was high, and the balance of contribution between teacher and student was more equal.

> 'Where teaching is most effective, teachers create a positive atmosphere for learning. Students are encouraged to work well together and ask questions. Consequently, attitudes to learning are highly positive and enthusiasm is fostered; students are keen to participate and contribute.' (OFSTED report on research school, 2013)

The report also reflected the results of the teacher training programme which was put in place following the research analysis. It described this provision for staff training as being 'good' and that 'teaching and learning are managed well. This is reflected in learning that is mostly good, but with elements that are outstanding.' (OFSTED report, 2013)

Following my final data analysis, the original questions which were asked to the student cohort in the focus-group discussions were re-structured and posed to a different set of students. Their answers supported the belief that the on-going nature of my research was having a positive impact upon the research school. A group of five students selected from each year group were told that I was looking for the answer to an overriding question: what do teachers do to help you learn? Students were placed in year groups and asked to discuss a set of questions. They were then asked to write notes of their findings on the sheets

provided. Their responses were shared with teachers and helped to generate the next stage of teacher training activities.

The answers that stemmed from this, (Appendix 14, p.316) were classified in the following categories, which themselves can be seen to link closely to the findings of this research.

- Good learning opportunities;
- Independent learning/thinking opportunities;
- Sharing lesson intentions;
- Knowing and understanding what to do to improve;
- Sharing levels;
- Active learning;
- Group and pair work;
- Best learning environments.

A significant feature of the students' answers was that they had developed a common language in which to communicate their learning experiences and needs, which had been missing from the answers the student cohort had given at the start of the research. The reasons for this can only be open to conjecture but they are arguably due to the fact that discussions about learning, between teachers and students, have become more commonplace. It is hoped that such developments provide evidence that the school has made significant progress in terms of students being empowered to take greater responsibility for their learning through a meta-cognisance of the power of their contributions.

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Appendix 1 - School context

The research school was one of twelve schools in the borough.
Eight of them had a selective intake:

4 single sex grammar schools – fully selective

2 partially selective

2 'bilateral' schools where a grammar stream ran alongside non-selective streams

There were also two schools coming out of special measures, and two schools with no selection processes. In addition there were five special schools. The research school was situated amongst these.

The following data was gathered from the Local Authority website and shows the difference between the GCSE grades achieved in the research school compared to the other schools in the authority. (Note the change in 2006 to measure 5 A* - C GCSE grades which include English and Maths). The data is presented prior to the start of this research as it places the research school in context.

	Research school GCSE A* - C %	Other schools in local authority %
2000	27	49.2
2001	27	50
2002	31	56
2003	40	56.6
	GSCE % including English and Maths	
2006	16	49.9
2007	29	54.6
2008	32	55
2009	34	57.8

Data from local authority showing GCSE attainment from 2000 - 2009

It should be noted that performance data from the period 2004 to 2011 which was published by the authority offered different data sets each year and as a result, apart from the GCSE figures, none of the data was comparable. For example in 2003 there was value-added data available to compare the progress of students from KS3 to KS4. This was the only year in which this data was published. Similarly information regarding the progress of students from KS2 to KS4 was provided in 2009 but this was not available for any other year and so was not available for analysis. The impact this has on my research was that it was not possible to examine trends from one year to the next.

Appendix 2 - Learning to Learn

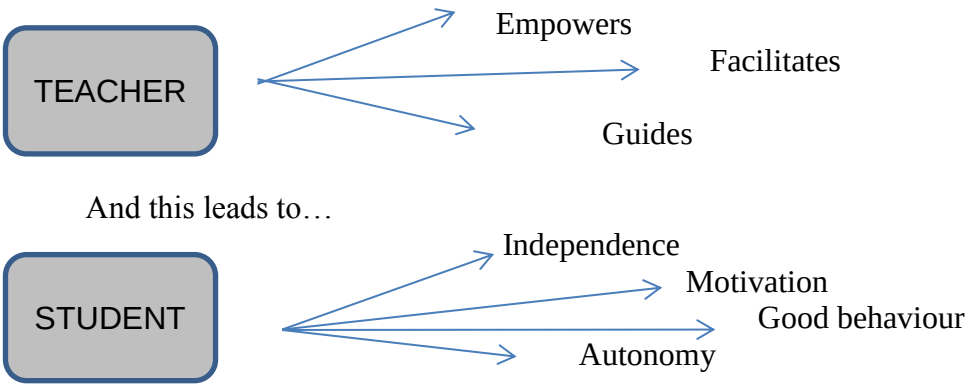
'Learning to Learn' is a published package that enables schools to teach children how to learn. It was initially developed in 2001 by Bill Lucas and Toby Greaney, for the Campaign for Learning, and was designed to 'set the Government agenda for schools in the twenty-first century' (Greaney and Rodd, 2003, p.9). There followed four years of research (alongside two years of independent research by Dr Jill Rodd to cover the first two phases of the study) into the impact of the programme, used by both secondary and primary schools.

It is based on the premise that if students are able to take responsibility for their own learning – through an understanding of *how* they learn – then they are more able to receive new knowledge, and make sense of it. One summary of the published Case Studies from this research claim that Learning to Learn can help

- Raise standards of achievement;
- Raise teacher morale and motivation;
- Make schools more effective, inclusive and motivating for a wider range of pupils.

Greaney and Rodd 2003, p.12

The following chart shows how the Learning to Learn programme claims to affect student development.



Features of Learning to Learn

There are various definitions of *Learning to Learn*. The concept that learning is 'learnable' is cited in Greaney and Rodd (2003, p.41) as part of the Campaign for Learning's

definition of *Learning to Learn*. This definition describes *Learning to Learn* as a 'process of discovery about learning' *(*Greaney and Rodd, 2003, p.41*)* whereby we can help, through the Learning to Learn lessons, to develop life-long, independent learners.

The claim is that one can develop an ethos of learning and teaching whereby all lessons are couched in the theory that students can use learning skills and attributes to ensure the content of subjects is accessible. Teaching students how to learn, and thus empowering them with the skills to take greater ownership of their learning, sits neatly within the premise of 'personalising learning' (Hargreaves, 2004, 2006; OECD, 2006; West-Burnham and Coates, 2005) and many researchers lay great importance in the belief that 'if they [students] feel that the system respects them and takes their individuality into account' (OECD, 2006, p.87) then they will make more of an effort to make progress.

The notion of child-centred education is not new. The idea that education should be fitted to the needs of the child and not the child to the school was central to the thinking of Rousseau in the 18th century, who purported that as individuals vary, therefore education must be individualised: 'Every mind has its own form' (Rousseau, 17?). Hargreaves (2004, cited in West-Burnham and Coates, 2005, p.16)) is quick to point out that personalised learning is not individualised learning but, as West-Burnham and Coates (2005) suggest, it is more about 'enhancing the status of the individual so that learning in social contexts is more effective' (West-Burnham and Coates, 2005, p.17). By responding to the needs of the child, we are simply offering opportunities for the individual to become directly involved in his or her own learning.

It is also not new to read about the merits of students talking about their learning (Britton, 1969, cited in Flutter and Rudduck, 2004, p.22). The notion of 'student voice' is referred to by Hargreaves (2004) as one of the nine gateways by which we can ensure a personalised approach. Without this, the students will not be able to participate on an equal footing. It seems however, that this is where the main dilemma exists. On the one hand we want students to be able to become autonomous learners. On the other, some teachers appear concerned that the balance may tip too much in the other direction and unbalance the power base in the classroom.

The Learning to Learn programme was devised in order to support this concept in a practical way in the classroom. Teachers are offered training and lesson schemes within a structured year-by-year schematic. The book 'Creating a Learning to Learn School' (Greaney and Rodd, 2003) used original case-study research from the Campaign for Learning. They have quoted from 'two years of ground breaking research in 25 schools by over 100 teachers and many thousands of students.' (Greaney and Rodd, 2003, p.9). Out of the several books and pamphlets about the Learning to Learn programme, it appears that many of them share researchers and authors, and therefore have repeated statements throughout. This book offers a breakdown of the concepts behind L2L and summaries of the case-study findings. It gives a positive slant on the programme, with many quotes from the schools who took part, but little in the way of methods used or specific data collected.

Another project – 'The Learning How to Learn' project was carried out at the same time and was a four year research programme funded by the UK Economic and Social Research Council (2001 – 2005). Although carrying many similarities, is different in two main ways. Firstly they believe that separate 'learning to learn' lessons would not be advisable as 'learning how to learn needs to be developed in context' (James *et al*, 2006, p.1). Secondly they suggest they use the phrase 'learning <u>how</u> to learn' rather than 'learning to learn' because the <u>how</u> 'emphasises the *practices* that teachers and learners can employ to help pupils become more effective as learners' (James *et al*, 2006, p.15). This second distinction is unclear as the Learning to Learn programme also emphasises the processes of the learner and teacher.

Sample of Methodologies used in the action research of 25 schools as part of the Campaign for Learning 'Learning to Learn' research

Greaney and Rodd (2003)

School	Hypothesis	Methodology / data collection	Research cohort
1	'Learning to Learn' strategies impact positively on pupil learning and achievement	Data from KS1 National test scores and OFSTED reports	Two cohorts of Year 2 pupils, totalling 84 pupils Pupils had been studying the Learning to Learn programme for two years
2	A learning community facilitates effective learning in Year 9. The 'learning to learn' programme improves Year 9 confidence as learners. Changes in physical environment and school day help pupils learn.	Three year programme for Year 9 students (since Year 7) Training for teachers Lesson Observations Pupil questionnaire Test results	Year 9 students
3	Learning to Learn impacts positively on teacher morale. Learning to Learn impacts positively on parental perceptions of the school.	Professional Development interviews with all staff Questionnaires to parents Letters received from parents Number of applications for posts advertised	Teaching and support staff Parents
4	Using Brain Gym in a systematic and structured way enhances	Match two bottom set Year 9 pupils.	Year 9 bottom set Maths classes

	performance and motivation in subjects for which Year 9 pupils experience difficulty.	Comparison group taught traditionally, target group taught by teacher trained in Brain Gym Test results Anecdotal evidence from students	
5	Year 11 pupils who understand the concept of multiple intelligences will perform better in a block examination.	Target group of Year 11s matched for ability and gender. Target group taught using multiple intelligences which was incorporated and made explicit in the planning, teaching and assessment of the course. Comparison group taught traditionally	Year 11 RE classes
6	Learning strategies have an impact on student motivation and attainment in science in Year 9	Target group introduced to learning to learn strategies that included Brain Gym, ICT, music, learning styles, thinking skills, multiple intelligences, EQ (emotional intelligence). Pre and post tests Performance monitoring (ie mock	25 Year 9 pupils with higher ability in Science compared to comparison group of same size and ability

		assessment tests) Baseline data Questionnaires Interviews	
7	Included: Working with a mentor trained in Learning to Learn approaches will benefit the learning of the current cohort of Year 10-11 pupils The attitudes of subject teachers can help or hinder the success of the mentoring programme	Group of teachers trained in the Neuro-Linguistic programme to improve skills and confidence to act as mentors. Year 11 pupils completed questionnaire Teaching staff completed a survey.	25 Year 10-11 pupils identified by teachers as underperforming

Appendix 3 - Lesson Observation Characteristics - Research School, 2009

Characteristics of an outstanding (Grade 1) lesson
All students make **progress**
Activities are stimulating and ensure **learning outcomes** are fully met
Questioning develops higher order thinking skills and deep learning
Excellent use is made of **time** so that learning progresses at an appropriate **pace**
Students show high levels of **enjoyment** and feel **safe** in their learning environment
Subject Knowledge: Teacher has high level of expertise and high expectations so that progress is accelerated
Students meet demanding and very **challenging** targets
Methods and use of **resources** such as **ICT** are imaginatively used to engage and extend students
Learning outcomes and activities are **differentiated** to meet the needs of **all** students
Learning Support Assistants are well deployed and their support directly impacts on learning
Careful planning is based on thorough and accurate **assessment** which is shared with the students
There is a high level of **independent learning**
Excellent use of **praise** and constructive **feedback**
Attitudes to learning are excellent and good **behaviour** promotes active involvement

Characteristics of a good (Grade 2) lesson
Almost all students make **progress**
Activities are engaging and ensure **learning outcomes** are met
Questioning is mainly for understanding with some students able to demonstrate deeper learning
Good use is made of **time** so that learning progresses at an appropriate **pace**
Students **enjoy** the activities and feel **safe** in the environment
Subject knowledge: Teaching is well informed, confident, engaging and precise so that it impacts on learning
Most students meet **challenging** targets which stretch without inhibiting students
Methods and use of **resources** such as **ICT** are used to engage and extend students
Activities are **differentiated** so they are appropriate for **all** students
Learning Support Assistants and resources are well deployed and have an impact on learning
Accurate **assessment** informs planning and most of the students know how to improve
There are many opportunities for **independent learning**
Consistent and effective use of **praise and feedback**
Behaviour overall is good and students are keen to get on with their learning

Characteristics of a satisfactory (Grade 3) lesson
Most students make **progress**
Activities are planned to ensure **learning outcomes** are achieved
The teacher uses various types of **questioning**
Most of the lesson makes good use of **time** and is well-**paced** to suit students' needs
Most students **enjoy their learning**, are motivated to do well and feel **safe** in the environment
Teacher has a secure **knowledge** of the curriculum and course requirements
The level of **challenge** is sufficient for all groups of students
Teaching **methods** and **resources**, such as **ICT,** are designed to encourage and engage students
Differentiation is planned for, although may not be fully realised
Learning Support Assistants work with individual or groups of students with varying degrees of success
Assessment sufficiently informs planning and indicates to students what to do to improve
There are some opportunities for **independent learning**
Praise and feedback is consistent and meaningful
Student **behaviour** is managed satisfactorily to create a calm working environment

Characteristics of an inadequate (Grade 4) lesson
Most students, or a significant minority of students, make less than satisfactory **progress**, whether it is due to unsatisfactory teaching or the impact of bad behaviour
Activities fail to ensure **learning outcomes** are achieved
There is little use of **questioning**
Teachers fail to use **time** effectively and parts of the lesson either drag or are rushed
Teachers and students do not always adopt **safe** practices rendering students at risk; students show little enjoyment of the lesson
Teacher has weak **knowledge** of the curriculum leading to inaccurate teaching and low demands on students
Learning outcomes do not **challenge** students
Teaching **methods** fail to engage or gain the interest and commitment of the students
There is little **differentiated** work and some groups of students are not catered for
Inadequate use of resources, including **Learning Support Assistants**
Poor **assessment**
Students are not focused on their **learning** and need the teacher to assist throughout the lesson
There is little or no **praise** or meaningful **feedback**
Ineffective classroom management leads to students' overall **behaviour** or attitudes being unsatisfactory
The **teaching is unsatisfactory** which often causes the students' **progress to be unsatisfactory**

Appendix 4 - Teacher Focus-group discussion summary points

The teachers' first discussion highlighted several areas of interest. The opening topic for discussion was what they thought independent learning looked like in the classroom. They suggested the following:

- Students who take initiative – getting resources; knowing what to use and where to find them – and having the confidence to go and get them;
- Students who listen to instructions;
- Students who take risks;
- Students who are not shy of failing;
- Students who question, who extrapolate, who interpolate;
- Students who have the confidence to explore ideas;
- Students who are motivated by interest, who ask for further information, thus extending and enhancing what they have been given;
- Students who show an enthusiasm to try new things;
- Students who show an ability to apply their skills elsewhere;
- Students who are able to adapt to environment/setting/style.

This fed into further discussion regarding whether it was possible to teach independent learning or whether it was an attribute that students could develop over time. They suggested that it needed to be taught but that some students were instinctively independent. There was an assumption that independent learning was taught at primary school although there was no evidence to support this. The general feeling of the group was that they thought students came to them knowing how to work independently and that as a school we did not formally develop this skill further. They all agreed that it was an ideal to be achieved as to work independently led to life-long learning (West-Burnham and Coates, 2005:122). It was suggested that one way to ensure students could take control of their own learning was to make the subject relevant. It was important to cultivate an interest in the topic to engage their desire to learn.

The group explored the notion that if this was a desirable characteristic, which they all believed it was, certain things would need to be in place for it to occur. Most of the cohort suggested that encouraging students to take more responsibility for their own learning required a level of confidence from both students and staff. One teacher used the description of 'letting them [students] off the reigns to let them ask questions and move the learning on themselves'. The concept of being able to step back and allow the students to learn independently recurred throughout the discussion, always with the notion that this required a certainty that this was the right way for them to learn and was not a comfortable option to take.

They examined the view that the reason independent learning was not comprehensively employed was due to a set of barriers. One of these barriers was cited as being low self-esteem; they suggested that the students felt that they 'can't do it so they won't try'. They agreed that the concept that they do not think they can achieve at certain subjects needed to be challenged.

They believed that the reason why learning-skills were not always transferrable was because we had compartmentalised the curriculum by breaking the week into subjects. The students unquestioningly accept these divisions and consequently cannot see the connections between the subjects. The group felt we needed to make these connections for them.

They also felt that the main problem with the curriculum was the nature of current assessment expectations which left little time for 'teaching learning'; all the time in the classroom was needed for the teacher to impart knowledge and then test whether that knowledge had been received. No time was spent teaching the students how to learn, nor was there any time for group work or collaborative activities as these were considered a risk that was not worth taking.

The second staff focus-group discussion, which occurred after the first round of observations, was treated like a professional development training session. The teachers wanted to know what had been successful and what they needed to improve upon. The

focus was on the concept of collaborative work and learning talk. They engaged in a discussion regarding three references which were brought to the group:

1) *Emily's conversation*: *"Her understanding is not gained passively from her companions, or through individualised 'discovery learning', but through argumentative talk in which she and her companions explain, contest and justify their views. … Her understanding is a joint, social, communicative accomplishment" (Mercer, 1995:14).*

2) Different types of talk – to give the opportunity to 'try out' new ways of thinking – *"the flexibility of speech makes it easy for us to try out new ways of arranging what we know, and easy also to change them if they seem inadequate" (Mercer and Hodgkinson, 2008:5).*

3) *"Teachers teach classes but learners learn as individuals… Both the shared construction and the individual struggle to reinterpret are essential" (Mercer and Hodgkinson, 2008:10).*

The following information was also shared with the group in terms of evidence noted from the observations.

1) The more meaningful talk happened when guided by the teacher. Either when teacher directly asked questions and led the discussion or when the teacher explicitly guided the paired talk – ie with questions to answer or points to discuss – with the accepted task of feeding back at the end of the discussion time – therefore making the task more focused.

2) Collaborative discussion only occurred without the teacher in a few cases; it seemed this was with the brighter students.

3) In meaningful conversations the following was present:

- Clear breakdown of what is going to be learnt and done in the lesson.
- Clear, explicit instructions to discuss in pairs / groups.
- Discussion was structured and guided - with questions and pointers.

4) Less successful – but more common – ‘if you like you can have a little discussion about this…’ which gave little credibility or value to the task of discussing.

Appendix 5 - OFSTED General Guidance (OFSTED 2010)

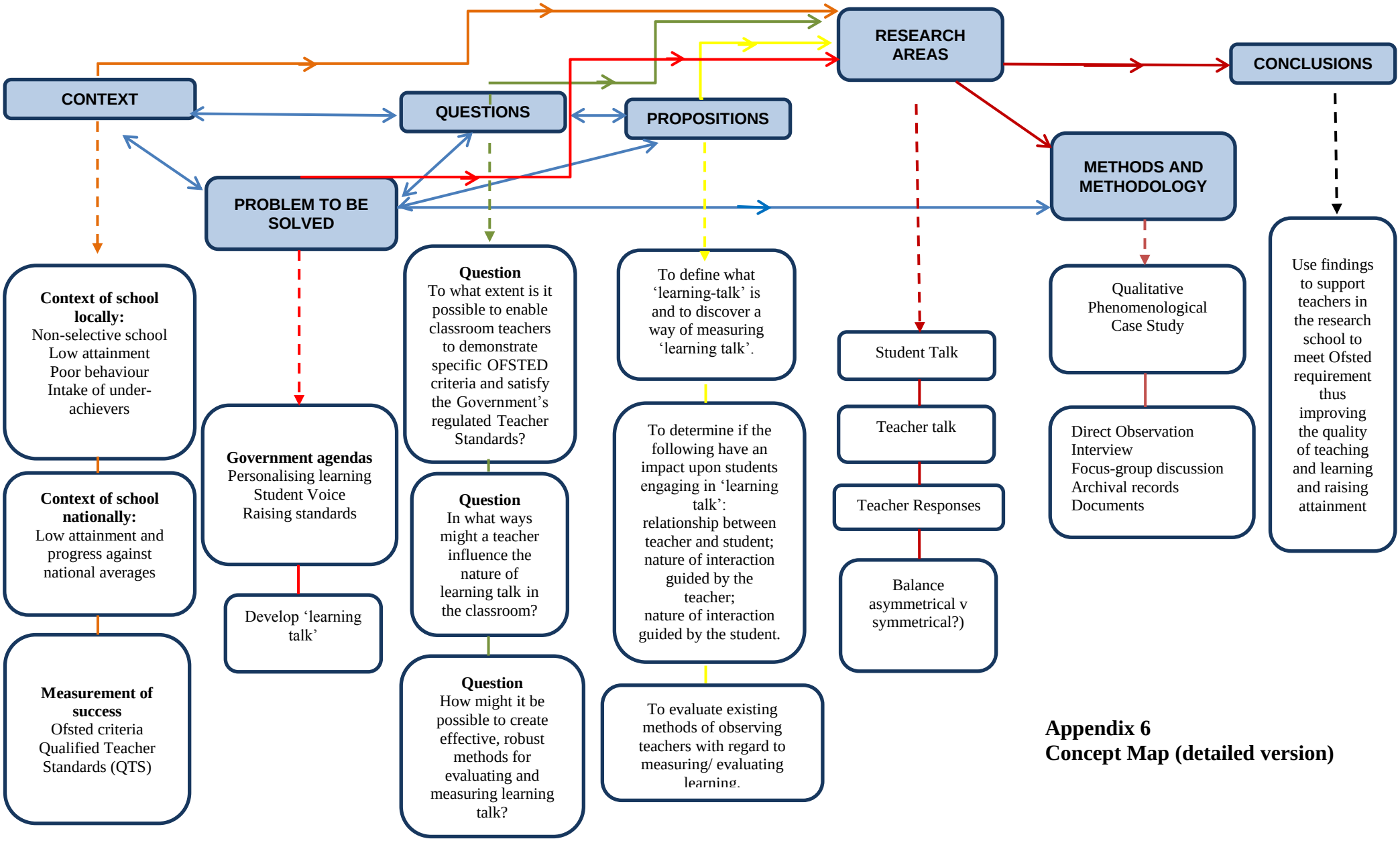
There is a **grade for the overall quality of a lesson**. This overall judgement will depend principally on the quality of teaching as demonstrated by the outcomes for the learners in terms of their progress and personal development (including their attitudes and behaviour) and the safeguarding of their health and safety. Inspectors should ensure they have observed enough of the lesson to complete this grade securely. The attached grade descriptions offer guidance on how to make this judgement. This box will not normally be completed for brief and tightly focused visits to lessons.

Grade descriptors: Achievement of pupils at the school

Outstanding (1) Almost all pupils, including where applicable, disabled pupils and those with special educational needs, are making rapid and sustained progress in most subjects over time given their starting points. They learn exceptionally well and as a result acquire knowledge quickly and in depth and are developing their understanding rapidly in a wide range of different subjects across the curriculum, including those in the sixth form and areas of learning in the Early Years Foundation Stage. They develop and apply a wide range of skills to great effect, including reading, writing, communication and mathematical skills across the curriculum that will ensure they are exceptionally well prepared for the next stage in their education, training or employment. The standards of attainment of almost all groups of pupils are likely to be at least in line with national averages for all pupils with many above average. In exceptional circumstances where standards of attainment, including attainment in reading in primary schools, of any group of pupils are below those of all pupils nationally, the gap is closing dramatically over a period of time as shown by a wide range of attainment indicators.
Good (2) Pupils are making better progress than all pupils nationally given their starting points. Groups of pupils, including disabled pupils and those with special educational needs, are also making better progress than similar groups of pupils nationally. Performance will exceed floor standards. Pupils acquire knowledge

quickly and are secure in their understanding in different subjects. They develop and apply a range of skills well, including reading, writing, communication and mathematical skills, across the curriculum that will ensure they are well prepared for the next stage in their education, training or employment. The standards of attainment of the large majority of groups of pupils are likely to be at least in line with national averages for all pupils. Where standards of any group of pupils are below those of all pupils nationally, the gaps are closing. In exceptional circumstances, where attainment, including attainment in reading in primary schools, is low overall, it is improving at a faster rate than nationally over a sustained period.
Satisfactory (3) Pupils are progressing at least as well as all pupils nationally given their starting points. Groups of pupils, including disabled pupils and those who have special educational needs, are also making progress in line with similar groups of pupils nationally. Performance is usually at least in line with floor standards. Pupils generally learn well in most subjects, with no major weaknesses. As a result, they are acquiring the knowledge, understanding and skills, including those in reading, writing, communication and mathematics, to ensure that they are prepared adequately for the next stage in their education, training or employment. The standards of attainment of the majority of groups of pupils are likely to be in line with national averages for all pupils. Where standards of groups of pupils are below those of all pupils nationally, the gaps are closing overall. In exceptional circumstances, where attainment, including attainment in reading in primary schools, is low overall, it is improving over a sustained period.
Inadequate (4) • Achievement is likely to be inadequate if any of the following apply. • Pupils' learning and progress overall, or the learning and progress of particular groups, is consistently below those of all pupils nationally given their starting point. • Learning and progress in any key subject2 or key stage, including the sixth form, lead to underachievement. • The learning, quality of work and progress of disabled pupils and those who have special educational needs show that this group is underachieving.

- Pupils' communication skills, including in reading and writing and proficiency in mathematics overall, or those of particular groups, are not sufficient for the next stage of education or training.
- Attainment is consistently low, showing little, fragile or inconsistent improvement, or is in decline.
- There are wide gaps in attainment and in learning and progress between different groups of pupils and of all pupils nationally that are showing little sign of closing or are widening.
- There are wide gaps in attainment and in learning and progress between different groups of pupils that are barely closing or are widening.



Appendix 6
Concept Map (detailed version)

Appendix 7 – Participant Information and Consent Forms

ALL FORMS WERE PRINTED ON ANGLIA RUSKIN UNIVERSITY HEADED NOTEPAPER WITH FULL CONTACT DETAILS

PARTICIPANT INFORMATION SHEET - Students

Section A: The Research Project

Title of project: An investigation into enhancing a shared language of learning between teachers and students: strategies for developing Student Voice in Key Stage 3.

Researcher: Mrs. Williams.

Purpose and value of study: The aim of this study is to investigate how to develop a language of learning between students and teachers in the classroom. The intention is that students will be able to take a greater responsibility for their own learning.

Invitation to participate: Mrs Williams is doing some research which she would like you to take part in. A group of about 15 teachers and 100 students are also taking part. The research will be carried out over a period of 1-2 years. If you agree to take part, you will be involved in the following ways:

- Mrs Williams will talk to you with a group of other students and ask you questions about your learning. These conversations will be recorded because she will have to write about them afterwards. But no-one else will be able to listen to the recordings and your names will not be used anywhere in the writing. These discussion groups will meet several times.

- She will watch some of your lessons and sometimes video them. Once she has watched the video and taken some notes, the video will be destroyed. No-one else will be able to watch it.

- You can refuse to take part at any time, although it is better to make the decision whether or not you want to take part, at the beginning. If you decide you don't want to be involved, at any time, let Mrs Williams know and she will ask you to sign a form. You don't have to give a reason.

What will happen to the results of the study: The results will be published for others to read, but the names of those who take part will be kept anonymous.

There is no outside funding for the research.

For further information please contact

Mrs Williams at [redacted]

Section B: Your Participation in the Research Project

Why you have been invited to take part. It is important to have a random selection of staff and students from the school. One or more of your teachers may also be taking part.

Whether you have to take part. You may refuse to take part in this research. You can also withdraw at any time by completing the attached form and returning it to Mrs Williams. No reason is required.

What will happen if you agree to take part and what will happen to any information / data that is collected.

- Interviews and discussions will be recorded. Mrs Williams will analyse these at a later stage. No names will be used – your involvement will be kept anonymous.
- The lessons may be videoed. Only Mrs Williams will be able to watch these, and as soon as she has collected data they will be destroyed. These videos will not be used for any other purpose.
- All recordings and videos will be kept safely until they are destroyed.
- The completed work will be available for anyone to read, including teachers, parents and the students who took part.

Whether there are any benefits from taking part. The main purpose of this research study is to help you to talk more about your own learning, and hopefully begin to learn more effectively.

How your participation in the project will be kept confidential.

All data will be kept anonymous.

Data and the writing of the thesis will be kept on a password protected computer.

Any mention of staff or students will be deleted at source and will not appear in the final document.

Any ideas, thoughts and feelings which are spoken about in the interviews and discussions will remain confidential, and will not be repeated to other staff or students at the school or in any manner which is not part of the research.

Every means will be taken to try to ensure that other participants also respect this confidentiality.

Note to Parents - there are no known risks involved from taking part in this study. Agreement to participate in this research should not compromise your legal rights, nor have any impact on your child's study at the school.

YOU WILL BE GIVEN A COPY OF THIS TO KEEP,

TOGETHER WITH A COPY OF YOUR CONSENT FORM

PARTICIPANT INFORMATION SHEET - Staff

Section A: The Research Project

Title of project: An investigation into enhancing a shared language of learning between teachers and students: strategies for developing Student Voice in Key Stage 3.

Researcher: Sharon Williams.

Purpose and value of study: The aim of this study is to investigate how to develop a language of learning between students and teachers in the classroom thereby empowering students to take a greater responsibility for their own development

Invitation to participate: I would like to invite you to be a part of this research. A sample of both staff and students will be involved. The research will be conducted over a period of 1-2 years by Mrs Sharon Williams (Assistant Headteacher). Your contribution will be in the form of interviews, focus group discussions and some observations of your lessons. All of these will be negotiated as regards when and where these will take place. You can refuse to take part at any time. It is estimated there will be approximately 8 hours of discussion and a maximum of 8 observations over the whole research period.

What will happen to the results of the study: The results of the study will form part of a PhD which will be available for public consumption on completion of the study. The work may also form part of a publication or be published in its entirety. All participants will be kept anonymous.

There is no outside funding for the research.

For further information please contact

Sharon Williams at [redacted]

Section B: Your Participation in the Research Project

Why you have been invited to take part. It is important for this research that the sample of staff and students is randomly selected and represents a cross section of the whole school.

Whether you can refuse to take part. You may refuse to take part in this research. You can also withdraw at any time by completing the attached form and returning it to Sharon Williams. No reason is required.

What will happen if you agree to take part and what will happen to any information / data that is collected. Interviews and focus group discussions form the main part of the data gathering. These will be recorded and transcribed for purposes of later analysis. Participants will be kept anonymous. Lessons may be videoed for ease of analysis. Once the data has been collected these videos will be destroyed. All data will be kept securely and will be destroyed at the end of the research period. The thesis will be available for the public to read, and this includes staff at the school. (It will be available from Anglia Ruskin University and on request from Sharon Williams.) However, all participants will be kept anonymous. You will be able to read the written transcripts and research findings when completed. Observations of lessons will be for the purposes of data gathering only. There will be no judgements made on the lesson delivery. Lesson sections may be videoed with prior permission from the participants. This video will be used to aid memory but will be destroyed at the end of the research period and will not be available for anyone else to see. The videos will not be used for any other purpose.

There are no known risks involved from taking part in this study. Agreement to participate in this research should not compromise your legal rights, nor have any impact on your work at the school.

Whether there are any benefits from taking part. Being involved in research of this nature should be beneficial to your professional and personal development. Involvement in discussions and contributing to the development of the project within the school can only help you to reflect on your practice and are intended to be a positive contribution to changes for the future.

How your participation in the project will be kept confidential. All data will be kept anonymous. Data and the writing of the thesis will be kept on a password protected computer. Any reference to named staff or students will be deleted at source and will not appear in the final document. Any ideas, thoughts and feelings which are spoken about in the interviews and discussions will remain confidential, and will not be repeated to other staff or students at the school or in any manner which is not pertinent to the research. Every means will be taken to try to ensure that other participants also respect this confidentiality.

YOU WILL BE GIVEN A COPY OF THIS TO KEEP,

TOGETHER WITH A COPY OF YOUR CONSENT FORM

PARTICIPANT CONSENT FORM

NAME OF PARTICIPANT: ……

Name of Parent or Guardian …….

(if participant is under 16 years old)

Title of the project: An investigation into how to enhance interactions between the teacher and the student about learning: strategies for developing student voice – a shared language.

Main investigator and contact details: Sharon Williams

[redacted]

1. I agree to take part in the above research. I have read the Participant Information Sheet which is attached to this form. I understand what my role will be in this research, and all my questions have been answered to my satisfaction.
2. I understand that I am free to withdraw from the research at any time, for any reason and without prejudice.
3. I have been informed that the confidentiality of the information I provide will be safeguarded.
4. I am free to ask any questions at any time before and during the study.
5. I have been provided with a copy of this form and the Participant Information Sheet.

Data Protection: I agree to the University[1] processing personal data which I have supplied. I agree to the processing of such data for any purposes connected with the Research Project as outlined to me

Name of participant (print)…….Signed……..….Date……

Name of parent / guardian ……Signed…… Date……
(only for participants under 16 years old)

Name of witness (print)……..Signed……..….Date……

YOU WILL BE GIVEN A COPY OF THIS FORM TO KEEP

If you wish to withdraw from the research, please complete the form below and return to the main investigator named above.

Title of Project: An investigation into how to enhance interactions between the teacher and the student about learning: strategies for developing student voice – a shared language.

I WISH TO WITHDRAW FROM THIS STUDY

Signed: _____ Date: _____

[1] "The University" includes Anglia Ruskin University and its partner colleges

Appendix 8 - Variables chart (teachers' group)

Variables	Experimental (Causes/ Predictors)	Dependent (Impact of causes)	Controlled	Uncontrolled
Age				
Experience – how many years' service	✓		✓	
Experience – role in school hierarchy			✓	
Country of birth			✓	
Country of birth – possible language barriers	✓			
Country of birth – Overseas Trained	✓			
Country of birth – cultural impact on student/teacher relationship	✓			
Gender – possible impact on relationship / interaction			✓	
Attitude to professional development	✓			
Attitude to student voice	✓			
Knowledge of educational initiatives – understanding of impact of student voice nationally			✓	
Effect of students behaviour in cohort	✓	✓		
Student/teacher relationship	✓	✓		
Own school background – e.g. grammar / comprehensive school	✓			
Own school background – experience of student voice in their experience as a pupil	✓			
Subject – practical for example	✓		✓	
Subject – current delivery methods – impact on interactions	✓			
Part of the existing AfL study and intervention programme in school			✓	
Are they a form tutor? (Currently taking part in academic mentoring)	✓		✓	

Appendix 9 - Personalised Leaning in Practice - EDISON
Statements categorised by the Teaching for Learning Group

From Personalised Learning in Practice (PLiP) run by Edison Schools

Learning Skills

I am able to understand what I need to do to produce a good piece of work

I am supported to do my best in the school

I am able to take responsibility for my own learning

I am able to concentrate in lessons

I can learn from my mistakes

I feel capable

I can accept feedback on what I have not done well and can act on it

In the lesson, I am able to concentrate on a piece of work for a sustained period that allows me to complete a task

I am able to express my opinions in class

I feel relaxed and confident in lessons

I understand how I am doing and what I need to do to improve

I can use my preferred learning style to help me progress

I am able to learn independently

I feel valued and respected as an individual

I am able to ask questions to help me understand better

Learning Opportunities

Teachers are approachable, show they respect and like students and want to help them learn

Activities are designed to make learning fun and motivate/engage students

Students are made to feel capable and confident

Mistakes are OK and help everyone to learn from them

Students are helped to know not only what to improve, but how to improve

Students who do not progress as expected are noticed quickly and given support to improve

Students have regular and meaningful written and verbal feedback

Teachers know the strengths and interests of students and build on them

Students have the opportunity to work in (and extend) their preferred learning styles

Students are rewarded for good behaviour and work

Opportunity is given to work individually, in pairs and in groups

Students are given the opportunity to understand the requirements for different levels / grades of work

Lessons have a good structure, with a clear introduction, a variety of activities and opportunity to demonstrate learning

Students have the opportunity to know how well they are doing and what they need to improve to do better

Teaching characteristics to influence student learning

Teachers treat all pupils with respect

Questions from students are welcomed and encouraged

Mistakes are dealt with positively and seen as learning opportunities

Students are given the success criteria for all work and have regular access to NC levels/GCSE grade/ GCE grade criteria

Students are taught how to use marking criteria to peer mark and peer marking is then encouraged to develop student understanding and skills

Teachers set clear and specific targets and make sure that students actually understand how they are meant to get better

Teachers give regular feedback, both verbal and written. Written work is marked promptly

Teachers really know their classes and take a real interest in students including their interests both in and out of school

Teachers reward good behaviour, success and/or effort in ways that are valued by the students

Students are shown and taught the skills required to work effectively in groups or pairs

Teachers know the preferred learning styles of the students they teach

Classwork / homework is differentiated for individuals / groups or students

Teachers plan and prepare all lessons informed by their knowledge of their groups' skills, learning styles and interests

Teachers involve students in lesson planning and target setting

Teachers involve students in deciding the criteria for assessment

Learning statements

I learn slowly when …

I am copying (no thought required)

I am distracted by movement or other people

It is too quiet

I am not allowed to talk to others

I have to concentrate for too long

I learn quickly when …

I have had good sleep and something to eat

I can get involved in the activity

I can get quiet thinking time to think of smart ideas

The learning is broken up into bits

There are examples and then activity

There are games or a fun element

Learning is easy /enjoyable when …

I can talk about work in groups

I can do role play / active work

The teacher is relaxed

The teacher is clear and specific

Things are well explained

There is some 1-1 explanation

There is space to work

There is some music in the background

Learning is hard when …

Someone just expects you to know it

There is too much teacher talk

The language is too complex

Explanation is too fast

There are lots of distractions

Work is boring, repetitive or just from books

Learning in groups is …

Good if there is more than one teacher to visit all the groups

Good as it is more understandable when you can get ideas from others

Good as it sinks in when you can discuss it with friends

Good if there are rules and the group sticks to them

Hard when people are of different abilities

Bad if people mess around

Learning from books is …

Really hard especially if there are no diagrams

Good for some subjects but they need to be relevant

Good if pictures help you to imagine it in real life

Good if there are examples to follow

Boring if that is all you do

I learn well from someone who …

Is a bit strict or pushes you in a good way but show they care about you as a person not just good marks

Understands what they are doing

Is easy going with a sense of humour

Is not patronising and has patience

Is enthusiastic and motivating

Does not make me feel stupid

Has control of the class but deals with relevant behaviour not every little thing

Appendix 10 - L2L Interview Questions and prompts

Classification questions

Are you currently a form tutor

Have you been involved in academic mentoring for Year 11 intervention

How long have you been teaching?

What is your job title?

Male / female

What type of school did you attend?

What subject do you teach?

How would you best describe your subject (practical…)

Teaching / delivery methods

Were you part of the Edison project?

The following questions are about learning to learn

What do you think are important characteristics of a good learner?

What do you understand by learning-independence in your classroom?

What do you think about focusing on learning rather than content in lessons?

What are the barriers to talking to students about learning?

What kind of learners do we want in an ideal school?

How can we measure independent learning?

Do we want more independent learners?

How can we determine the difference between deep and superficial learning?

How much teaching of learning goes on as opposed to content-based lessons?

The following questions are about interaction in the classroom

What have you noticed about the way students talk in your L2L lessons?

In what ways do you think L2L helps students achieve?

Which of the L2L skills do you feel are most transferable to other subjects?

Levels of interaction in your classroom

Content of interaction in your classroom about learning

Content of interaction in your classroom about progress

Who talks most in the classroom about learning – student or teacher?

Who asks the most questions in the classroom about learning – student or teacher?

The following questions are about teacher-student relationship

What have you noticed about the role of the teacher in your L2L classes?

How does the student-teacher relationship affect student learning?

What is a good relationship between student and teacher in the classroom – do you display these characteristics?

Power base/control/expertise?

Who should set the agenda?

Who are the experts?

The following questions are about student behaviours

What would you say are the student characteristics which have been most affected by the L2L process?

What would you say are the teacher characteristics which have been most affected by the L2L process?

Is there a link between behaviour and learning

Is there a link between knowledge of learning and progress?

Is there a link between talking about learning and student confidence?

Is there a link between talking about learning and student motivation?

Is there a link between confidence and motivation?

How do we measure confidence?

Is this important?

How do we measure motivation?

Is this important?

The following questions are about teacher roles and attitudes

Who/what has influenced your thoughts about student voice and L2L?

What role does the teacher play in encouraging SV in the classroom?

Received training in / attended courses / read about – SV/learning

Commitment to own professional learning

Commitment to student voice

Appendix 11 - Students' Focus-group discussion - topics

What is the job of the teacher?

What is the job of student?

Share with the group the different ways in which you learn?

Share with the group about active learning

Share with the group how you work with others in the classroom

Who's responsible for the learning in the classroom?

Appendix 12 - Questions for first focus-group discussion - Staff

What do you think are important characteristics of a good learner?

What do you understand by learning-independence in your classroom?

What are the different ways in which you talk about learning with your students?

How do students talk about learning in your classroom?

In what ways are students involved in establishing their own learning outcomes?

What do you think about focusing on learning rather than content in lessons?

How does the student-teacher relationship affect student learning?

How would you describe the balance of teacher/student input into the lesson?

Appendix 13 – Learning Plan and Observation Form
(as used in the research school following this research)

Learning Plan			
Teacher:	**Subject:**	**Date:**	**Period:**
Class:	**No. on Roll/No. present:**	**Boys:**	**Girls:**
Context and link with previous lesson ensure this is shared with students:			
Learning intentions: Learners will learn how to		**Success Criteria:** By the end of the lesson students will be able to	
Differentiation Strategies - for all sub-groups as applicable			
Key questions for the lesson (for higher order thinking) 1 2 *(Link to learning intentions and success criteria)*			
Starter TASK	Questions for checking facts		
	Questions for learning		
	Questions for sustained dialogue opportunities		
Main TASKS *State **CL** (collaborative learning opportunities) or **IL** (independent learning opportunities)*			
Plenary TASK	Questions for checking facts		
	Questions for learning		
	Questions for sustained dialogue opportunities		

Lesson Observation Form					
Teacher:	**Subject:**	**Date:**	**Period:**		
Class:	**No. on Roll/No. present:**	**Boys:**	**Girls:**		

These elements were planned for:	✓	**These elements were delivered:**	✓
Learning intentions were planned for		**Learning intentions** were shared with students through discussion	
Questioning was planned for; key questions were designed to challenge all students		**Questioning** enabled higher order thinking and extended learning	

Questioning was for checking facts		**Questioning** was for deepening learning		**Questioning** enabled students to engage in sustained conversations with teacher or in groups	

These elements were planned for:	✓	**These elements were delivered:**	✓
Group/paired **collaborative tasks** planned for		**Collaborative learning** enabled students to engage in learning conversations and showed student progress	
Students were given opportunities to **ask questions**		**Students asked questions** to develop learning	
Students given opportunities for **independent learning**		Students engaged in **independent learning**	

Students made **progress** from the start of the lesson		Students made **progress** from part-way through the lesson		Students made **progress** at the end of the lesson	
Students made little or no **progress**		**Comments:**			

Teacher strengths
Areas for development

Appendix 14 – Student Group: What teachers do to help us learn
Williams, S., (Research school, 2012)

STUDENT GROUP - What teachers do that help us learn [actual students' words]						
	Year 7	**Year 8**	**Year 9**	**Year 10**	**Year 11**	**Post 16**
What do these look like in lessons?						
Good learning opportunities	Engages you. More what you do not what the teacher does. Facts, timetables, rhymes. Games, questions, whiteboard, explanation - the teacher telling you what they mean; letting you work things out; group work, building on each-others ideas.	A chance to push yourself and take in certain information. More what you do than the teacher.	Make you work it out. Taking risks. Interactions (whiteboard, etc.) More what you do. Group work.	When a teacher corrects you after you've said the wrong answer. Also, after school one-to-one opportunities	Work in groups. Quizzes. Practical. Improvements given.	Working in a group. Independent learning. Discussions. Debates

Independent learning/thinking opportunities	Being able to think for yourself	A chance to work and learn very well. Finding out by yourself and using your ability to do this	Working on your own researching. Discussions.	Teacher explains work well and then lets students be independent.	Research. Ask questions. Personalised learning. Every subjects allow us to ask and respond to questions	Research tasks. Homework.
Sharing lesson intentions	Knowing what you are intended to achieve in the lesson. Going back to it. Explanations. Questions. Progress checker.	Sharing your own view of what you do in lessons. Going back to the learning intentions at the end of the lesson.	Picking out key words. Personalised learning. Checking that you've learnt something. Discussing the aims. Going back to the learning intentions.	Going back to a previously misunderstood lesson intention and concluding what you've learnt around it.		What do we personally want to achieve. Grading criteria. Mark boundaries.
Knowing and understanding what to do to improve	Stickers. School marking policy. Giving targets. Telling you how to improve. Asking you how you think you can improve.	School marking policy, success criteria, comments, stickers, progress tracker.	School marking policy. Grade boundaries. Comments. Assessment work, success criteria. Stickers. Weekly improvements.	By using my target grade to see what I personally need to look over	School marking policy. Comments. Grade boundaries. Stickers	Grading criteria. Mark boundaries. Letting the student set their own learning intentions and check

						progress. Peer assessment.
Active learning	Group work - fun. Discussion. Doing things. Role play. Experiments. Models/examples	Group work, role play, practical work, models, examples	Like in Art. Interactions with others (e.g. role plays) Practical work. Odd (unusual and interesting) experiences	Being interactive. Also, experimenting (like in science).	Group working - practical. Preferably moving around activities	Discussions. Debates. Visual learning.
Group and pair work	Discussion. Interact. Active.	Group work, role play, practical work, models, and examples. Do more practical, creative and interactive work so you can help each other. English is a	Using interaction in Drama and taking it to other subjects	Linked with active learning, group and pair work allows you to get more ideas for a balanced unbiased answer	Discussions	Class debates. Interactive lessons. Sometimes the best lessons are when we work as individuals but as a whole

		good subject to work together and move learning forward.				class as well.
Best learning environments	Open space - Break-out spaces - less cramped. Learn better with other people. Discussion environments. Controlled areas.	Break-out space, outside learning, controlled areas, 'discussion' environment.	A change of space (every now and then) Not just focused on controlling students' behaviour. Open spaces. 'Break out' spaces. Not always silent. Controlled	Learning better with other people in open 'break-out' spaces	Bigger spaces. When behaviour is good. Good seating arrangements.	Professional. Controlled. Friendly. Everyone treated as equals