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The Implementation of Cooperative Learning: a case study of cooperative learning in a networked learning community

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Wendy Jolliffe, BA, PGCE, MEd

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Introduction: Implementing Cooperative Learning in a Networked Learning Community

This thesis presents a case study of the implementation of cooperative learning in a networked learning community of two secondary schools and eight primary schools in the north of England. How this came about in a context of national educational prescription, in which cooperative learning has played little part, has driven this research. Before examining this further, however, it is important to clarify what is meant by cooperative learning. Based on this, the rationale for the research will be presented, together with the research questions. The chapter will conclude with an overview of the structure of the thesis.

What is cooperative learning?

Cooperative learning (CL) involves pupils working together in small groups to accomplish shared goals. It has strong links to the work of John Dewey (1859-1952), the psychologist, philosopher and educator, whose forward- thinking ideas had a profound influence on education. In 1897 he wrote:

'I believe that the only true education comes through the stimulation of the child's powers by the demands of the social situations in which he finds himself. Through these demands he is stimulated to act as a member of a unity, to emerge from his original narrowness of action and feeling, and to conceive of himself from the standpoint of the welfare of the group to which he belongs.' (Dewey, 1897: 77)

However, cooperative group work of this kind is not a common occurrence in UK classrooms. Baines, *et al*, (2008) found that whilst children are frequently seated in some form of grouping, it does not mean that they are working

cooperatively. Indeed, they state: 'many of these groupings actually inhibit learning and the motivation to learn' (ibid 2008:56). Key factors need to be in place for cooperative learning to take place. These are firstly interdependence, where members of the group perceive that they cannot succeed in a task unless everyone succeeds, and that every member has a vital role to play. The second key ingredient consists of ensuring the necessary conditions for cooperative learning to thrive. This is termed as *promotive interaction*, which occurs when individuals encourage each other to achieve group goals underpinned by interpersonal and small group skills. Chapter 1 provides further discussion of these factors; however, it is important from the outset to clarify what constitutes CL. To summarise, therefore, for the purposes of this research, the definition of CL which will be used in this thesis is:

Pupils working together in small groups on a joint task which ensures interdependence and promotive interaction, underpinned by the prerequisite small group and social skills.

Rationale for research

Cooperative learning (CL) has been described as one of the 'greatest educational innovations of recent times' (Slavin, 1999, cited in Gillies et al, 2008:1). Extensive research documents its benefits in improved academic achievement (Johnson and Johnson, 1994, Slavin, 1989, Sharan, 1980), enhanced inter-personal relationships (Johnson and Johnson, 1983, Blatchford et al, 2005,) and heightened self-esteem and social competencies (Jordan and Metais, 1997, Gillies, 2003). With such research findings, it is striking that CL is not more commonly used. More recently research has looked at factors in

implementing CL (Gillies, 2007, Gillies *et al*, 2008, Blatchford *et al*, 2005) in order to support its more widespread use.

In the UK, however, there has been limited interest in, or research into, CL. A review of research shows a short flurry of interest some twenty years ago and not taken up again until the only major research project in this country in 2003-05 (Blatchford *et al*, 2005). Cowie and Rudduck (1988) explored criteria for its success, while Dunne and Bennett (1990) affirmed the benefits, and Galton and Williamson (1992) provided guidance on developing a collaborative climate in the classroom. More recently, however, research into group work in the UK has begun to be addressed with a major research project in the UK entitled 'Social Pedagogic Research into Grouping' or 'SPRinG' (Blatchford *et al*, 2003). This set out to examine the gap between the potential of group work and its limited use in schools in the UK. The final report stated that they understood this to be the 'first study of group-work in the UK to show positive achievement gains in comparison to other forms of classroom pedagogy' (Blatchford *et al*, 2005: 33). The report stated that:

'It seems to us, therefore, that we need to rethink current pedagogical theories, both formal and informal, which seem to favour teacher led situations and individual work. It is hoped that this project is helping to put group-work on the educational map. We hope that this is the beginning of more systematic use of group-work; it deserves to be given a much more central role in educational policy and school practice.' (Blatchford et al 2005: 34)

One of the main reasons for the lack of group work in the UK cited by the SPRinG project (op cit) is a lack of research in 'authentic' settings which provided limited practical advice for teachers to use and adapt group work to

their particular contexts. The SPRinG research showed that when this was provided, teachers were able to put group work into practice more effectively. Other than this major study into group work and some research into peer learning (Topping, 2005), there appeared to be a clear need to examine the use of CL in the UK and what had led to its development in this case study.

Aims of this research

The research presented in this thesis into the use of CL in a networked learning community of schools in the north of England, where CL had become common practice, aims to review significant factors in its implementation. Previous research (Jolliffe and Hutchinson, 2007) documented the widespread use of CL, but the key question remained: how had this happened, particularly in a climate of little interest in CL?

This research will therefore focus on *how* CL has been successfully implemented. It will not seek to review the impact of CL, which has been well documented in the literature; in particular the benefits from this approach of enhanced interpersonal and social skills. Johnson and Johnson (1983, 1997), Jordan and Metais (1997) and Gillies (2003) have provided clear evidence of this, as discussed in Chapter 2. Nevertheless, whilst reviewing the implementation of CL in this case study, benefits in its use may well be illuminated.

A review of the research literature of studies into implementing CL reveals common themes that support its use. Therefore, one aspect of the empirical research will seek to confirm whether these themes apply in this case study. It is hoped that this will provide further insights into how CL can be successfully developed in schools.

Research questions

The principal research question is thus:

What key factors have contributed to the implementation of cooperative learning in the Bransholme Networked Learning Community?

Subsidiary research questions revolved around two aspects, how teachers and pupils had been supported in implementing CL, and the role of the network in supporting its use. One of the prime originators of CL, Spencer Kagan (1994), noted that success in using CL requires teachers and pupils to not only develop the necessary skills, but also to have the will to do so. Thus the following research questions were developed:

- what are the attitudes of staff and pupils to the use of cooperative learning in promoting effective teaching and learning?
- what types of support have enabled CL to be used?

In relation to the network, it was necessary to find out how significant this was in supporting schools in implementing CL. This is particularly relevant in a national educational context of heavy prescription, in which CL does not feature. An understanding of the role of the network in 'bucking the trend' therefore, has significance in any wider application of these findings. Therefore, the following research questions in respect of the network were developed:

- what is the nature of the network and how has it evolved?
- what are the views of staff on the power of the network to offset outside pressures and focus on self-determined initiatives?

Structure of the thesis

Chapter 1 begins with reviewing the term 'cooperative learning' and presents a rationale for the definition (as set out on page 5) for the purposes of this thesis. The chapter goes on to examine in detail the theoretical roots of CL, which can be grouped into four main perspectives: social interdependence, cognitive developmental, behavioural-social, and sociological (related to justice and inclusion). These roots have had a considerable impact on the types of CL that have evolved, as the chapter discusses. Extensive studies into the relationship between theory, research and practice, make CL '*somewhat unique*' (Johnson and Johnson, 2008:10). This is because the connection between the theoretical basis for a particular educational approach is emphasised, and as Johnson and Johnson also stress, if teachers do not have a firm understanding of this, they will be unlikely to succeed.

A synthesis of the extensive research that exists into CL is the subject of chapter 2. This includes discussion of its evolution over four decades and the diverse formats that have resulted, together with their benefits. Comparative research into the types of CL dominates a large element of the literature, with a later emphasis on the impact of different cultural contexts. From such an extensive literature, specific themes emerge which have a direct bearing on

implementation. These relate to the structuring of the cooperative group work; the development of talk for learning; the specific teaching of teamwork skills; the role of the teacher; the use of rewards for group work; its use with different ages; and assessment of group work. The chapter concludes with a review of research into implementation of CL and examines the level of support required in order to ensure it is effectively developed. The common themes that emerged from this review of the literature into CL, thus present a clear starting point for examining the development of CL in the context of this case study. These themes form a key part of the questions for interviews with key stakeholders.

The national context in England is the subject of Chapter 3: a context of significant educational change, notably from the 1988 Education Reform Act, which has been described by Osborn *et al* (2000: 3) as *'the most radical education legislation in half a century, and a decade of unremitting change followed it.'* Using the triple lens of curriculum, assessment and pedagogy, as defined by Bernstein (1990, 1996), this chapter will examine the impact of government policy and how a continued drive for greater centralised prescription has provided little scope for schools to innovate with different pedagogical approaches. This context is an important factor in this case study, in which a network has 'bucked the trend' and implemented CL: a very different approach to national educational policy. Thus one part of the research looks at the role of the network in offsetting outside pressures and focusing on self-determined initiatives and key stakeholders' views will therefore be sought on the influence of the network.

Chapter 4 examines the local context for the research. It reviews key features of the area and examines whether specific local and cultural factors played a role in developing CL. In particular, it looks at the impact of the government-funded initiative: Networked Learning Communities, and at one network in particular, the focus of this study. As the National College for School Leadership (NCSL), (2007: 5) state, networked learning demonstrates 'through their work, these groups of schools demonstrated the massive potential benefits that can come from working together'. The impact of the network itself, in its stated aim of embedding cooperative learning in the schools forms a key part of this research. This chapter also reviews previously published research data to show that CL had become widely used (Jolliffe and Hutchinson, 2007).

A rationale for the research methodology selected is presented in chapter 5. It sets out the philosophical standpoint for this research, based on an examination of differing paradigms, and proposes the use of *complexity theory*. This highlights the need for phenomena to be viewed holistically, together with the dynamic interaction of different aspects. The chapter sets out the focus and purpose of the research and the rationale for the research questions. Chapter 5 also discusses the constraints of the study and specific ethical considerations. A research procedure and timetable is set out to provide data related to two specific aspects: firstly to verify key findings from the literature review and secondly to provide a detailed exploration of the 'case' to ascertain whether '*fuzzy generalisations*' (Bassey, 1999: 44) can be made. A critical review of

tools for analysis of findings, including the use of analytical and grounded theory, is also provided here.

Chapter 6 presents the first part of the research findings which focus on key factors in implementing CL, comparing them with emerging themes from the literature. Chapter 7 presents findings in relation to the impact of the network in implementing CL. Both these chapters provide analysis in two forms: analytical and grounded theory. Analytical analysis helps to test out previous research findings into CL and into effective networks to ascertain any differences or similarities. Grounded theory, on the other hand, helps to find out whether unforeseen patterns emerge. The use of grounded theory also helps to avoid issues of forcing data to fit into a predetermined theory, and helps to avoid the possibilities of researcher bias, or expectancy effects. This is also useful in providing a rich description (Geertz, 1973) of the case study, supported by analysis of a range of qualitative and quantitative data, thereby providing a triangulation of findings.

Conclusion

This research presents a picture of implementing CL in a microcosm: a networked learning community, however it also aims to show that some '*fuzzy generalisations*' (Bassey, 1999:44) can be made. The benefits of CL are well documented and will be explored fully in Chapter 2, and thus this case study can provide a valuable example for other schools wishing to engage in it. It may also help sway government policy for as Blatchford *et al* (2005: 34), state:

'it deserves to be given a much more central role in educational policy and school practice.'

Research into implementation of CL by Gillies *et al* (2008) shows that it requires a commitment, together with the procedures to implement, monitor, and evaluate it. Implementing group work effectively is challenging as Cohen comments:

'Despite the well documented benefits of cooperative learning, implementing this pedagogical practice in classrooms, or indeed any of the structured peer-mediation programs, is a challenge that many teachers find difficult to accomplish' (Cohen, 1994, cited in Gillies, Ashwell & Terwel, 2008: 2).

Such challenges are, however, not insurmountable and, as this case study shows, CL can be implemented provided effective support mechanisms are in place.

One of the key factors in implementing CL, Johnson and Johnson (2008) stress is the need to ensure that teachers have a clear understanding of the research and theoretical perspectives behind this approach. The author's research (Jolliffe, 2006: 46) in contrasting different pedagogies for teaching literacy, found a key factor was the underpinning understanding that teachers had of specific teaching strategies, and that:

'an improvement in teaching and learning requires an explicit understanding of the underlying pedagogy, i.e. teachers need to know not only what to do, but why they do it.'

The underlying theoretical perspectives behind CL are the subject of the next chapter. This therefore forms the corner-stone upon which the thesis is built.

Chapter 1: Theoretical Underpinnings of Cooperative Learning

Cooperative learning (CL) has been described as one of the most widely investigated educational approaches (Slavin, 1996). Hundreds of studies have cited its benefits, and Johnson and Johnson (1989, 2000), Slavin (1990) and Sharan (1990) have produced extensive reviews of these. It has also spawned an international organisation to provide a forum for researchers: the International Association for the Study of Cooperation in Education (IASCE). With such an extensive pedigree of research, it is intriguing that CL is not more commonly used, as Nath and Ross comment (1996: 117):

'Surprisingly, although cooperative learning is believed to be the most effective among three primary styles of teaching and learning (individualistic, competitive, and cooperative), it remains the least used in classroom settings' (Johnson & Johnson, 1984, Sarason, 1995).

This chapter will begin with definitions and then examine the theoretical roots of CL. This will provide a firm basis for the next chapter, where a detailed metaanalysis of research findings into the use of CL and its implementation will be provided.

Definitions

There are many claims to pupils working together cooperatively. Indeed seating children in small groups is common practice in UK classrooms (Galton & Williamson, 1992), but this, of course, may not mean they are cooperating. Thus, it is important to be clear about the defining features of CL.

A first step is to review the underlying concept of cooperation. Davidson (1995:

197) argues that cooperation is a longstanding and essential concept in human

affairs. He defines it thus:

'Cooperation involves joint operation or action, and the term 'cooperation' also has social, economic and biological interpretations. For instance, the social meaning of cooperation is a combination of persons for purposes of production, purchase or distribution. The biological/ecological meaning of cooperation is the conscious or unconscious behaviour of organisms living together, which produces a result with survival value.'

This definition of cooperation reviews the underlying driving forces for humans to cooperate for social or economic advantages, or for survival purposes. It thus provides a rationale for a drive to cooperate.

Applied to the classroom, Cohen (1994a: 3) defined cooperative learning as:

'Students working together in a group small enough that everyone can participate on a collective task that has been clearly assigned. Moreover, students are expected to carry out their task without direct and immediate supervision of the teacher.'

This definition sets out three key components:

- 1. The size of the group: small enough to be conducive to everyone participating in a joint task.
- 2. The task should be carefully structured and jointly undertaken by members of the group.
- 3. The group should be able to work independently of the teacher.

A definition by Veenman, Kenter and Post, (2000: 281) states:

'CL refers to any of a variety of teaching methods in which pupils are placed in small groups to help one another learn academic content.'

This indicates that cooperative learning is a broad concept with a range of methods; the key factor being that pupils are placed in small groups and *help one another* with academic tasks.

Johnson and Johnson (1999a:5) state simply that 'cooperation is working together to accomplish shared goals'. The key aspects concern joint working with a shared purpose.

It is also important to clarify the distinction between cooperation and collaboration; terms which are often used interchangeably, but which have different meanings. Collaborative learning includes the notion of pupils working together on a shared project. However, what distinguishes cooperative learning is the element of interdependence that exists in the group. Indeed, there seems to be common agreement from the major instigators of, and researchers into, cooperative learning (e.g. Johnson and Johnson, Slavin, Kagan, Cohen, and Sharan) that for learning to be cooperative it must include certain elements. The crucial aspects that are needed for CL according to Johnson and Johnson (2000, 2005), Slavin (1995), Kagan (1994), Cohen (1994a), Sharan & Sharan (1992, 1994)) are:

interdependence (often termed 'positive interdependence'). This is
where group members perceive that they are linked with each other and
one cannot succeed unless everyone succeeds. Another aspect of
positive independence is individual accountability, where each member
of the group must be accountable for his or her share of the work.

 'promotive interaction' which provides the conditions for CL to thrive, and occurs when individuals encourage each other to achieve group goals. This in turn incorporates group and individual reflection where groups monitor and assess their functioning underpinned by the necessary social and small group skills. These skills need explicit teaching; for example, the skills of encouragement, management communication and conflict control.

From the foregoing, the definition of cooperative learning underpinning this research will therefore be: *pupils working together in small groups on a joint task which ensures interdependence and promotive interaction, underpinned by the pre-requisite small group and social skills.*

Theoretical Roots of Cooperative Learning

This section will review a range of theoretical bases on which cooperative learning is formed. These can be grouped into four main roots: the social interdependence perspective (Lewin, 1935, 1948, Deutsch, 1949a, 1962); the cognitive developmental perspective (Piaget, 1932, Vygotsky, 1978); the behavioural-social perspective (Bandura 1977, Skinner, 1974); and the sociological perspective of social justice and inclusion (Cohen, 1994a).

The influence of the educational philosopher John Dewey is pervasive, most notably in the social-interdependence perspective. For Dewey, learning encompassed not only intellectual acts, but also consisted of social and emotional considerations. School should resonate with children's experiences in everyday life and the goal should be to prepare children to become responsible citizens. Learning to be cooperative is a key part of that process.

In 1899, Dewey wrote what today seems a startlingly visionary statement:

'Almost the only measure for success (i.e. in school) is a competitive one, in the bad sense of that term - a comparison of results in the recitation or in the examination to see which child has succeeded in getting ahead of others in storing up, in accumulating, the maximum of information. So thoroughly is this the prevalent atmosphere that for one child to help another in his task has become a school crime. Where the school work consists in simply learning lessons, mutual assistance, instead of being the most natural form of cooperation and association, becomes a clandestine effort to relieve one's neighbour of his proper Where active work is going on, all this is changed. Helping duties. others, instead of being a form of charity which impoverishes the recipient, is simply an aid in setting free the powers and furthering the impulse of the one helped. A spirit of free communication, of interchange of ideas, suggestions, results, both successes and failures of previous experiences, becomes the dominating note of the recitation ... In an informal but all the more pervasive way, school life organizes itself on a social basis ...'

(cited in Archambault, 1964: 301-303)

Thus Dewey sought to make pupils members of a learning community in which knowledge is constructed collaboratively (Wells, Chang and Maher, 1990). The goal of education for Dewey, therefore, was to prepare pupils to live together in a democratic society. To do this, education should support pupils' sense of belonging to a social group, as opposed to what Sharan and Sharan (1992) describe as 'disconnected individualism through competition for artificially limited resources (e.g. to be the first one in the class, or the one with the highest grade' (1992: 5).

The social interdependence theory

The social interdependence perspective concerns the way in which social interdependence is structured, and this determines how individuals interact with each other. This theory began in the early 1900s with the Gestalt school of

psychology, further developed by Kurt Lewin (1935) who stated that the essence of group work was the interdependence amongst its members, created by common goals. This, he felt, results in the group being a 'dynamic whole'. One of Lewin's students, Morton Deutsch, further developed this theory and formulated the theory of cooperation and competition (1949a). This theory states that social interdependence exists when the individuals share common goals and each other's individual outcomes are affected by the actions of the others. This can be contrasted with social dependence in which the outcomes of one person's actions are affected by another person's actions. This in turn influenced the work of David and Roger Johnson's social interdependence theory developed in the 1970s, which states that positive interdependence results in positive interaction as individuals '*encourage and facilitate each other's to learn*' (Johnson & Johnson, 1999a: 187).

Johnson and Johnson have developed social interdependence theory into two types: positive (cooperation) and negative (competition). Positive cooperation exists when individuals understand that they can only achieve their goals if others reach theirs, i.e. they are inextricably linked. How self-interest is expanded to mutual interest is explained through certain psychological processes, including *substitutability* (i.e. the degree to which the actions of one person substitute for the actions of another), *inducibility* (e.g. openness to being influenced and to influencing others), and *positive cathexis* (i.e. investment of positive psychological energy in objects outside of oneself) (Deutsch, 1949a, 1962). To summarise then, social independence theory is demonstrated by the following characteristics:

- Other people's actions are substituted for one's own, so that an individual recognises that others' actions can be critical in achieving his/her own goals.
- There is an emotional investment in achieving goals that benefit others as well as oneself, which builds caring and committed relationships with those with shared purposes and goals.
- 3. There is openness to being influenced by and to influencing others, so that joint actions are more effective.

Social interdependence is at the heart of the work of Watkins (2005) in viewing classrooms as 'learning communities'. Watkins (2005:21) uses an ABCD model to describe such a community as a collective in which each member is an:

	Active participant
[has] a sense of	Belonging has developed
	Collaboration between members is frequent
and	Diversity of members is embraced

These key elements are also crucial to ensuring effective cooperative learning, as will be discussed in more depth in the next chapter. Community has diverse interpretations and, in order to understand the concept of learning communities, contrasting the two types of institutions described by the German sociologist and philosopher Ferdinand Tönnies (1887/1957) can be helpful:

Gesellschaft – an association of people that is based primarily on the members' rational pursuit of their own self-interests;

Gemeinschaft - an association of people that is based primarily on

shared purposed, personal loyalties and common sentiments.

Whereas gesellschaft sees achievement as the result of individual endeavour, gemeinschaft sees achievement as the result of cooperative endeavour and

embraces social and moral aspects of how people live and function together. Watkins (op cit) also used the metaphor of an orchestra or band to describe the concept of community, in which:

- people are brought together for a purpose
- relations between members are highlighted for the joint action that is to follow
- together they create something that is more than the sum of the parts, and develop real skill in combining individual and group performance.

The philosopher John Macmurray (1891-1976) explored in depth the concept of community. He differs from the view of community as a collective, brought together with a common purpose. For Macmurray, a true community is a fellowship in which individual diversity is embraced. He argued that people in dialogue make community. Martin Buber, a contemporary philosopher (1878-1965), largely shared Macmurray's stance and helpfully distinguished three forms of dialogue: genuine dialogue, technical dialogue, and *'monologue disguised as dialogue'* (Buber 2002: 22). To live in dialogue involves a sense of reciprocity. Buber's sense of community:

'was not the natural community of the family or the village commune ... [but] a community of choice around a common centre, the voluntary coming together of human beings in direct relationship' (Friedman 1999, p 406).

For Macmurray, community is 'a group which acts together; but unlike a mere society its members are in communion with one another; they constitute a fellowship' (1996:166). He also made a clear distinction between society and community; whilst society is an 'organisation of functions' (ibid) with each member being a 'function of the group', a community is a 'unity of persons as persons'. The structure of the community becomes the 'network' of the relationships between members. This is far from a functional sense of *community* in which members have a common aim or purpose. In Macmurray's sense of community, the relationships are key and the diversity that each individual brings; coming together with a common cause.

How then can this be applied to school and indeed the notion of cooperation? One might question whether by applying Macmurray's sense of community, schools can ever be communities. However, Macmurray is more optimistic and states that 'the school is a community and we learn to live in a community only by living in a community' (1968: 149-150). Schools also serve a valuable function as public organisations that 'mediate between the family and the larger world of adult life' (Macmurray 1968, p 35). In addition, the principal aim of education for Macmurray is to train children not to be mathematicians or accountants or linguists, instead teachers are 'training them to be men and women, to live human lives properly' (Macmurray, 1968:112). Such training would incorporate the ability to cooperate.

In contrast, for Lave and Wenger (1991) learning is participation and people join communities of practice as legitimate peripheral participants. Two concepts underpin this: first that learning is aided by joining and taking part in the work of a 'community'; and second that this process evolves from being at the periphery to being a fully-fledged member of such a 'community'. Is this, therefore, the heart of learning cooperatively? One key difference from Macmurray is that the

concept of diversity is subsumed into the idea of individuals being apprentices, learning to become practitioners. 'Legitimate peripheral participation' is seen as a process in which 'learners inevitably participate in communities of practitioners and the mastery of knowledge and skill requires newcomers to move towards full participation in the sociocultural practices of a community' (1991: 29). Lave and Wenger's (1991) theory of 'Situated Cognition' regards knowledge as 'situated, being part of a product of the activity, context, and culture in which it is developed and used' (Brown, et al, 1989:32). The importance of context and culture and the wide variations in applying any theory or practice is a core consideration which, in relation to cooperative learning, will be explored in depth in the next chapter.

Stern (2006) comments that '*Schools are complex learning communities, rich with meanings*' (2006:38), Such complex environments have at their core: dialogue, diversity and connection. Learning together cooperatively and being interdependent facilitates this dialogue.

The cognitive-developmental theory

A further key underlying perspective helps to illuminate the potential of CL. The cognitive-developmental perspective is largely based on the theories of Piaget and Vygotsky; the former a personal constructivist and the latter a social constructivist. The personal constructivist's perspective views interaction as stimulating cognitive conflict. It is a catalyst for change and challenges individuals to reconsider understandings and construct new ones. The aim of learning cooperatively for Piaget, therefore, is to accelerate an individual's

intellectual development by producing a consensus with other students. Vygotsky, and other related social constructivists, proposed that knowledge is socially constructed from cooperative efforts to learn. According to this perspective, more capable peers and adults scaffold or mediate the learning through the use of language and a range of supportive strategies. The zone of proximal development (ZPD) identifies the gap between what the learner can do alone and unaided, and what can be achieved with the help of more knowledgeable others. *'What a child can do today in co-operating, tomorrow he will be able to do on his own'* (Vygotsky, 1978: 86). This has also been described as a 'bandwidth of competence' (Brown and Reeve, 1987).

This latter perspective has had a profound impact on educationalists. Indeed, one teacher commented to the author that if Vygotsky had not existed, an educationalist would have had to invent him! Vygotsky's lasting legacy is to move conceptions of the learner from the 'lone scientist' to that of a 'social being'. Thus, as Bruner and Haste comment, we have seen that:

'A quiet revolution has taken place in developmental psychology in the last decade. It is not only that we have begun to think again of the child as a social being – one who plays and talks with others, learns through interactions with parents and teachers – but because we have come once more to appreciate that through social life, the child acquires a framework for integrating experience, and learning how to negotiate meaning in a manner congruent with the requirements of the culture. 'Making sense' is a social process: it is an activity that is always situated within a cultural and historical context.'

(Bruner and Haste, 1987:1)

Gillies (2003) describes the underlying learning theory that underpins CL, saying it is not only that of social constructivism, but also 'proleptic instruction' (Forman, 1989: 57). 'Proleptic instruction' requires listeners actively to construct

understanding for themselves from the helper's *implicit* instructional messages (Stone, 1985). Ellis and Rogoff (1986) argue that proleptic instruction may be the most common instructional format in cooperative learning because peers are likely to be less skilled than adults in direct instruction. Gillies and Ashman (1996) found that when children are trained to work together they provided more assistance to peers and developed an implicit understanding of each other's needs. This illustrates the potential of children actively co-constructing their learning. Learning is therefore supported through social interaction.

The behavioural-social theory

The behavioural-social perspective has a very different motivational force. It assumes that pupils will be motivated to work hard on tasks for which they receive a reward (Bandura, 1977; Skinner, 1974). The reward revolves around the success and approbation of their group. This differs from the classic behaviourist theory (Thorndike, 1913) which conceptualized learning as a process of forming connections between stimuli and responses. The motivation to learn is driven by external forces such as rewards and punishments (Thorndike, 1913, Skinner, 1974). Behavioural-social theory takes the ideas of rewards for successful actions, but instead of applying it to individuals, applies it to groups. Thus the individual contributes to the group's success and the reward may be the satisfaction gained from that contribution, as well as the group's approbation.

Slavin (1983a) has developed the idea of group rewards further with extrinsic rewards to successful groups through his method of Student Teams

Achievement Divisions (STAD). Introducing any extrinsic rewards is much disputed (Johnson and Johnson, 2003, Sharan and Sharan, 1992), mainly because of introducing an element of competition which is the antithesis of cooperation. In contrast, it is argued, intrinsic motivation has much more long lasting effects. Dewey (1924) identified the two principal features of intrinsic motivation as: (1) individuals view the goal or activity as their own, not imposed on them and they thus actively seek ways of reaching the goal or carrying out the activity; (2) when motivated by our own interests, we are engaged and on task and actively seek ways of completing it. The behavioural-social perspective, however, views extrinsic motivation as a fundamental aspect.

Social Justice and Inclusion

Another key theoretical root that underpins CL is that of social justice. Cohen's (1994a) work into complex instruction aims to redress the issues of status. She stated that unless teachers are careful to structure opportunities for equal status interactions in groups, the following tends to happen:

'Small task groups tend to develop hierarchies where some members are more active and influential than others. This is a **status ordering** – an agreed-upon social ranking where everyone feels it is better to have a high rank within the status order than a low rank. Group members who have high rank are seen as more competent and as having done more to guide and lead the group.' (Cohen, 1994a: 27)

In this situation, participation is very seldom equal. Teachers, therefore, firstly need to recognize status differences, and secondly, need to try to ameliorate such differences. Cohen (1994a) says the obvious way to do this is to create a situation in which a low-status pupil is able to be an expert. This can be done by finding a particular strength, or task, that a pupil is good at and then asking him/her to teach it to the others. Cohen emphasizes that every pupil is an

expert at something. Cohen calls this process 'Multiples Abilities Treatment', where the teacher tells the class '*None of us has all of these abilities. Each one of us has some of these abilities.*' (Cohen, 1994a: 122). To be effective, this approach requires careful planning of the task to provide opportunities for different pupils' strengths to be applied, as well as the careful preparation of the class to work in this way.

These key roots: social interdependence, cognitive-developmental, behavioural-social and social justice/inclusion have a profound impact on the various types of CL that have developed. These are discussed in detail in the next chapter. However, before looking at these, it is also important to look at another key element: learning itself.

The nature of learning

Whilst views on learning differ, as Watkins (2005) comments, similarity across classrooms remains:

'All across the world, in different cultures, a classroom and its dynamics are easily recognisable and markedly similar. The model which spread throughout the world during the twentieth century, and bears remarkable similarity with the earliest known classrooms of 5,000 years ago, is remarkably dominant and remarkably resilient.' (Watkins, 2005:8)

This prevalent model centres on the power relations of teacher and pupils. He cites two major reasons for this:

1. The characteristics of the classroom situation which Watkins describes as the 'most complex social situation on the face of the planet' (Watkins, 2005:9). This includes the multiple and simultaneous interactions; the public and highly visible nature of

these interactions; the varied backgrounds and experiences of pupils, and the unpredictable nature of events. With such a complex and dynamic context, the desire for the teacher to control is not surprising.

2. The power relations between teachers and pupils. Whilst the degree of teacher authority may vary, there are particular issues which stem from highly prescriptive curricula resulting in reduced teacher control, which can in turn result in reduced agency for pupils – *'when teachers are 'made responsible' for the performance of pupils they become more controlling'* (Watkins, 2005: 13).

Watkins adds a third reason for the status quo:

3. A dominant view of learning and learners. This Watkins (2005: 15) maintains links to 'a view of pedagogy which assumes that learners learn by being told'. It also relates to a belief that learners learn new knowledge in clear predicable steps and offers a specification of what is to be learned. In addition, says Watkins and 'equally questionable, it suggests standards for assessment' (2005:16). A range of issues derive from this view. First and most important, it omits the learner and the learner's needs from the picture; and secondly as a result, the learner is a passive recipient. Thirdly, it views teaching as transmission.

Watkins compares this dominant view of learning (i.e. learning means being taught) to two other conceptions, which have far-reaching implications for teaching, for the curriculum, and for assessment, as well as for leading learning. These are:

- 1. Learning as individual sense-making: this view is rooted in the constructivist approach which sees learning as constructing meaning based on previous knowledge and experiences, or schemas, followed by a process of modification and assimilation. The learner is seen in the Piagetian sense of a 'lone scientist' making sense of the world and thus the problem, as Watkins argues (2005: 16), is that this view may 'focus on the individual rather than the social processes the individual is engaged in: in that most complex social environment, the classroom.'
- 2. Learning as building knowledge through doing things with others, or co-construction. This, in contrast to the view of learning as an individual activity, acknowledges that all human behaviour has a social dimension and that knowledge is constructed socially. Inherent in this view is the acknowledgement of the importance of language and conversation in creating shared meaning. This in turn is dependent on creating the conditions whereby such shared meaning can be achieved: learning communities. Such communities have shared culture and focus; therefore the context in which the learning happens takes central importance. According to this concept of learning, a teacher becomes a facilitator of learning, helping to support the necessary conditions through peer collaboration and knowledge testing. As Watkins (2005: 17) summarises:

'the co-construction stance moves us from viewing learning as an acquisition, whatever the commodity to be acquired, to view learning as also becoming part of a community.'

This view of learning is at the heart of cooperative learning. It has led to revised theories of pedagogy (Blatchford *et al*, 2003), and is entitled a 'social pedagogy' which forms the final aspect in reviewing theoretical roots of CL.

Social Pedagogy

Blatchford *et al* (2003) cite the psychological tradition, from Baldwin (1897) through to Vygotsky (1978), which has emphasized the importance of interaction and led to '*an emphasis on the benefits of peer tutoring, collaborative and cooperative learning for cognitive development* (cf Damon & Phelps, 1989)', but cite another neglected theoretical tradition which '*seeks to interpret learning and development within ecologically meaningful environmental contexts, Bronfenbrenner (1979)*' (Blatchford *et al,* 2003: 159).

One development of this 'social pedagogy' can be seen in peer learning, which has been the subject of extensive research (e.g. Chi, *et al*, 2001, King, 1998). The underpinning theoretical basis for the success of peer learning has been synthesized into a single theoretical model with five categories (Topping and Ehly, 2001). These categories consist of:

- Organisation and engagement related to time on task and time engaged with task, interaction amongst peers including elaboration, setting goals and plans and the immediacy of feedback.
- Cognitive conflict this is related to the Piagetian theory of schema; assimilation; disequilibrium through new ideas or concepts and final equilibrium, as such concepts are accommodated. Such a process of achieving equilibrium can be enhanced by working alongside others,

according to the Vygotskian school of thought, associated with peer support and managing activities within the zone of proximal development.

- Scaffolding and error management related to modelling, competent performance and detecting and correcting misconceptions.
- 4. Communication peer learning involves significant demands on communication skills and, in the process, supports the development of these skills for the helper and the helped. As Topping (2005:637).states: 'A participant might never have truly grasped a concept until having to explain it to another'.
- Affect through the support of the helper the person being helped can improve self-confidence and motivation.

This model shows how this process is iterative and develops in cycles from surface learning to strategic and, finally, deep learning, supported by interaction between pupils. This interaction points to another key underlying aspect of CL: the role of talk for learning.

The Role of Talk for Learning

When reviewing the role of talk for learning, the recent history of the status of talk in English classrooms is illuminating. This helps explain the lack of use of cooperative learning, and as later discussed, a lack of clear pedagogy. The Bullock Report (DES, 1975) was devoted entirely to language and welcomed the growth in importance of oral language. It argued that schools should prioritise the speech needs of their pupils. The Oracy Project in the late 1980s (Norman, 1992) further built on this and involved over half of England's Local

Education Authorities, using case studies of classroom practice, usually written by teachers themselves. This showed the relevance of understanding the role of talk for learning in *all* curriculum subjects. This project particularly revealed how teachers and children alike undervalued the role of talk for learning at the time. As Mercer (1995:92) states:

'one of its main achievements was to raise teachers' awareness of the potential value of talk, and so improve the status of classroom talk amongst both teachers and pupils.'

This research was instrumental in speaking and listening becoming a separate

component in the English 5-11 National Curriculum:

'Our inclusion of speaking and listening as a separate profile component in our recommendation is a reflection of our conviction that these skills are of central importance to children's development.' (HMI,1989).

However, the importance of talk for learning took a major backwards step in

1998 with the introduction of the National Literacy Strategy, in which speaking

and listening was largely omitted from the wealth of teaching objectives. The

result of this, as Smith et al's research (2004: 408) showed, was that:

'In the whole class section of literacy and numeracy lessons, teachers spent the majority of their time either explaining or using highly structured question and answer sequences. Far from encouraging and extending pupil contributions to promote high levels of interaction and cognitive engagement, most of the questions asked were of a low cognitive level designed to funnel pupils' response towards a required answer.'

More recently the works of Neil Mercer (1995, 2000) and Robin Alexander (2000, 2004a) have raised the status of talk and shown, as the latter has argued, that:

'Reading, writing and number may be the acknowledged curriculum 'basics', but talk is arguable the true foundation of learning.' (Alexander, 2004a: 5)

A closer examination of why talk may be described as the 'true foundation of learning' is necessary. First, humans are social beings who gain much of what we know from others and, in turn, we need to communicate our ideas to others. In addition, the work of Vygotsky helps us understand not only the important role that others play in supporting our development within our zone of proximal development, but also that learning is a twofold process: '*every function in the child's cultural development appears twice: first on the social level and later on the individual level*' (1978:57). Therefore, the child encounters ideas first with others and then assimilates them within his/her own cognitive structures. As Corden (2000: 8) summarises:

'Vygotsky (1978:26) proposed that language and thought combine to create a cognitive tool for human development and that 'children solve practical tasks with the help of their speech as well as their eyes and hands'.

The work of Bruner (1986) also supports the importance of talk for learning, and it is through the process of talking through ideas that children are able to make sense of new concepts. Bruner's metaphor of *scaffolding*, which entails social frameworks to support children's learning and enables them to complete tasks that they would be unable to do alone, also revolves around talk, as it is highly interactive.

Alexander (2004a) provides seven arguments for talk having a central place in education:

- 1. Communicative: talk is humankind's principal means of communication.
- 2. Social: talk builds relationships, confidence and a sense of self.
- 3. Cultural: talk creates and sustains individual and collective identities.

- Neuro-scientific: language, and especially spoken language, builds connections in the brain; particularly during the early and pre-adolescent years.
- 5. Psychological: language and the development of thought are inseparable.
- 6. Political: democracies need citizens who can argue, reason, challenge and evaluate.
- Pedagogical: research shows that cognitively enriching talk engages pupils' attention and motivation, increases time on task and produces measurable learning gains.

Following Alexander's comparative research of primary education across five countries (2000), he developed the concept of *dialogic teaching* (2004b) to support the use of talk. This teaching approach aims to harness the power of talk to stimulate and extend pupils' thinking and understanding. *Dialogic teaching* has been trialled in schools in London and Yorkshire, and is becoming influential in other parts of Britain and with the national agencies, in particular the Qualifications and Curriculum Authority (QCA) and the Government's National Strategies.

One of Alexander's prime criticisms of educational policy in the UK concerns a 'lack of pedagogy' (2004a). He states that historically teachers '*tended to conceptualise, plan and justify their teaching by combining pragmatism with ideology but not much else*' (2004a:5). He believes that in spite of the growing influence of psychology, there was nothing approaching a coherent pedagogy in

the UK compared with elsewhere in Europe. Instead, the emphasis of curriculum in England has meant that pedagogy has been secondary to curriculum content. Alexander feels it should be the other way round:

'Pedagogy is the act of teaching together with its attendant discourse. It is what one needs to know, and the skills one needs to command, in order to make and justify the many different kinds of decisions of which teaching is constituted. Curriculum is just one of its domains, albeit a central one.' (2004a: 11).

He presents a clear rebuttal of current UK educational policy:

'Clearly, pedagogy is a somewhat more complex enterprise than may be recognised by those who reduce effective teaching to 'what works', or 'best practice' lessons downloaded from government websites.' (2004a: 13).

This presents an interesting political dimension to the development of the curriculum and whilst a wealth of research shows the importance of talk, government policy has not hitherto supported it effectively. The effects of the Rose Report (DfES, 2006a) on the teaching of early reading, however, and its clear recommendation to improve the teaching of speaking and listening, are clearly impacting in the classroom, as can be seen in the revised Framework for Teaching Literacy (DfES, 2006b). The Independent Review of the Primary Curriculum, Final Report (2009), headed by Sir Jim Rose, recognizes *the central importance of developing children's spoken communication* (DCSF, 2009: 56) and proposes to strengthen it across the newly proposed areas of learning for 2011.

Mercer, states that his research into the importance of talk for learning (2000; 2003) has impacted on educational policy in the UK. His studies in Britain and Mexico over a seven-year period looked at improving the quality of teacher-led

dialogue and peer group activity in primary schools. The results of this research

linked socio-cultural theory and educational practice:

'On the theoretical side, the research has provided new evidence in support of Vygotsky's claim about the influence of 'intermental' activity on 'intramental' development. Results from both countries indicate that, when language is shaped into a suitable cultural tool for the intellectual task in hand, discursive interaction not only enables collective thinking to become more effective but also promotes development of individual reasoning and the advancement of learning and understanding in curriculum subjects. (Mercer & Rojas-Drummond, 2003:110)

However, whilst a range of research has shown that talk aids the organisation of thought, a major implication for teachers is the structuring of a classroom environment which offers opportunities for interaction, and as Bennett (1994: 63) comments this requires organisation:

'This requires the translation of beliefs about pupils as 'social beings' into modes of classroom organisation which encourage talk and co-operative endeavours.'

Creating classroom organisation that supports effective talk, and enables pupils to work cooperatively in groups, will be explored in more depth in the next chapter.

Conclusion

This chapter has examined definitions and the theoretical roots of cooperative learning and, as the next chapter will show, these have had a significant impact on the types of CL that have evolved. CL, as has been discussed, requires far more than merely seating pupils together: it requires creating interdependence between members to complete a joint task. Such tasks need to be carefully designed by teachers, not only so that they demand a joint problem-solving approach, but also so that they are inclusive for all members and abilities of the
group. Such group activity is underpinned by ensuring pupils develop the skills to cooperate. It requires what Watkins calls a '*learning community*' (2005:21) in which pupils co-construct knowledge, provided the pre-requisite conditions are in place: real inclusion and genuine dialogue. In the next chapter, ways in which these roots have supported the development of cooperative learning will be examined, together with an analysis of wide-ranging research into its benefits and implementation.

Chapter 2: Review of Research into Cooperative Learning

This chapter presents a synthesis of the development and research into cooperative learning; a discussion of its diverse formats; the range of cultural contexts and, in particular, sets the scene in the UK. Discussion in the previous chapter has indicated that cooperative learning supports the co-construction of knowledge, provided the pre-requisite conditions are in place. This will be explored further and, in particular, issues concerning the effective implementation of CL will be analysed, in order to provide a platform for further research.

2.1 History of CL

The previous chapter has identified the theoretical roots of CL: socialinterdependence theory, cognitive-developmental theory, behavioural theory and the sociological perspective of social justice and inclusion.

How these roots have influenced the development of CL, is illustrated through a brief review of the historical development of CL. This can also support analysis of its features and distinctive types. The table below adapted from Schmuck and Schmuck (2001: 15) presents an overview of this development:

Historical Periods	Important Ideas	Key People		
1920-1945	Social improvement Democracy in education Learning by doing	John Dewey (1916) Kurt Lewin (1935, 1948)		
1945-1965	Group dynamics Action research Classroom group dynamics	Morton Deutsch (1949) Ronald Lippitt (1959)		
1965-1985	Civil rights Martin Luther King Equal educational opportunity	Charles Silberman (1970) James Coleman (1966)		
1985-2000	Effective schools Cooperative teaching and learning Cooperative schools	David and Roger Johnson (1989) Pat and Dick Schmuck (2001) Shlomo and Yael Sharan (1994) Elizabeth Cohen (1994) Robert Slavin, (1983) Spencer Kagan (1994)		
2000+	Group work and peer learning Teachers' pedagogical practice	Social Pedagogic Research into Grouping (Blatchford, <i>et al</i> , 2003) Topping, (2005) Gillies (2003, 2006), Gillies <i>et al</i> (2008)		

Table 2.1: Historical development of CL

An Overview of the Historical Development of CL

The development of CL can be traced from the work of Dewey (1916) as discussed in Chapter 1. He was concerned with developing socially responsible citizens who can work together to solve social problems. Building on this, Kurt Lewin's research (1935, 1948) helped to bring about a particular stream of social psychology: group dynamics. This focused on functions, operations and processes of small groups. In the post Second World War period, there was a considerable growth in experimental research in group dynamics and its

application in classroom settings (Thelen, 1954, Horowitz, 1953, Hare, 1962). Herbert Thelen made a significant contribution to the later development of cooperative learning by combining a view of learning as a process of inquiry by students working together in small groups, with the theory and method needed for the effective management of groups. It was Thelen (1954) who realised the importance of preparing pupils to function in a group. He felt it was counterproductive to expect people of any age to work together, if they had neither been prepared, nor had prior experience of working in this way.

The development of CL was further supported by Deutsch (1949a), who was the first to investigate the differences in interactions between individuals and group processes that were either cooperative or competitive. His study of firstyear university students investigated interaction (1949b). He hypothesised that if students are working cooperatively to attain a group goal they will perceive themselves to be more psychologically interdependent, friendlier, more cohesive and more motivated than those in a competitive situation. The results of a five-week study showed that students in the cooperative situation showed a stronger sense of group feeling compared to those in an individualistic situation who were more self-centred. This study provided evidence that when groups cooperate, they are more productive and motivated to achieve, communicate better and have better inter-group relations than groups that compete. Research continued over the next decade, but Johnson and Johnson (2000) argued that the momentum was lost during the 1950s because of the focus on the individual rather than the group. Research such as Asch (1952) on how individuals are influenced by others; Festinger's theories of social comparison

(1954) and Kelly's (1955) theory of personal constructs; all focused on the individual's attitudes, values and thoughts to explain social behaviour, rather than group behaviour.

Interest in group work re-emerged in the 1970s stimulated by empirical research on peer tutoring, which showed academic and social benefits (Brown *et al*, 1971). Studies showed that pupils could be trained to facilitate academic work, improve behaviour and support social skills (Damon 1984, Greenwood and Hops, 1981). These studies stimulated a growing interest in group work and cooperative learning versus competitive and individual learning. Such was the momentum that in 1979 the first International Association for the Study of Cooperation in Education (IASCE) conference was held in Israel.

In the 1980s a wealth of research was triggered principally by Johnson and colleagues who had begun training teachers in CL at the University of Minnesota from 1961 onwards. This research included meta-analyses (Johnson and Johnson) in 1981, 1983 and more recently in 2001 (to be reviewed later in this chapter). Alongside Johnson *et al*'s work, there was a flowering of research into a range of type of CL. In the late 1970s Elliott Aronson (Aronson *et al* 1978) developed the 'jigsaw' method together with Spencer Kagan's (1985) work during the 1970s and 1980s developing cooperative strategies or 'structures'. In Israel, Shlomo and Yael Sharan (1976) developed the group investigation procedure for cooperative learning group also in the 1970s; whilst in the early 1980s Elizabeth Cohen (1984) at Stamford University in the US developed a method entitled 'complex learning'.

Research studies by Johnson *et al*, (1983, 1985) Slavin (1989) and Sharan (1980) confirmed that cooperative learning is an effective teaching strategy. But whilst acceptance of this became more widely prevalent, controversy surrounded the most effective method.

During the next two decades work on cooperative learning mushroomed, primarily in the US. In the early 1970s David DeVries and Keith Edwards (DeVries and Edwards 1974) at Johns Hopkins University developed Team-Games-Tournaments followed by Robert Slavin's (1978) work at the same University on cooperative curricula and an approach named Student Teams Achievement Divisions. This led to the development of a cooperative elementary school in 1986 by Slavin and the *Success for All* programme which was aimed at ensuring that all children are supported to learn (Slavin, 1996). This programme used cooperative learning methods and applied them to the curriculum, specifically reading and, to a lesser extent, mathematics and social studies. The programme found overall positive outcomes (Slavin *et al*, 1990, 1994).

In the UK, interest in CL was more limited, although the contribution of Barnes (1977) supported the links between talk and enhancing the thinking process. Cowie and Rudduck's (1988) research examined the criteria for success and in 1990 Dunne and Bennett found positive effects on pupil involvement. Research on the use of CL in multi-ethnic classrooms (Cowie, *et al* 1994) supported its use. Galton and Williamson (1992) provided guidelines on developing a collaborative climate in the classroom with a structured approach. At the same

time the work of Elizabeth Dunne and Neville Bennett (1990) investigated children's work and talk in groups and found a considerable increase in the involvement of children when they worked in cooperative groups. More recently, an ERSC funded project in the UK, entitled 'SPRinG' (Social Pedagogic Research into Grouping) (Blatchford *et al*, 2003) found positive effects using group work on learning, motivation, attitudes to learning and relationships. Also more recently, work on 'peer learning' (Topping, 2005) has shown gains in academic achievement and in social and communication skills.

Work in Australia by Robyn Gillies (2004, 2006) and Gillies and Boyle (2005, 2006) has examined the impact of teachers' discourse to promote interaction between students. In a study of 30 elementary teachers and 826 pupils, Gillies (2004) found that those teachers who were trained in communication skills in addition to the use of cooperative learning, engaged in more mediated learning strategies and asked more questions. Gillies and Boyle (2006) analysed transcripts of teachers' discourse as they interacted with children in order to examine further the different types of mediated learning behaviours teachers use. These showed they challenged children's understanding, encouraged their thinking and helped them to make connections to previous learning. The teachers were also observed doing this in conjunction with encouraging children to cooperate and discuss their ideas together.

In order to fully understand the role of CL in effective learning, it is necessary to explore approaches to CL further. The next section will therefore turn to a brief

explanation of the myriad forms of CL (and the bewildering array of names), before analysing research into their comparative benefits.

2.2 Different Approaches to Cooperative Learning

A range of different approaches to CL have emerged. These vary in essence from those that present strategies that are applicable across the curriculum and age ranges, to those that are embedded within a defined curriculum. Nevertheless, certain essential ingredients are common to all. Johnson *et al* (1994) set out two basic elements which include positive interdependence, derived from the social interdependence theory, and which has expanded to include individual and group accountability. The other key element: promotive interaction provides the conditions for CL to thrive. It occurs when individuals encourage each other to accomplish the group's goals, which in turn require the appropriate use of social skills and the ability to reflect on, and improve them. As these elements form the bedrock of CL, it is necessary to review them in greater depth:

Positive interdependence

This is the core element of CL, i.e. the whole group does not succeed without every member contributing (an 'all for one – one for all' attitude is required). This is group accountability. This results from mutual goals and it can be structured in three ways: outcome, means and boundary. Therefore, to be interdependent pupils need to be orientated to a desired joint outcome or goal. Means interdependence includes resources, role and tasks. Thirdly the boundaries that exist among individuals and groups can define who is interdependent with whom and has links to a group's cohesion. A number of studies showed that knowing that one's performance can affect others increases a sense of responsibility to perform (Lew *et* al 1986, Johnson and Johnson, 1991). As Johnson and Johnson (2008: 22) point out *'Failing oneself is bad, but failing others as well as oneself is worse.'*

Individual accountability

Another aspect of positive interdependence is that of individual accountability. An individual must be committed to his or her own learning and that of the group. This exists when the performance of each individual member of a group impacts on others and the individual is held accountable by other members, for contributing his or her fair share to the group's success. Hooper *et al* (1989) found that cooperation resulted in higher achievement when individual accountability was ensured, than when it was not. Increasing individual accountability also impacts on interdependence amongst a group. One factor that has been shown to impact on individual accountability, is the size of the group and as team size increases, accountability reduces (Kerr, 1989, Olson, 1965).

Promotive Interaction

Promotive Interaction provides the conditions for positive interdependence to occur. It occurs as individuals encourage each other's efforts to achieve joint goals. It is characterised by (Johnson and Johnson, 2008):

- providing each other with support and assistance
- exchanging needed resources

- providing each other with feedback
- challenging each other's decisions and reasoning
- encouraging each other to exert effort
- influencing each other's efforts to achieve goals
- acting in trusting and trustworthy ways
- being motivated to work for mutual benefit
- having low levels of stress and anxiety when supported by others
- having a clearer view of the perspectives of others

Johnson and Johnson also set out key aspects of promotive interaction to include:

- Group and individual reflection groups learn to monitor and assess their own functioning. The process of reflecting on group effectiveness has been shown to support greater cooperation (Yager *et al*, 1986). Group processing may be defined as reflecting on a group session to first describe what actions by members were helpful or not, and second, to decide on what to change to continue for the group's further success.
- 2. Small group skills these need to be explicitly taught and involve the skills of encouragement, management, communication and conflict control. The need for interpersonal and small group skills is the bedrock of working cooperatively. These need to be clearly taught and pupils need to be motivated to use them. In particular, group members must (Johnson and Johnson, 2006):
 - get to know and trust each other
 - communicate effectively with each other

- accept and support each other
- be able to resolve conflicts constructively
- Face-to-face interaction this involves ensuring the physical layout of the classroom is conducive to CL

In simplifying these key elements for use in the classroom, Johnson and Johnson (1999a) use the acronym 'PIGS F':

Positive interdependence Individual accountability Group processing (i.e. reflection on the success of the group) Small group skills Face to face interaction

These key elements vary according to different researchers into CL (for example, Slavin, 1996, Kagan, 1994), although there is common agreement on the vital ingredients of positive interdependence and individual accountability (Cooper & Mueck, 1992; Cottell & Millis, 1992; Slavin, 1992). Slavin describes the importance of 'group goals and individual accountability' (1996: 52) although he stresses that CL has most impact when groups are rewarded 'based on the individual learning of their members' (ibid). Kagan (1994) cites three main principles: simultaneous interaction (pupils are able to interact with each other simultaneously, rather than the traditional classroom situation where the teacher and one pupil at a time interacts); positive interdependence and individual accountability (as described above). He also states the importance of teachers fully understanding these basic principles in order to succeed in the use of CL.

The author's research into CL (2006), working with a network of primary and secondary schools in the north of England, found the key elements crucial to its success; are positive interdependence alongside individual accountability, both of which can be supported by the structure of the tasks. Underpinning these are the pre-requisite small group and interpersonal skills: principally communication and conflict resolution skills. It is these skills which facilitate effective interaction and talk for learning.

These key elements are common to the many different approaches to CL. But before analysing the comparative research into these, it is important to clarify what these approaches entail. Johnson and Johnson (2001) found ten types of CL as most widespread:

Table 2.2 Ten Most Common Types of CL

Method	Developer/Researcher		
Learning Together & Alone (LT)	Johnson & Johnson, 1975		
Teams-Games-Tournaments (TGT)	DeVries & Edwards, 1974		
Group Investigation (GI)	Sharan & Sharan, 1994		
Constructive Controversy/Academic	Johnson & Johnson, 1995		
Controversy (AI)			
Jigsaw Procedure	Aronson & Associates, 1978		
Student Teams Achievement	Slavin,1985		
Divisions (STAD)			
Complex Instruction (CI)	Cohen, 1984, 1994a		
Team Accelerated Instruction (TAI)	Slavin & Associates, 1985		
Cooperative Learning Structures	Kagan, 1994		
Cooperative Integrated Reading &	Stevens, Slavin, & Associates, 1987		
Composition (CIRC)			

The following section discusses these, together with the main research findings for each.

2.2.1 Learning Together (Johnson and Johnson, 1975)

This method when it was first developed did not set out specific detail for

implementation. It was typically described as a method in which:

'students worked as a group to complete a single group product, shared ideas and helped each other with answers to questions, made sure all members were involved and understood group answers, and asked for help from each other before asking the teacher, and the teacher praised and rewarded the group on the basis of the group performance.e' (Knight, and Bohlmeyer, 1990: 2)

In essence this method incorporates the five key elements described previously,

and known by the acronym 'PIGS F'. Studies that incorporated all five key

elements, and particularly individual accountability, have consistently shown

significant positive results (Yager, 1985, Johnson and Johnson, 1985, Johnson

et al, 1994). Developing on this, Johnson and Johnson (1984) set out 18

specific steps for implementation for teachers:

- 1. Teaching objectives should be specified.
- 2. Groups need to be limited to no more than six (later recommendations were of four).
- 3. Groups should be heterogeneous in terms of ability, sex and ethnicity.
- 4. Groups should be arranged in circles to help communication.
- 5. Materials should promote interdependence, such as only one copy of materials per group, to facilitate sharing.
- 6. Roles should be assigned to pupils in groups to ensure interdependence.
- 7. The task must be clearly structured and explained.
- 8. Positive goal interdependence should be structured, i.e. by the group producing a single product.
- 9. Individual accountability should be ensured so that all members of the group contribute.
- 10. Inter-group cooperation should be provided.
- 11. The criteria for success should be explained.
- 12. The desired behaviours should be stated from a clear hierarchy of skills.
- 13. Pupils' behaviour should be monitored continually.
- 14. Task assistance should be provided.
- 15. Intervention to teach collaborative skills should be provided where necessary.
- 16. Closure to a lesson should be provided with summaries by pupils and the teacher.
- 17. The pupils' work should be evaluated.

18. Group functioning should be assed by ongoing observation and discussion of group process.

In Learning Together, Johnson and Johnson also set out three key types of cooperative learning groups. Firstly, formal cooperative learning groups which last from one lesson to several weeks in which groups are established and roles assigned within groups. Secondly, informal cooperative learning groups which are ad hoc groups that can last from a few minutes to a whole lesson and typically consist of turn to your partner type activities. Thirdly, cooperative base groups which are long term (usually lasting for an academic year) heterogeneous groups with stable membership where relationships are clearly established.

This approach also sets out a developmental approach for teachers, from initial use to 'mechanical use', using particular guidance; to finally 'routine use' where 'teachers automatically structure cooperative learning situations without conscious thought or planning' (Johnson and Johnson, 1999a: 99). This process, Johnson and Johnson state, may take up to two years. This concurs with the author's research (Jolliffe & Hutchinson, 2007), and also highlights a further key aspect to be discussed in this thesis: the need the support teachers during this lengthy process.

2.2.2 Teams-Games-Tournaments (TGT) (Devries & Edwards, 1974)

In this approach, members of each group complete a drill with the computer, which is accompanied by discussion in groups and then pupils compete in teams. This process goes on for some time with the top scoring student in each team moving to a group of higher achieving students, and the bottom scoring student moving down a group. Prizes are awarded at the end of the tournament. In a comparison of classes where prizes were awarded individually against another with prizes for top scoring groups, (Devries & Edwards, 1974), the class with the combined individual and group rewards did significantly better.

This method is complex to organize and has more limited application to different ages of pupils and different areas of the curriculum. In addition, the introduction of a highly competitive element in this method of CL is the subject of considerable debate, centering on the use of intrinsic rather than extrinsic rewards (Johnson and Johnson, 1989, Brown and Thomson, 2000). Johnson and Johnson found that:

'Striving for mutual benefit results in an emotional bonding with collaborators liking each other, wanting to help each other succeed, and committing to each other's well-being. These positive feelings toward the group and the other members may have a number of important influences on **one's intrinsic motivation to achieve** and actual productivity'. (1999a:200)

In contrast, in competitive individualistic situations, the motivational system promoted is predominately extrinsic reward, such as recognition for individual achievement. This key difference in introducing competition into CL is found in other forms of CL as will be discussed later.

2.2.3 Group Investigation - Yael and Shlomo Sharan (1994)

In this version, CL centres on a problem-solving approach which has four elements, combined simultaneously:

- Investigation: this refers to the organisation and procedures necessary for carrying out inquiry-based learning.
- 2. Interaction: this identifies the interpersonal, or social, dimension of the learning process.
- Interpretation: this occurs between group members and on an individual cognitive level, as the pupils co-construct knowledge. Individuals' understanding is enhanced by joint interpretation.
- 4. Intrinsic motivation: this refers to the engagement and emotional involvement of pupils in the topic. The goal is to trigger personal interest in the subject and thus motivated to carry out the task.

This approach encourages higher-order thinking skills by comparing, contrasting and integrating a range of ideas, concepts and findings. Pupils are encouraged to take an active part in planning their learning goals and thus gain more ownership over the learning.

The stages in which this approach is carried out are as follows:

Stage 1: Class decides on subtopics and organises into research groups

Stage 2: Groups plan their investigations

Stage 3: Groups carry out their investigations

Stage 4: Groups plan their presentations

Stage 5: Groups make their presentations

Stage 6: Teacher and pupils evaluate their projects

A study by Sharan & Shachar (1988) where the teachers used the method for several months before beginning to research the impact, found very large positive effects.

This approach is suitable for open-ended problem-solving tasks and requires a clearly staged approach which could be highly suitable for some curriculum areas. There are, however, limitations in the age groups for which this is suitable, as it requires pupils to take considerable responsibility for deciding how to go about their learning.

2.2.4 Constructive Controversy (Johnson and Johnson, 1995)

Johnson and Johnson state that 'creating intellectual conflict (controversy) to improve academic learning is one of the most powerful and important instructional tools' (1999a:39). The format for structuring this approach consists of:

- A topic is selected by the teacher which can be divided easily into two clear positions (for and against).
- Pupils are placed in groups of four, divided into two pairs, with each pair given a 'for and against' position.
- 3. Each pair then learns the position and arguments, researches further information, and prepares a series of persuasive arguments.
- 4. The teacher emphasizes the importance of reaching a consensus.
- 5. Each pair presents its position.
- Discussion time is provided with pairs asking for evidence for the differing positions.

- 7. The pairs reverse the positions and present the opposite arguments.
- 8. The groups then reach a decision by consensus followed by either writing a group report or take a test on both positions individually.

Johnson and Johnson, (1995) report that pupils derive many academic and social benefits from participating in such controversies, however this approach is only suitable to certain types of activity or curriculum area. This method also could only be used by older children with the skills and maturity to carry out such tasks.

2.2.5 Jigsaw - (Aronson et al, 1978)

Jigsaw is one of the earliest of the cooperative learning methods to be used. In Jigsaw, each pupil in a small group is given unique information on a topic studied by the whole group. After pupils have studied their sections, they reform in 'expert groups' with their counterparts from other groups to discuss the information. Next, the pupils return to their groups and teach their teammates what they have learned. In this way each member of the home group plays a vital role and the group cannot succeed unless everyone contributes. The findings by Aronson *et al* (1978) showed five major benefits when using the jigsaw technique. Firstly, pupils showed increased likely for team-mates without decreasing their liking for others in the classroom. Secondly, both white and black children showed increased liking for school than in competitive classrooms. Thirdly, it increased self-esteem and fourthly, pupils cooperated more and viewed others in the class as a learning resource and finally pupils showed improved academic achievement and this was maintained. Bottery (1990) reported similar findings working in an inner-city primary school in the north of England. He also noted that 'the almost total absence of 'chalk and talk' by the teacher allowed the children to feel much more active and important in the learning process' (1990: 92).

Various models of Jigsaw have been explored, which demonstrate that they create positive interdependence and individual accountability. However, this method can be complex to organise in terms of materials, and it may work better for some topics (e.g. those that are sequential) than for others.

An adaptation of Elliot Aronson's Jigsaw technique (1978), called Jigsaw II involves pupils working in four-member, heterogeneous teams as in Student Teams-Achievement Divisions (STAD), discussed below. They read narrative materials and each member is given a special area in which to become an expert. They then work with other experts from other teams on the same material and return to teach the topic to their fellow team members. This is followed by an assessment of some form for the whole team. Individual successes are thus dependent on the contribution of each member. Studies of the success of this method have shown that there were significant positive effects particularly in certain subjects, e.g. geography (Mattingly and Van Sickle, 1991) with no significant improvement in other areas.

2.2.6 Student teams (STAD) – Robert Slavin (1985)

Student team learning methods incorporate the concept of individual accountability and equal opportunity to succeed, but also include the use of team rewards. Teams usually consist of four members who are mixed in gender, ability and ethnicity. The teacher presents the lesson, and then pupils work in teams to ensure that all members have mastered the objective. Pupils then take individual tests on the material and scores are averaged for teams and compared with past scores, with teams rewarded for meeting certain criteria. Slavin (1983a) conducted 46 experiments in elementary and secondary schools in the United States and control groups showed a favourable effect in a large number of these experiments. Of 29 separate studies on STAD (reported in detail in Salvin 1996:20), 69% were found to have significant positive effects and no effects were negative.

The introduction of competition between teams has led to fierce debate, as discussed previously, for although Slavin holds that some form of reward is necessary to maintain motivation, Johnson and Johnson (1989) and Brown and Thomson (2000) hold that competition is not an essential requirement and state:

'The introduction of competition seems more likely to lead to performance goals rather than mastery goals as well as encouraging extrinsic motivation.' (Brown and Thomson, 2000:40)

2.2.7 Complex Instruction - Elizabeth Cohen (1984, 1994)

Cohen has incorporated various multiple intelligence factors into tasks so that all members of the class may have an opportunity to contribute. In this way, Cohen has sought to address the issue of perceived pupil status. Cohen *et a*l (1999) argue that complex instruction alleviates these problems. Research by Cohen and Lotan (1997) showed that using curricula specially designed for complex instruction, students gained significantly more than students in comparison classes on questions requiring higher-order thinking, although not on factual recall. These activities fit the need for cooperative learning tasks to be open-ended which then increases the need for interaction. It also provides for multiple-ability tasks which needs the teacher to '*convince their students that there are different ways to be 'smart'* (1999: 85), although these will not solve status problems which may be based on race or gender. Nevertheless, complex instruction offers two strategies to minimise status problems:

1. The multiple-abilities treatment

This concerns broadening conceptions of being 'smart'. It is grounded in the teacher's public recognition of the wealth of intellectual abilities and the value given to them. A task would begin by stating the different skills and abilities necessary for completion and pupils are convinced that the task is different to ones they traditionally complete in the classroom. Pupils are reminded that no one has all the abilities necessary.

2. Assigning competence to low-status pupils. This must be a public statement that recognises the different contribution that different pupils make. It is a positive evaluation that is specific that tells the pupil and group exactly what he or she did well. It must also make the intellectual ability demonstrated relevant to the work of the group. It is strongest when it is made on the spot during group work. Cohen found that it is easier for teachers to take notes on pupils' contributions and assign competence later, perhaps during a plenary, or at the start of another

lesson. To be effective, it requires a thorough knowledge of pupils' abilities by the teacher.

Complex Instruction requires a different classroom management system where authority is delegated to the group. This is helped through particular strategies such as activity cards for the task, stating specific cooperative learning behaviours necessary for the task and a set of procedural roles for each member of the group.

The process of developing complex instruction says Cohen *et al* (1994b) takes a long time. She recommends a staff development process that takes a year to provide teachers with the theoretical understanding and practical experience necessary to maintain high quality implementation. During the following school year, researchers follow the teachers into the classrooms and provide feedback. Teachers then receive further training for two days mid-year, during which time they look at status problems in more depth and, in small groups, teachers reflect on the social structure of their own classrooms.

This approach is, as its name implies, complex. It requires time to implement and a detailed knowledge by the teachers of the pupils in their classes to work effectively. There may also be limitations of application to different age groups and types of task.

2.2.8 Team-Assisted Individualisation or Team-Accelerated Instruction (TAI) (Robert Slavin, 1985)

TAI was designed to combine the motivational aspect of group rewards with an individualised instruction programme appropriate for the level for each pupil. This method consists of small heterogeneous groups with each pupil working on an individualised unit of work. Team members check each other's answers and help each other to take a test through discussion and peer tutoring. Team scores are then compiled from average marks over a period with teams whose scores reach a certain level, receiving a group reward in the form of a certificate. Six studies reported by Slavin (1996) all found statistically significant positive effects on comprehension, or in mathematics tests, using this method.

This method provides a bridge from paired to small group work, and requires considerable interpersonal and small group skills from pupils, to work effectively. In addition, the contentious aspect of competition between groups is introduced.

2.2.9 The Structural Approach – Spencer Kagan (1994)

Kagan has devised structures, or social interaction sequences, which enable the teacher to transform existing lessons into a cooperative format by using simple strategies. These strategies, or structures, are content-free mechanisms and widely transferable across the curriculum, an example being, think-pairshare, where pupils are asked a question, given time to think; then they discuss with a partner before sharing with the class. Another example is 'numbered heads' where each member of the team is given a number and then they are asked to find the answer to a particular question or problem. After an allotted time, the teacher selects one member of the team by calling out a number, to explain the answer. In this way every member of the team has to be prepared to answer and is encouraged to contribute to the team.

He identifies six primary purposes for the structures:

- (i) class-building
- (ii) team-building
- (iii) communication
- (iv) information-sharing
- (v) mastery
- (vi) concept development/thinking skills

Kagan has also developed a particular cooperative learning strategy called 'Coop Co-op' which was designed for training teachers. This involves training in the basic principles and philosophy followed by steps which resemble the Group Investigation approach (Sharan and Sharan, 1994). One difference is that the teams work together to produce something that is of benefit to the whole class. The method is designed to be flexible, although it is easiest to use with university level students. This adaptation has not been extensively researched, however, other than ascertaining predominately positive responses from students who have used it (Kagan, 1985b).

Kagan's structural approach presents many benefits, principally to the wide application across the curriculum. Kagan has also identified particular advantages in improved ethnic relations (Kagan *et al*, 1985b) from this

approach. For many of the structures, these can be applied across the age ranges. The author's research has reinforced this (2007), however, there is a danger that teachers use a number of the structures without understanding the key elements of CL, or ensuring that the necessary small group skills are in place. In this case, CL has very limited benefits.

2.2.10 Cooperative Integrated Reading and Composition (CIRC) (Steven, Slavin, and Associates, 1987)

This approach consists of three principal elements: using core reading books and related activities, direct instruction in reading comprehension, and integrated arts/writing. In all of these pupils work in heterogeneous teams, and activities following a cycle of: teacher presentation, team practice, including paired work, peer-reassessment, additional practice and testing. Studies by Stevens *et al* (1987) and Madden *et al* (1983) showed overall positive results on reading comprehension.

This method is incorporated within the *Success for All* programme (Slavin, 1996) and where there is clear guidance to teachers, can be followed successfully. It is, like other methods, dependent on teacher understanding of CL and pupil skills in implementing it.

Such a wide array of types of cooperative learning has led to comparative research on the benefits of it. This is the subject of the next section.

2.3 Comparing the Approaches

Johnson and Johnson (2001:2) conducted a meta-analysis of research findings of CL and found over 900 studies '*validating the effectiveness of cooperative over competitive and individualistic efforts*' Johnson *et al* found ten CL methods that had been most widespread and the subject of the majority research (as detailed previously).

Johnson and Johnson reviewed which methods had proved to be most effective by examining empirical research and looked particularly at four questions:

- How much research has been conducted to validate specific cooperative learning procedures? This was related to 'effectiveness studies' (i.e., real-world studies of how cooperative learning is actually delivered and what the outcomes are like).
- 2. How many different cooperative learning methods have been evaluated?
- 3. How effective are the different cooperative learning methods in maximizing achievement?
- 4. What are the characteristics of the more effective cooperative learning methods?

The criterion for inclusion was that the research study evaluated the impact of a specific method of CL on student achievement. 164 studies met the criteria, but multiple studies were discounted leaving 158. All these studies were conducted since 1970 and 28 percent since 1990. 66 percent were published in journals. The duration of the studies showed that 52 percent were from 2 to 29 sessions (a session lasting 60 minutes or less), and 46 percent from 30 sessions or more. 94 percent involved mixed gender groups. The context ranged from four

in Southeast Asia, three in the Middle East, three in Europe, four in Africa and the rest from North America. Studies ranged from elementary schools (46 percent) to middle schools (11 percent) to high schools (11 percent) and 24 percent in post secondary or adult settings.

The results were ranked by the size of the effect they have on achievement and by the number of comparisons available:

Method	Coop v Comp Effect sizes	n number of comparisons	Coop v Ind	n number of comparisons
Learning Together	0.85	26	1.04	57
Academic (constructive) Controversy	0.67	19	0.91	11
Student Teams Achievement Division	0.51	15	0.62	1
Team Games Tournaments	0.48	9	0.58	5
Group Investigation	0.37	2	0.33	8
Jigsaw	0.29	9	0.29	14
Team Assisted Individualisation	0.25	7	0.18	1
Cooperative Integrated Reading and Composition	0.18	7	0.13	5

Table 2. 3 Ranking Of Cooperative Learning Methods (meeting the criteria)

(taken from Johnson and Johnson, 2001: 10)

Studies for Complex Instruction (Cohen *et al* 1994b) were not included as research had compared it with other group methods, rather than comparing with competitive or individualistic methods.

The above showed that Learning Together (Johnson and Johnson, 1975) promoted the greatest effect followed by academic (constructive) controversy and STAD.

Other dimensions by which these methods were compared were:

- Ease of learning,
- Ease of initial use
- Ease of long-term maintenance
- Applicability to a range of subjects and ages
- Adaptability to change

Each was rated on a five point scale on the above dimensions. These results showed the higher the conceptual aspects of the design (conceptual methods involve frameworks that teachers learn and can adapt to different lessons), the higher the achievement.

This meta-analysis showed the extent of research into the effectiveness of CL on student achievement. It concluded that if *'cooperative learning is implemented effectively, the likelihood of positive results is quite high'* (Johnson and Johnson, 2001: 14).

Another study (Okebukola, 1985) compared TGT, STAD, Jigsaw and the learning together model (Johnson and Johnson, 1975). This found on a test of science achievement, that whilst all methods achieved better results than individual or whole class work, the Learning Together model produced the least favourable results and the STAD produced the most favourable. This would

seem to show that the inclusion of extrinsic rewards does produce gains in achievement. However Complex Instruction (Cohen, 1994b) does not include rewards and when compared to STAD in promoting achievement including higher order thinking, complex instruction was found to produce significant gains. Cohen (1994b) comments that Slavin's reward interdependence is necessary in collaborative seatwork. Where the task involves challenging and interesting group tasks, this motivation does not appear necessary. It might therefore be summarised from this that the nature of the task makes a significant difference.

One of the arguments against offering rewards on a competitive basis, has been the negative effects on relationships between groups. Miller, Brewer and Edwards (1985) examined varied reward structures as did Johnson, Johnson and Maruyama, (1983), and they concluded that class relationships could be damaged by competition between groups. There is also evidence to show that introducing competition is particularly disadvantageous for certain categories of students, e.g. minority ethnic groups (Widaman and Kagan, 1987). In addition, the effect of participating in a less successful team using STAD procedures was negative for those students who were characterized as exhibiting 'learned helpless' manifestations and had no effect on those students characterized as 'mastery-orientated' (Abrami, *et al* 1992: 7). In spite of these studies, Slavin (1983a) claims the evidence linking STAD to gains in cross-racial friendships is strong.

Many of these methods have been developed extensively in the USA. However, there are increasingly a range of other cultural contexts where CL has been developed. It is crucial that any analysis of research into the results of CL, also considers the impact of the particular culture. Before turning to a more detailed analysis of such research findings, it is first useful to review the benefits that have been shown to accrue.

2.4 Advantages of CL

Cooperative Learning has been among the most widely investigated approaches in the educational research literature. Hundreds of studies have compared the effects of CL with other instructional methods such as the lecture method or individualized instruction. Many of these studies coincided with the flowering of the cooperative learning movement in the 1980s. Nevertheless research is ongoing as is evidence by the large number of publications and journal articles reported in the International Association for the Study of Cooperation in Education (IASCE) newsletter. Latterly research has revolved around specific issues, age groups or cultural contexts, and in some countries, such as the UK, research has more recently gained pace.

Research conducted in many different subject areas and various age groups of students has generally shown positive effects for CL in the following areas: academic achievement, development of higher order thinking, self-esteem and self-confidence as learners, inter-group relations including friendships across racial and ethnic boundaries, social acceptance of mainstreamed students

labelled as disabled, development of social skills, and the ability to take the perspective of another person.

What are the key findings from research? Johnson and Johnson (1989, 2001), Slavin (1990), and Sharan (1990) all identify three main categories of advantages:

(1) Achievement

Over 375 studies in the past 100 years (Johnson and Johnson, 1994) have shown how working together to achieve a common goal produces higher achievement and greater productivity than working alone. In 1981 Johnson and colleagues published a meta-analysis of 122 studies examining cooperative learning and its impact on achievement. This showed that cooperation promotes higher achievement for all age groups and for a variety of tasks. The cooperation also improved the more group members were required to produce a group product. CL also results in process gain (i.e. more higher level reasoning), greater transfer of what is learned within one situation to another and more time on task.

Slavin (1989) reviewed 60 studies of cooperative learning and found that gains in academic achievement were maximised if group goals and individual accountability by members of the group were embedded. He found that motivation was enhanced through use of STAD.

Sharan (1980) reviewed five methods of cooperative learning including Jigsaw, Teams-games-tournaments, student team learning, leaning together and group investigation. He found that children perform more effectively in small groups than traditional whole class settings and the group investigation method produced higher levels of cognitive functioning. This he found was due to the peer interaction which clarified misunderstandings and developed problemsolving skills.

The ESRC funded SPRinG project (Blatchford *et al*, 2005) also found a positive impact on pupils' academic progress. At Key Stage 1 the benefits were found in reading and mathematics; in Key Stage 2 particularly in problem-solving and inferential thinking and in Key Stage 3 there were benefits to higher cognitive levels.

(2) Inter-personal relationships

Over 180 studies have been conducted since the 1940s (Johnson and Johnson, 1989) which have shown that CL experiences promote greater inter-personal skills. In (1983) Johnson *et al* found that cooperative learning supported interpersonal skills amongst students from different ethnic groups, and mixed ability and disability. They then focused on variables that impact on cooperative learning and achievement. Johnson and Johnson (1985) identified eleven variables that impact on cooperation, productivity and inter-personal attraction. These variables were grouped into three clusters: cognitive process variables (i.e. quality of learning), social variables (i.e. mutual support among group members), and instructional variables (i.e. type of task). While the effect of

each of these variables, requires further verification, it did suggest that the processes may promote higher achievement and liking amongst students, including, managing controversy, time on task, sharing and processing information, peer support, peer group involvement in learning, interaction between students of different ability, perceived psychological support, positive attitudes to subject areas and perceptions of fairness of assessment.

Blatchford *et al* (2005) also found particularly in Key Stage 2 advantages in reducing differences between boys and girls of different ability levels in contributions to group work.

(3) Psychological health and social competence

Working co-operatively with peers and valuing co-operation results in greater psychological health, higher self-esteem and greater social competencies than competing with peers or working independently (Johnson and Johnson, 1983, Johnson and Johnson, 1997). Jordan and Metais (1997) found given training in social skills, pupils demonstrated greater social interactions and that the interpersonal relationships of previously isolated students improved. Gillies (2003) analysis of five studies showed that provided small group work is carefully structured to promote effective cooperation, that over time and with practice the 'more cohesive the groups became as members strove to facilitate each other's learning' (2003:45-46).

2.5 Research Findings: specific themes

David and Roger Johnson (1989) have shown that there have been more managed studies of CL than any other teaching methodology. Robert Slavin located 95 studies in 1995 of at least 4 weeks duration (Slavin, 1999) and stated:

'No classroom instructional method has ever been as extensively and rigorously evaluated as co-operative learning.' (Slavin, 1996:16)

The prolific amount of research studies into CL range widely in terms of specific aspects researched, yet several themes emerge from the findings which can be particularly relevant to effective implementation. The analysis of research which follows will be driven by these themes, namely:

- 1. The level of interdependence present; i.e. the extent to which pupils perceive that they can only succeed in a task if they support each other.
- 2. Developing and incorporating talk for learning.
- 3. Specific teaching of teamwork and communication skills.
- 4. The nature of the task should lend itself to cooperative group work.
- 5. The structure of groups, i.e. the mix of pupils in a group.
- 6. The role of the teacher as a facilitator of learning.
- 7. Inclusion of intrinsic or extrinsic rewards.
- 8. Starting CL work with very young children.
- 9. Assessment of cooperative group work.

Each of these themes will now be examined.

2.5.1 Ensuring interdependence

The importance of ensuring interdependence is shown by a range of studies (e.g. Johnson et al, 1990). This can be achieved in different ways including resource interdependence where, for example, only one worksheet is provided for the group. In contrast goal interdependence is a concept developed by Deutsch (1962) which means that individuals can only achieve a goal if the others in the groups also achieve theirs. The Johnson model advocates both resource and goal interdependence. However neither guarantees interaction, nor motivation to do so. Cohen views resource interdependence as limited, and cites Johnson, Johnson and Stanne, (1990) where simple resource interdependence was associated with the poorest results. This resource interdependence is also present in Aronson et al's, (1978) jigsaw approach, although Huber and Eppler (1990) noted that slow learning members of a jigsaw team did not necessarily return from expert group sessions knowing more than their team members. This finding is not borne out elsewhere, for example Bottery (1990) where academic results, using jigsaw lessons, were consistently high. Interdependence also encourages pupils to engage in interaction which relates to the next theme.

2.5.2 Developing and incorporating talk for learning

The very nature of CL facilitates interaction amongst pupils. It was the work of Webb (1985) who showed the importance of the explanations that children were required to give that then impacted on the learning. However, in a more recent study (1995) Webb *et al* found that such explanations needed to be pitched appropriately for the pupil to benefit. Other studies (e.g. King *et al*,1998) found

that pupils can be trained in questioning and giving explanations and that this together with peer tutoring showed greater academic achievement.

Barnes and Todd's study (1977) became central to much later research. They conducted a qualitative analysis of the interaction in groups which showed the nature of understanding that arises from groups, the kinds of social and cognitive skills required for effective interaction and the effects on the interaction by the variation in tasks. Cohen describes the transcripts from this study as 'some of the best examples in the literature of the social construction of knowledge' (Cohen, 1994a: 5). Barnes and Todd's work also showed that pupils need both social and cognitive skills for effective interaction.

Explicit talk to support problem-solving is an aspect researched by Chang and Wells (1987), who concluded that in order to be effective, groups must manage the process of solving problems with explicit talk. They defined learning as problem-solving, and to work together students need to identify specific goals and then carry out a plan-do-review procedure. Vedder (1985) also sees cooperative learning as a result of an explicit process, which expounds the role of pupils controlling each other's learning. Vedder, however, was disappointed at the level of talk that takes place in small groups. From these studies, Cohen (1994a) propounded a generalisation: for pupils to engage in high-level interaction, they need specific development of skills for discourse and Barnes and Todd's work suggests that pupils also need support with interpersonal skills.
Cohen also examined any possible correlation between the extent of interaction and academic achievement. Webb (1983, 1991) has reviewed studies in this area also, but the correlation shows wide inconsistencies, and presented no system of classroom management or special skills training. Cohen, however, found, using complex instruction (Cohen, 1994b), that

'simple measures of frequency of task-related interaction are related to gains on computation and mathematical concepts and applications as well as on content-referenced tests.' (1994v:7)

Leechor (1988) also concluded that task-related talk was a significant predictor of gains in mathematics. Cohen postulates that the reasons for the differences in findings are, first the working relationships between the group members and second, the nature of the task. A group task requires resources that are shared amongst the group and are unable to solve the problem or task without input from others. Group members must therefore exchange resources before completing the task. This therefore ensures the key element of With complex instruction, interdependence is also interdependence. established by each member of a group being responsible for the success of the rest. In this method of CL, groups have a weekly skills building activity. The other key difference between studies by Webb (1991) and Cohen (1986) lies in the nature of task, with many algorithmic mathematics tasks having one right answer. Open-ended tasks, in contrast allow the group to exchange ideas and come up with creative solutions. This led Cohen to the following general proposition:

'Given an ill-structured problem and a group task, productivity will depend on interaction.' (1994a:8)

A key factor was also found to be:

'The most consistent, positive predictor or achievement in these studies is the giving of detailed, elaborate explanations.' (Cohen, 1994a: 9 citing Webb, 1983, 1991)

The giving of detailed explanations concurs with what Fletcher (1985) terms 'cognitive facilitation'. This concerns verbalizing decisions, and also what has been called 'think aloud problem-solving' (King, 1989).

Research in this area has shown that structuring discussion can be beneficial. Yager (1985) studied the effects of structured oral discussion which included students being randomly assigned the role of 'learning leader' or 'learning listener'. The leader had to restate and summarise the main points of the lesson and the listener had to ask probing questions, encouraging better explanations. When compared with unstructured groups, the structured groups did significantly better on a unit test and later retention of material. This is similar to reciprocal teaching developed by Brown and Palinscar (1986) which structures interaction with questioning, clarifying, summarising and predicting. Here the pupils were given the role of teacher after 10 days of reciprocal teaching instruction, and working with groups independent of the teacher, made considerable gains compared to pupils working in traditional teaching situations. Structured oral discussion appears to be predicated on the nature of the task: such as, the recall of material; understanding of reading matter, or application of procedures in a routine way.

Controversy research (Johnson and Johnson, 1985) shows how procedures such as having pupils argue different positions on a topic and being assigned group roles can foster high level discussion. When the group is working on open-ended problems, the use of roles in groups can also foster interaction. Zack (1988) showed that the use of a facilitator role was associated with increased talking and working together on problems in maths and science. Cohen, Lotan and Leechor, (1989) used the role of the reporter whose job was to encourage the group to think and talk together and to create answers on the specific form. This showed a greater amount of interaction when the reporter role was used. Cohen describes the teacher's dilemma resulting from the above:

'If teachers do nothing to structure the level of interaction, they may well find that students stick to a most concrete mode of interaction. If they do too much to structure the interaction, they may prevent the students from thinking for themselves and thus gaining the benefits of the interaction.' (1994b:22)

The social construction of knowledge facilitated by talk requires specific skills. These are the subject of the next key theme found in research into CL.

2.5.3 Specific teaching of teamwork and communication skills

Gillies and Ashman, (1996) examined the necessary pupil skills for CL to be effective and where explicit training was given, found greater success. In addition, Gillies and Boyle (2005) found that when teachers were trained to use cooperative learning, including scaffolding children's discussions, they were able to model helpful interventions which were in turn used by pupils. This study provided evidence of methods of extending children's thinking and encouraged their involvement with tasks. Johnson and Johnson (2005) propose that every CL lesson is a lesson in social skills and supports conflict resolution, particularly where specific teaching in the latter is provided. The school thus becomes a microcosm of society, by having students work together cooperatively, embedding values of mutual support, which in turn supports consensual peace.

Veenman, Kenter and Post (2000) found that although cooperative learning was not commonly used in primary schools in Holland, research identified improved social benefits; improved self esteem; time on task and more positive attitudes to school subjects. However, implementation was not so successful if it did not include sufficient team work skills and:

'regularly reviewing the rules for effective cooperation is certainly needed for the cooperation to work well and particularly in the first years of implementing CL.' (2000:299)

Specific teaching of such skills is therefore an important factor in success of the use of CL.

2.5.4 The Nature of the Task

Examining studies of interaction, it is first important to ensure that the task lends itself to cooperative group work. Alongside this is the issue of motivating pupils to work as a group. Cohen (1994a) proposes that both goal and resource interdependence are necessary as neither alone will provide the group interaction.

Tasks need to be clearly designed so pupils are required to support each other in the process, as in STAD which also includes group rewards. Sharan *et al* (1984) compared Slavin's STAD and the Group Investigation method (Sharan, 1990) and found that the latter fosters more extensive interaction and better achievement. This is because groups are required to plan the task, divide the labour, collect and organize the information and then give elaborate presentations to the class. The key difference here is that the information is not given by the teacher; the pupils have to gather the information from a range of sources. The task stresses problem-solving skills. Nystrand, Gamoran and Heck (1991) also found that the nature of the tasks affects the interaction and where students are required to define a problem and engage in autonomous production of knowledge, it was more effective. Cohen posits the following hypothesis therefore:

'When the teaching objective is learning for understanding and involves higher order thinking, task arrangements and instructions that constrain and routinize interaction will be less productive than arrangements and instructions that foster maximum interaction, mutual exchange and elaborated discussions. (1994a: 20)

2.5.5 The Structure of Groups

The nature and construction of groups is a further issue and Cohen (1994a) cites the considerable research that shows the beneficial effects of heterogeneous groups on low-achieving students. Swing and Peterson (1982) found that in heterogeneous groups, students of low and high ability gained particularly. There is also evidence that lower achieving students benefited by interaction with higher achieving students when tasks demand higher order thinking. Tudge (1990) concluded that it was exposure to high-level reasoning that made a difference as to whether a student would learn from another of higher competence. Cohen concludes that:

'If the task is collaborative seatwork and if high-achieving students have the chance to give explanations, then heterogeneous groups will be especially beneficial for them.' She goes on to say 'the only result that seems to hold unconditionally is the benefit to the low achiever of being in a heterogeneous group as compared to a homogeneously lowachieving group.' (1994a:11).

A further meta-analysis has been produced by Lou, *et al* (1996) of 'within-class grouping' (1996). Lou *et al* set out to answer the following questions:

- 1. How much does placing students in small groups facilitate learning?
- 2. Which factors explain variability in findings?
- 3. Which type of grouping is best and under what conditions?

Lou *et al* identified over 500 studies on cooperative learning. The meta-analysis confirmed the positive effects of placing students in groups for learning; however the size of the effects varied. Variable findings could be accounted for due to the task, and the experience of the teacher. They found no evidence that one form of grouping was uniformly superior for promoting achievement of all students. Low ability students gained most from being placed in heterogeneous groups and in contrast average ability students gain most from being placed in homogeneous groups.

With regard to motivation of pupils Lou *et al* (1996) found it did not follow automatically when pupils are placed in groups and that it depended on other factors, such as assigning roles and ensuring all pupils contribute can support motivation. Smaller size teams of three to four also seemed to be most beneficial than larger groups. They also found CL, with outcome interdependence, helps facilitate small group learning as does teacher training and experience in small groups.

2.5.6 The Role of the Teacher

Research into the role of the teacher in CL highlights how profoundly CL differs from other methods of teaching. (Harwood, 1989) found the role changes when pupils are working in small groups, although the self-directed nature of talk disappears when the teacher is present with groups.

Ashman and Gillies (2003) summarise the benefits of the changing role of the teacher as:

'perhaps the greatest benefit of peer mediation derives from the type and level of interaction that occurs in a context in which the responsibility for learning does not rest solely with the teacher but is shared among teacher and students.' (2003:235).

The management of cooperative learning is also complex for the teacher, particularly if groups are working on different tasks. Delegating authority to allow children to solve problems showed that those classrooms that did so successfully had greatest learning gains (Cohen, Lotan & Leechor, 1989). In addition when cooperative learning tasks are problem-solving or discovery tasks, it is necessary for the teacher to avoid direct supervision and to ensure talking and working together within groups (Perrow, 1967). For many teachers this was difficult as there was a fear of loss of control of the class (Cohen and Intili, 1981) although the introduction of a system of self-monitoring by students helped, alongside roles in groups, and training in cooperative learning skills.

2.5.7 Intrinsic v Extrinsic Rewards

A method that teachers routinely use to manage children in the classroom is the use of rewards. Cohen summarises the controversy surrounding this issue when related to CL: 'no aspect of cooperative learning has been as controversial as the issue of giving rewards to groups on a competitive basis' (1994a:13). She goes to describe the ideological controversy over cooperation versus competition. This has been researched heavily by Slavin (1983a, 1983b, 1987a) who reviewed 41 studies that contrasted cooperative approaches and he came to the conclusion that: achievement is enhanced by cooperative learning when cooperating pupils are rewarded as a group, while each pupil is individually accountable for his or her learning (1983a). This was developed into the technique known as STAD (Student Team Achievement Divisions) where students take a test and receive an individual score. These are then averaged and a team score awarded. Certificates are awarded to the teams with the highest scores. A critique of Slavin's approach is that he compares STAD to non-cooperative approaches and not to different methods of CL. Bossert comments that 'Slavin has not clearly tested the value of group contingencies within the Student Team Learning methods.' (1988:233). Vedder (1985) was also highly critical of Slavin's review for this reason and for the fact that he counted as positive those results where only a minority of students Nevertheless Slavin identifies an important factor in motivating improved. individuals to interact in a group.

Cohen feels, however, that researchers should move on from:

'the fruitless debates about intrinsic and extrinsic rewards and goal and resource interdependence that have tied the field into theoretical and ideological knots for some time.' (1994a: 30)

Future research for Cohen should examine not so much forms of interdependence but the type of interaction each supports.

2.5.8 CL in the Early Years

Developing the use of CL with children in the early years is a more recent theme of research. Battistich and Watson (2003) discuss the paucity of research overall in this respect. Nevertheless they emphasise the importance of cooperative learning for promoting young children's social and emotional development and state:

'If children do not learn successful strategies for interacting with their peers, the classroom environment will be peppered with disruptions and academic learning is likely to be seriously undermined.' (2003:19)

In Johnson and Johnson's meta-analysis of 1989 over 500 studies were found but only four related to preschool children. However, the small body of research suggests that young children benefit from cooperative learning. Although positive outcomes were found, certain conditions were necessary for success: the classroom needs to be seen as a safe place for all pupils; the children possess the social skills necessary to interact with peers and a collaborative and trusting relationship with the teacher is established.

When using CL in the early years the following differences in its use need to be noted, (Battistich and Watson, 2003):

- Group size it is better to work in pairs (Watson *et al*, 1988).
- Level of teacher support and structuring of activities is higher

They also notes the following special considerations, however, overall analysis of research shows that these are elements required regardless of age:

- Direct instruction of social skills is required
- Careful observation by teachers is necessary
- Appropriate intervention by teachers is required
- Opportunities for reflection on success are also necessary

All of these aspects require effective assessment of pupils' progress to support the appropriate level of intervention and teaching of skills.

2.5.9 Assessment of CL

Research into methods of assessing group work (Ross and Rolheiser, 2003) has looked at assigning group grades. Evidence showed that group grades alone are not sufficient and it is better to combine individual scores plus bonus points for all members who reach a criterion.

Other issues included high ability students being exploited in heterogeneous groups. Robinson (1990) felt that this was the case. However, other studies found it beneficial to high ability students (Yackel *et al*, 1991) and Webb *et al* (1998) found that the performance of high ability students was not affected. It would seem that the evidence here is inconclusive.

Cohen *et al,* (2002) studied the assessment of the work of creative problemsolving groups in sixth grade social studies. Recognising the inherent difficulties of such assessment, and enabling students to demonstrate their understanding, they started from the basis that the quality of the interchange among the group members and the quality of the group product are clear indicators. They provided specific evaluation criteria for each group product which was shared with students. This enabled pupils to self-evaluate. The results showed that groups with criteria were more task-focused, had significantly superior products, and achieved a higher average score on written work (essay). They also found the study supported their original hypothesis that the use of self-assessment of the group, indicated by the extent of talk evaluating the product, was a direct predictor of the aggregate essay score. Cohen *et al* state:

'learning was not a matter of relevant academic knowledge that individuals brought to the group but came about through reciprocal exchange of ideas and through a willingness to be self-critical about what the group was creating.' (2002: 1064)

Important findings here relate to the level of clarity contained in the evaluation criteria; the role of the teacher in training the students to use the criteria, and the teacher modeling of the criteria when providing specific feedback to groups.

The foregoing themes are present key factors in effectively using CL in the classroom, but before analysing the impact of these themes further, it is also enlightening to summarise other more recent findings.

2.6 CL in teacher education

Perhaps no better way of ensuring the use of CL in schools is to model it when training teachers. Two papers presented at the IASCE 2004 conference showed positive responses to the use of CL in teacher education. Chan (2004) found the constraints of time on a Post Graduate Diploma in teacher education in Hong Kong impacted on success, however adaptations for the specific

cultural setting were suggested. Waterworth and Duangpaeng's (2004) joint paper presenting results in Australia and Thailand showed very similar responses in spite of very different cultural contexts. They comment:

'We would suggest therefore that there may be elements in cooperative learning processes which promote human tolerance and mutuality which transcend geographical location and cultural environment and provide ideals in teaching which might be sought in a large variety of learning settings'. (2004: 15)

They conclude that there may be some common themes which apply to the use of cooperative learning strategies for adult learners:

- the cooperative task should be demanding, new, yet achievable
- groups should be hetereogenous
- the model of cooperative learning should be simple because of the limited amount of time available for classes
- there needs to be time allowed to establish a sense of cohesion
- time should be given to practise group processes, team building skills and cooperative social skills
- the tasks should demand the sharing of responsibility so that group and individual learning goals are met in a collaborative way.

Cohen, Brody and Sapon-Shevin (2004) have examined the issue of teacher education in ten institutions in the USA, Canada and Germany where it has incorporated CL. Areas of best practice are highlighted and challenges for the future. They summarise the following key points, many of which echo the findings of Waterworth and Duangpaeng (2004):

• Teachers need to be skilled in constructing student tasks that are interdependent.

- Further research is needed to examine the nature of the curriculum that is taught.
- Understanding of the teacher's role when using CL is necessary, which avoids the 'tendency to micromanage' (2004: 218) and instead 'trusts the process' (2004:219).
- The challenge of high-stakes testing which can lead to a 'dangerous erosion of the ability of teachers to be thoughtful decision makers about their own students' (2004: 219). They state that 'many of the gains achieved through cooperative learning may be lost when teachers teach to the test they themselves did not design' (ibid).
- The use of cooperative learning heterogeneous groups supports diversity and the frequent practice of ability grouping can be detrimental.
- The provision of adequate debriefing, or evaluation of the cooperative learning process is vital to its growth and Cohen *et al* (2004: 221) comment:

'Sophisticated debriefing skills go far beyond making sure that each group got the 'same right answer' and will require teaching specific ways of asking questions, checking for understanding, challenging discrepancies, and reconciling differences.'

These findings using CL in teacher education resonate with issues using CL with pupils.

2.7 Cooperative Learning in the UK

The importance of assessing the context for the use of CL requires a more in depth discussion of key research in the UK. An extensive ERSC funded project in the UK, entitled 'SPRinG' (Social Pedagogic Research into Grouping) (Blatchford *et al*, 2003) was developed to address the gap between the potential

of group work to influence learning, motivation and attitudes to learning and relationships, on the one hand, and the limited use of group work in schools in the UK, on the other hand. They state in the end of award report (2005: 33) that 'as far as we are aware this is the first study of group-work in the UK to show positive achievement gains in comparison to other forms of classroom pedagogy.'

The SPRinG project involves a framework with four key dimensions:

- 1. The classroom context: preparing the classroom and the groups
- 2. Interactions between children: preparing and developing pupil skills
- 3. The teacher's role: preparing adults for working with groups
- 4. Tasks: preparing the lessons and group work activities (2003:163)

This large-scale project over four years, at three sites around the UK and consisting of five phases, showed overall that the project had positive effects on pupils' academic progress. Particular findings that have relevance for replicating such group work are:

- 1. The classroom context:
 - Seating arrangements impact on group work and it is important to consider the physical layout of the classroom, allowing for flexible seating.
 - The size of the groups needs to be appropriate to the age and experience of the pupils and be manageable for the teacher.
 - The composition of groups needs careful consideration, preferably mixed ability.

- The number of the groups in the class should consider demands that may be made on the teacher.
- Group stability was shown to be a crucial aspect of successful group work and it is important to allow time to build up trust and mutual respect.
- Group composition: including children in decisions about groups can be helpful.
- 2. Interactions between children
 - The importance of developing group work skills, such as listening, explaining and sharing ideas is emphasized with a clear programme of teaching the skills needed.
- 3. The teacher's role
 - Training should provide freedom for teachers to adapt grouping strategies.
 - Teachers should try and make group work fun and thus lower the risk for pupils.
 - The teacher's role is to scaffold the group work.
 - Lessons needs to be carefully structured carefully to facilitate group work and should include briefing and debriefing to enhance reflection and help develop skills.
- 4. Tasks
 - Consideration needs to be given to the relationship between the task and the quality of group interaction is important.
 - Group work tasks can be applied across the curriculum

Blatchford *et al* (2005) point out further areas for research which could identify whether it is training in social and group work skills that support successful group work, or whether it is principled and practical strategies suggested by the programme. Two other areas for research are identified as; the role and impact of support staff on pupils' learning in groups; and how to include training in group work during initial teacher training, particularly on one-year Post Graduate Certificate in Education (PGCE) courses, where time is very limited. The author's research with PGCE trainees indicates that this is facilitated by some direct teaching on the principles and methods, followed by modeling of the techniques with trainees in sessions. Setting up school-based cooperative tasks can also prove beneficial.

Blatchford et al conclude (2003: 169):

'We end by noting that group work and co-learning may well become more important in the future. The classroom of the future is often portrayed in terms of a sterile shiny floor space with impressive futuristic hardware, or in terms of individual learners at a computer connected at a distance to electronic forms of information. Pervasive as these images are they miss an essential feature of what learning is about—which is likely to be as true for the future as it is now—that is, the interactions and relationships within which learning takes place.'

A further linked area of research in the UK has been undertaken on 'peer

learning' (Topping, 2005). This is defined as:

'the acquisition of knowledge and skill through active helping and supporting among status equals or matched companions. It involves people from similar social groupings who are not professional teachers helping each other to learn and learning themselves by so doing' (Topping, 2005: 631).

Topping points out that the longest established and most intensively researched forms of peer learning is 'peer *tutoring*' and *'cooperative learning'*. Cooperative learning is therefore regarded as another form of peer learning and Topping states that CL is distinguished by 'the specification of goals, tasks, resources, roles and rewards by the teacher, who facilitates or more firmly guides the interaction process' (2005:632). Topping describes a number of organisational variables relating to such factors as curriculum content, school structure, age of pupils, time allocation and place. He also sets out organisational factors that need to be considered to ensure effectiveness. Both CL and peer learning, Topping claims, have been shown to 'yield significant gains in academic achievement' (2005: 635) and 'can simultaneously yield gains in transferable social and communication skills and in affective functioning'.

Topping's work on peer learning dates back to 1987 and has looked at the application in different areas of the curriculum; in paired reading (1987); in science (1998a) and maths (Topping and Bamford,1998), whilst also examining issues in further and higher education (1996, 1998b). Topping (2005:643) summarises the benefits as:

'Not only do helpers learn the subject better and deeper, but they also learn transferable skills in helping, cooperation, listening and communication. PL (peer learning) encourages personal and social development. All of this influences the school ethos, developing a cultural norm of helping and caring. PL can contribute to a sense of cohesive community.'

2.8 Common Themes – Practical Implications

The previous review of research findings presented some overall practical implications for implementation in the classroom, which are reviewed in the context of this research study. These implications are summarised below, together with a further area which has emerged from the SPRinG project, related to the impact of the physical layout of the classroom.

- The level of interdependence is related to the success of CL. Goal interdependence is particularly important, with resource interdependence also contributing to a lesser degree (Johnson *et al*, 1990). Teachers should therefore:
 - Structure tasks to incorporate goal interdependence (pupils can only achieve the goal jointly)
 - Include, where appropriate resource interdependence (sharing of resources in groups)
 - Consider the use of group roles
- The nature of talk or interaction is related to the level of skill in giving explanations, utilising controversy and general discourse (Chang & Wells, 1987, Cohen, 1994a, Cohen *et al*, 1999). It is therefore necessary to provide:
 - Clear teaching in structuring and giving explanations
 - Provide opportunities for discussion of differing viewpoints
- 3. The nature of the task impacts on the success of CL and more openended tasks are more appropriate together with the sharing of resources Cohen, 1994a). It is thus important to:
 - Structure tasks appropriately
 - Include open-ended tasks where possible
- 4. The nature and structure of a group impacts on the success including the mix of ability, gender, race and status, with the teacher needing to

ensure that low-status pupils are supported and pupil diversity celebrated (Cohen, 1994a, Blatchford *et al,* 2003). Teachers should therefore consider:

- The nature of groupings
- Provide heterogeneous groups where possible
- The need for sufficient teaching of teamwork and communication skills to pupils (Veenman, Kenter & Post, 2000, Gillies, 1996, Blatchford *et al* (2003). Teachers should ensure:
 - A clear programme of explicit teaching of small group and interpersonal skills
- 6. The use of group rewards alone is unproven in supporting pupil motivation (Cohen, 1994a, Bossert, 1988). Teachers should thus:
 - Avoid exclusive use of group rewards
 - Provide positive interdependence to promote intrinsic motivation
 - Ensure team cohesion
- The role of the teacher in managing the class for CL groups requires delegating authority to the groups with careful monitoring (Cohen, Lotan and Leechor, 1989). Teachers therefore provide:
 - Clear guidance to groups on tasks and behaviours provided
 - Monitoring to ensure on task and cooperative group skills displayed

- Beginning the use of CL with young children is beneficial (Battistich & Watson, 2003). It is therefore important to:
 - Begin training in group skills in the early years
 - Progress from paired work and gradually develop to small group work
- Physical layout of the classroom needs careful consideration, (Blatchford *et al* (2003). Thus teachers should ensure:
 - Seating for group work needs to facilitate talk.
- Provision of clear success criteria for cooperative group work, Cohen (2002). Therefore teachers need to:
 - Share success criteria for cooperative group work in addition to academic tasks.

2.9 Implementing Cooperative learning

The preceding discussion has highlighted the issue of a wealth of research into CL, but a lack of actual use in some contexts. This is primarily related to implementation. As Bennett states:

'Although co-operative grouping has a respectable theoretical pedigree, the effectiveness of which is backed up by the systematic research, very few studies have considered how best to put it into practice in classrooms.' (Bennett, 1994: 60)

This lack of research into implementing CL has, however, begun to be remedied. Research reveals two recurrent themes in successful implementation: specific teaching of the necessary interpersonal and small

group skills; and supporting teachers in implementing CL. The following section reviews the research in more detail.

2.9.1 Teaching interpersonal and small group skills

Robyn Gillies has researched the issues of implementation and from a review of five studies found:

'The importance of explicitly structuring cooperative small-group work in classrooms if children are to derive the benefits widely attributed to this pedagogical practice.' (Gillies, 2003: 35)

Each study reviewed provided support to schools in implementation, including procedures in putting pupils in groups, training pupils in small group skills, topics to be covered, resources available and the data collection procedures. Teachers were then trained in the process and they then set up cooperative learning groups in their classrooms.

Pupils worked in mixed ability and gender-balanced groups of three to four members. All groups were video-taped in the final two weeks of each unit of work and these were coded for student behaviour (cooperation, noncooperation, individual task-orientated, or individual off-task behaviour), verbal interactions and for some studies the cognitive strategies used.

This showed that children in the structured groups (those where there was task interdependence and the children were trained to cooperate) showed more cooperative behaviour, and were less likely to work independently. Verbal interactions showed that in three of the studies, unsolicited explanations increased over time in the structured groups. The learning outcomes analysed in two of the studies showed that the children in the structured groups used a wide range of strategies (such as using more concrete examples to make an idea more explicit or provided more detailed explanations).

Swing and Peterson (1982) experimented with training in task-related interaction and improving explaining skills showing that trained groups produced higher rates of interaction with higher order explanations. Lew, Mesch, Johnson and Johnson (1986) also trained students in skills of sharing ideas and information, keeping the group on task, praising and encouraging the contributions of others and checking to make sure everyone understood what was being taught. The teacher awarded bonus points if groups showed three out of four cooperative skills. Both the training and reward was necessary before this showed greater achievement.

Giving pupils specific feedback and asking them to reflect on the group's performance also shows good results (Johnson, Johnson and Stanne, 1990). This feature is also present in the Group Investigation method. The need for specificity in feedback is shown by Huber and Eppler (1990) where lack of specific criteria for evaluating performance showed that feedback had no effect on achievement. In summary either pre-training or processing of the group while they are working can be effective in improving performance.

Webb and Mastergeorge, (2003) found three aspects to be important in developing pupils helping behaviour for CL. The first related to developing pupils ability to ask precise questions that show what aspect of a problem they

do or do not understand. The second is that pupils must be persistent in asking for help from peers until they are satisfied. Third, once an explanation is clear, pupils need to apply it.

Gillies and Ashman (1996) found that children who were given explicit training in the skills of cooperative learning were more successful. These children used language that was more inclusive of others, gave more detailed explanations to assist each other, and obtained higher learning outcomes than those in untrained groups. Two types of skills teaching were found to be necessary: firstly interpersonal skills that support communication and secondly small group skills that support full participation.

Johnson and Johnson (1996) also found that pupils who were trained in conflict resolution and peer mediation applied these skills to classroom and nonclassroom situations. It was also found that young children of pre-school age could also learn these skills (Stevahn *et al*, 2000).

Fuchs *et al* (1997) studied 40 primary classrooms where children were randomly assigned to one of three conditions: peer mediated instruction and training how to offer and received elaborated help, peer mediated instruction with training in elaborated help and in how to provide conceptual mathematical explanations and no peer mediated help. Children who had received trained in elaborated help and how to give conceptual explanations asked more relevant questions, provided more explanations and the achievement of this group was

higher. This study showed not only the benefit of training but also the more explicit the training, the higher the achievement gains.

2.9.2 Supporting Teachers in Implementing CL

Another key factor in successful implementation concerns training teachers in the procedures necessary to implement cooperative small-group learning. Lou *et al* (2000) found that when teachers were trained this way, they were more able to adapt their teaching to small group instruction and achieve success. As Gillies says (2003:41):

'Research, indicates clearly that both students and teachers need to be trained to manage the demands of small group work effectively. Students need explicit training in the interpersonal and small group skills that facilitate co-operation and helping, and teachers need to be trained in the strategies required to implement and manage small groups.'

Abrami, *et al*, (2004) examined the reasons for teacher resistance to implementing cooperative learning. The nature of teachers' concerns was examined through a questionnaire grouped under three main headings: perceived value of the innovation; expectancy of success; and perceived cost. This was administered to 933 teachers in Montreal in Canada in schools where the use of CL was encouraged. The study found that expectancy of success appeared to be most important factor in differentiating CL users from non-users. It also showed that teachers need to believe that they have the skill to implement CL successfully as well as a suitable context.

One case study in an inner city school in the USA (Nath *et al,* 1996) proves particularly enlightening. This study examined the implementation of the STAD

method in an elementary school with nine teachers over a period of one year. Factors that were found to be necessary to implement CL effectively were:

- 1. Teachers need to be well trained in the philosophy of cooperative learning and they need a teacher leader or facilitator with whom they can consult about issues and concerns
- 2. Administrative support must be provided.
- Group meetings amongst teachers must be arranged for support and to exchange ideas.
- Teachers should be allowed time and experience to become comfortable with CL.
- 5. In the early stages of implementation, teachers should be allowed to form small teams of two or three pupils until the pupils learn the necessary skills to cooperate in larger groups.

These factors concur with the author's own experience at supporting the implementation of CL in a networked learning community of twelve primary schools and two secondary schools in an inner-city area of the north of England (Jolliffe and Hutchinson, 2007). This showed that particular issues relating to effective implementation concerned:

- 1. The vital role of a key member of staff (facilitator), provided with time to support, train and monitor the use of CL.
- Support to facilitators from networking of schools and particularly cluster meetings to share progress and resources.
- 3. Facilitator expertise and action research impacted on effective implementation.

- 4. The effectiveness of providing a mixture of external training and support, in initial stages, followed by in-house support through the facilitator as well as peer support.
- 5. Training that incorporated explicit modelling of strategies was more effective.
- 6. Identification of skills for CL and phased implementation through the school development plan and medium term plans supported its use.
- Involvement of pupils in target setting for CL skills using assessment for learning principles.
- 8. Peer coaching following training using clear guidance proforma.
- 9. Progress required a whole school commitment to CL.

The foregoing research reveals the need for a carefully staged programme in implementing CL effectively in the classroom. Firstly, an understanding by teachers of what makes learning truly cooperative (Lou *et al*, 2000, Gillies, 2003, Johnson and Johnson, 1996), together with a commitment to implement it (Abrami, *et al*, 2004). Secondly, a programme of teaching of the necessary skills to pupils (Gillies and Ashman, 1996, Blatchford *et al*, 2003, Stevahn *et al*, 2000) and applying these skills to appropriate tasks (Cohen, 1994a, Gillies and Ashman, 1998). To do this, teachers will require a range of expert and peer support (Nath *et al*, 1996, Gillies, 2003, Jolliffe and Hutchinson, 2007).

Conclusion

This chapter has examined the history and development of CL. It has presented a synthesis of research into CL; showing its benefits, its many forms, ranging across different cultural settings. It has also elicited a lack of application of CL in the classroom in spite of the data into its benefits. Previous research has focused on comparing different types of CL, based on fierce ideological debates about intrinsic or extrinsic reward, or on the nature of the task and resulting interaction. It is the more recent work on implementation of CL that begins to illuminate the necessary factors for it to be effective. Gillies work (1996, 2003) has focused on the issue of implementation and here lies fertile ground for further research, particularly in the UK. This has made headway with SPRinG project (Blatchford *et al*, 2003, 2005). Baines, Blatchford & Kutnick (2003) research in the UK of 331 primary schools and 248 year 7 and year 10 classes in 47 secondary schools showed that there were changes in pupil groupings according to age with secondary age children more likely to engage in peer interaction than primary children. Nevertheless a rather dismal picture persists:

'Our findings suggest that though children mostly sit in small groups, peer interaction for learning is rare in primary classrooms.' (Baines *et al*, 2003:30)

The author's research shows that in the UK there are clusters of schools that are developing cooperative learning, but this is dependent upon the support offered to teachers to implement it. Nevertheless as Baines *et* al (2003) highlight little has changed since the findings by Galton *et al*, in 1980, showing that real interaction amongst pupils in groups is rare. In the next chapter the impact of significant changes in educational policy in the UK will be examined, in order to examine fully why cooperative learning is not used more widely.

Chapter 3: The English Context: lacking the will or the skill to implement cooperative learning

Introduction

The previous chapter's review of research into cooperative learning found that in the UK pupils working together cooperatively is a relatively rare phenomenon. This is a surprising finding set against the background of a wealth of research into its benefits over the last thirty or more years, and the growth in the use of cooperative learning around the world. The aim of this chapter, therefore, is to ascertain why, particularly in the UK. As the complexities of devolution of Scotland and Wales have led to very different education systems; this chapter will focus on England.

A review of the large scale educational changes in England principally since the 1988 Education Reform Act, presents a picture of teachers working in a climate of significant change. This chapter will review the three key aspects of education: curriculum, assessment and pedagogy as conceptualised by Bernstein (1975, 1990 and 1996) and show that in a climate of heavy accountability and high stakes testing there is a strong danger that teachers become 'curriculum deliverers' and not facilitators of learning. Effective cooperative learning requires teachers to aim for the latter. This is not easy, in an educational context of a drive to improve standards of literacy and mathematics, and little leeway for innovation. As the chapter will show, the impact is that the emphasis has been for teachers to deliver a prescribed

curriculum in literacy and mathematics, without a real understanding of how to provide the conditions for learning. It is a story of deficit pedagogy.

This chapter will begin by reviewing the impact of changes in the curriculum in England over the past twenty or more years. It will include a synthesis of a range of large-scale research studies, including the ORACLE study (Observational Research and Classroom Learning Evaluation), (Galton, *et al*, 1980, 1999), Alexander, 1991, 1995 and 2000), Webb (1993) and Webb and Vulliamy (2006), Hargreaves *et al.* (2003), and more latterly, the report on the impact of curriculum reform and assessment for the Primary Review by Wyse *et al* (2008), together with the Independent Review of the Primary Curriculum led by Sir Jim Rose (DCSF 2009).

Alongside a review of curriculum, the far reaching changes in assessment will also be explored. The Primary Assessment, Curriculum and Experience (PACE) project which took place over eight years from 1989-1997 is hugely informative in providing extensive longitudinal data of the impact of assessment on curriculum and pedagogy. These studies will in turn inform the crucial aspect of this chapter: the impact on pedagogy, to help explain why cooperative learning has largely been ignored. Implementing large-scale changes in curriculum, assessment and pedagogy requires training and support for teachers. The chapter will therefore conclude with a review of research into effective continuing professional development. This will help shed light on how teachers have been supported in continuing to develop their expertise, to ascertain whether this in turn has impacted on introducing cooperative learning. In

summary, the chapter will seek to answer the question of whether teachers have the will or the skill to implement cooperative learning in an age of accountability and increased pedagogic prescription.

3.1 Curriculum Change

A major milestone in education in the UK in the twentieth century was the 1944 Education Act. Yet this hugely significant piece of legislation which established greater control by the state, was concerned with systems and not with the curriculum: setting up a Ministry of Education and Local Education Authorities (LEAs), universal free entitlement and the organisation of education into three stages: primary, secondary and further education. Indeed, the only specification contained in the 1944 Act regarding the content of education was concerned with religious education.

It was not until 1988 that the state began to have any real say in the content of education, in contrast to a large number of other countries in Europe and worldwide. Indeed, previously England was amongst the most decentralised education systems in the world, and from the 1950s to the 1970s schools in England enjoyed considerable autonomy to decide what they would teach. In 1960 one government Minister, David Eccles, talked of the '*secret garden of curriculum*' (cited in Alexander, 2000: 549). Governments of the day issued guidance through pamphlets and circulars, rather than directives through legislation. Since the abolition of the 11 plus test in the early 1960s, in most Local Authorities, primary schools had a particular sense of freedom. This was generally seen a *child-centred* and was heavily influenced by the Plowden

Report on Primary Education (1967) which opened with what became a much quoted sentence '*At the heart of the educational process lies the child*' (p.7). The key elements of the Report were: child-centredness; the school as a micro-community; individualisation; learning by discovery and experience; an integrated curriculum as opposed to traditional subjects; creativity and the learning potential for play. There is much that might profitably be returned to today, and to an extent, it is reflected in the '*every child matters*' agenda which has the aim that '*every child and young person has the potential to fulfil their potential, and no child slips through the net.*' (DfES, 2004c:5). As this chapter will explore, there the similarity ends.

The Plowden Report marked the culmination of an era of autonomy, but criticisms of its progressive nature grew. What became know as 'the Black Papers' (Cox and Dyson, 1970) which opposed the fundamental assumptions of the Report, centred on two aspects. Firstly, the notion that the purpose of education was to support children realising their inborn qualities and potential, with the role of the teacher being to support this. Secondly, the emphasis on the individual child was regarded as unrealistic, making it impossible for the teacher to manage and cater for thirty or more individual needs. Criticism of the 'child centred' approach also stemmed from dissatisfaction from government ministers that schools had too much autonomy and too little accountability. In an era of economic recession, education became the scapegoat, and primary schools were regarded as '*anarchic*' and *'neglecting to teach the basics'* (Alexander, 2000:140). This in turn led to a move for far greater government control.

The 1988 Education Reform Act brought in by the Thatcher Government gave the Secretary of State for Education over 100 new powers to control education, and has been described by Osborn *et al* (2000: 3) as *'the most radical education legislation in half a century, and a decade of unremitting change followed it.'* There were three main elements which formed the linchpin of the move to increased state control of every aspect of education:

- 1. The National Curriculum (NC)
- Local Management of Schools which gave schools greater control over their own budgets and to give schools governing bodies' enhanced control over the day-to-day arrangements of the school.
- 3. Grant Maintained Schools which could opt out of Local Education Authority control completely and receive their funding direct from the Government. This process was extended further with the White Paper *Choice and Diversity* (1992) which enabled the development of specialist schools and colleges.

Whilst the act itself contained little detail with regard to the curriculum; the latter was put together by subject groups, which led to a lack of cohesion and to teachers being given far too detailed curriculum guidance. This was later reduced to more manageable proportions in 1995 as a result of the Dearing review, but the principle of a state controlled curriculum remained.

The central driver for the National Curriculum was a concern with standards in education in England compared to other countries, and in order to compete in the global marketplace, these standards needed to be improved: principally what has been termed 'basic skills' of literacy and numeracy. This was in line with the common political cry at the time: to return to the 'basics'. The NC also began the process of a division of the curriculum into two areas; first the basic skills of literacy and numeracy and second the 'rest', or creativity, languages strategy, physical education and sport, music, etc. As a backlash from the Plowden era, the curriculum became one of 'strong classification' in Bernstein's terms, (1973): highly differentiated into traditional subjects, rather than integrated. It was surprising that such a contrasting view of the curriculum embodied in the NC received so little debate from the teaching profession.

Centralised control over the curriculum was policed by the setting up of the replacement of Her Majesty's Inspectorate of Schools, by OfSTED (Office for Standards in Education) brought about by the 1992 Education (Schools) Act. Following this, in 1993, the Education Act, (the longest education legislation in the twentieth century) affirmed the power of the Secretary of State with particular emphasis on improving standards and the power to intervene where OfSTED judged schools to be under-performing.

Far greater prescription over the curriculum however, was introduced by the New Labour Government in 1997. This was in the form of the National Literacy Strategy, implemented in 1998 in Key Stages 1 and 2 and in the following year the National Numeracy Strategy. This was followed in 2001-2003 by the National Strategy for Key Stage 3. These strategies set out not only the content to be taught in Literacy and Mathematics, but also the methods of teaching. The prime aim was 'modernisation' (Giddens, 2000), which entailed responding to the demands of globalisation and of the knowledge economy. It was

therefore viewed as imperative that education was placed at the fore to meet those needs. Whilst this presents many similarities with the previous Conservative Government, Furlong (2005) summarises the two key aspects that distinguished New Labour from the previous government:

Raising educational standards has been one of the government's key priorities because at one and the same time education is seen as being able to create economic growth in the flexible, knowledge-based economies of the twenty-first century, and to promote social inclusion by creating pathways out of poverty. (Furlong, 2005: 123)

The Literacy and Numeracy Strategies were not statutory, unlike the National Curriculum. However, the pressure of OfSTED led to the large majority of schools adopting them, rather than providing rigorous proof that any alternative was better. The underlying basis for these strategies and the teaching methods they stipulated, have been criticised as being based on a '*questionable evidence base*' (Wyse *et al* 2008: 15, Alexander, 2004a and Brown *et al*, 2003). One of the key features of the Literacy and Numeracy Strategies has been the organisation of learning as a sequence of teaching objectives, although these have been slimmed down in the revised Framework (2006). The rationale for the organisation of learning in this way however, was not clarified at the outset. It is ironic, that as will be discussed later, under the section on the impact on pedagogy, that it is only in the later years of the National Strategies that such an underlying rationale has been clarified.

The highly political stakes placed on education are reflected in the level of Government funding. From 1997-2005 the costs for the National Literacy Strategy alone were estimated at £597.25 million (Tymms and Merrill, 2007). By 2009, costs were in the region of £100 million per year. OfSTED's report in

2002 of the first four years of the National Literacy Strategy found improvements in standards attained in English, although the Government's target of 80 per cent achieving at least level 4 in English at year 6 in the 2002 national tests were not met. It also found weaknesses in leadership by headteachers in one in ten schools and a widening gap in the achievement of boys and girls, with girls consistently outperforming boys. Nevertheless, from 1995 in Key Stage 2 SATs results for English increased from 48 per cent of pupils achieving the expected Level 4 to 75 per cent in 2000. Results seemed to plateau from 2003 until 2003 and then have increased to 81 per cent achieving Level 4 in English, in 2008. Claims of success in terms of rising standards are questioned, however, (Torrance, 2003, Tymms and Merrill, 2007, Meadows et al 2007). Using 11 different studies, Tymms and Merrill, 2007 found that the results produced by QCA had been 'exaggerated' (2007: 18) and furthermore the data collated from six authorities by Massey et al (2003) concluded that the rise in reading had been 'illusory'. Since then, however, a steady increase has provided evidence of improvement.

One international study, however, did provide evidence of progress in England. The Progress in International Reading Literacy Study (PIRLS) 2001, (Mullis *et al*, 2003) examined reading results for 9 year-old children and placed England as third in the rankings. This was a much publicised result. However, closer examination reveals that a long tail of underachievement which had been previously highlighted by (Brooks, 1996) continued, as in other English speaking countries, indicating fundamental difficulties for some children in learning to read English. The second study in 2006 (Twist, Schagen and Hodgson, 2007) found a significant reduction in reading ability overall when compared to 40 other countries, showing England as fifteenth and having one of the highest falls in results. There was also a continuation of the spread between the highest achievers and the lowest. The results have been the subject of further research to ascertain whether there were any discrepancies between the 2001 and 2006 test measures, and findings to date indicate a less significant reduction. Nevertheless, the picture of falling standards in reading in England remains, with pupils' attitudes to reading being poor compared with many other countries.

The Government has as a core aspect of the White Paper' Building a 21st Century School system' (DCSF, 2009b) a commitment to 'narrow the gap' with a 'pupil guarantee' which includes support for pupils who are falling behind their peers with intervention strategies. In addition, intervention programmes such as one-to-one tuition, 'Every Child a Reader', 'Every Child a Talker', 'Every Child a Writer' and 'Every Child Counts' are all aimed at redressing the tail of underachievement with a clear aim to target those children who are struggling and provide them with intensive one-to-one support. Evaluation of these projects, such as the 'Every Child a Reader' programme, which is based on the reading recovery approach of Marie Clay (1991), shows that pupils are making a sustained improvement. Such programmes present a significant shift in government policy: from a national prescriptive curriculum to individualised personalised support. Such policies require high levels of funding and in the economic climate of 2010, it is clear that hard choices have to be made, underpinned by a political will.
The period of the Labour Government from 1997 to 2010 has had a considerable impact on the educational landscape of this country. Whilst one might sum up such developments in terms of a continuing drive for greater prescription of the curriculum, leaving little time for innovation, there have been developments in supporting greater pedagogic understanding by teachers. However, in primary schools, in particular, it seems it is too little, too late.

3.2 Accountability and Assessment

As stated previously, one of the principal vehicles for checking on schools' adherence to the National Curriculum and National Strategies was the creation of OfSTED and the inspection regime. However, perhaps a far more far-reaching measure by the state was the introduction of the system of national testing or Standard Assessment tasks (SATs). This was introduced in 1988 as part of the Education Reform Act, although the original aim was to provide formative and diagnostic assessment to support teaching. In spite of this intention, the formative purpose of assessment was replaced by a summative measure of performance and the use of national assessment results became a measure of school standards. The publication of these results in 'league tables' of schools and LEAs led to an increasing reliance on rigorously controlled tests, principally of a paper and pencil type.

Assessment prior to 1988 was largely intuitive and continuous with the purpose of providing instructional feedback and encouragement to pupils. Thus the requirements of 1988 Act were met with resistance and required an increased repertoire, including diagnostic and formative assessment as well as summative and evaluative assessment. As McNess et al (2001: 10) state:

'Thus the initial dislike of the new requirements was not due simply to the increased workload or the need for additional skills which some did not possess. It had as much to do with the fact that the coercive power of the law had been used to impose on teachers an obligation to operationalise a different set of understandings concerning the role of assessment in helping children to learn and develop.'

Two key underlying issues were thus exposed. One was the role of assessment, either to inform teaching; or to provide a measure of success of pupils or schools. The second was the impact on the curriculum, so that teaching was designed to maximise test performance.

A major longitudinal study to monitor the impact of the 1988 Educational Reform Act, the *Primary Assessment, Curriculum and Experience* (PACE) project was established in 1989 and ran until 1997 to monitor the impact the NC and assessment arrangements on curriculum and pedagogy.

The PACE project was funded in three parts by the Economic and Social Research Council. PACE 1 looked at the impact on headteachers class teachers and pupils at Key Stage 1 (Pollard *et al*, 1994). PACE 2 at the impact on the lower Key Stage 2 (Croll, 1996) and PACE 3 collected data on upper Key Stage 2 (Osborn *et al*, 2000, Pollard *et al*, 2000). It provided extensive data over eight years using a representative sample of 48 schools in eight Local Authorities, based on observation in classrooms, questionnaires and semi-structured interviews.

The PACE study showed that teachers' attitudes changed as they became more practised in the procedures and showed a more positive response to a more structured approach. Teachers in Key Stage 2 in 1995 showed that the changing assessment practices had helped to identify clearer aims and provide more detailed knowledge of their pupils. In spite of these positive responses, however, the development of high stakes external testing was also shown to have a significant effect on classroom practice and on the primary curriculum. Key Stage 1 tests were viewed as less problematic as they were designed to resemble classroom tasks, but Key Stage 2 tests showed fundamental differences. Consisting of externally set pencil and paper tests taken by an entire cohort on prescribed days, and being marked externally, meant a divorce of testing to inform teaching and increased concern by pupils that they would 'fail' the tests. The impact on teaching was that whole-class teaching and individual pupil work increased at the expense of group work. There was also an increase in time spent on core subjects and little opportunity for other more creative subjects. A large extent of teaching time focused on revision and 'teaching to the test', as Harlen's report in the Primary Review series (2007) confirms (p21-22). Harlen and Deakin-Crick's (2002) review found evidence of the costs of high stakes testing. In particular they found:

'when passing tests is high stakes, teachers adopt a teaching style which emphasises transmission teaching of knowledge, thereby favouring those students who prefer to learn in this way and disadvantaging and lowering the self-esteem of those who prefer more active and creative learning experiences.' (2002:4)

Research by Boyle and Bragg (2006) showed that the dominance of literacy and mathematics of around half of curriculum time had continued and increased slightly in Key Stage 2. Thus the testing regime can be seen to be a major factor why teachers were even less inclined to try a different type of pedagogy: cooperative learning – they were far too much concerned with results, and thus traditional whole-class teaching to the test became increasingly the norm.

Notwithstanding the impact on teaching, high stakes testing also had a damaging impact on pupils' self-esteem. The PACE project found that children in upper Key Stage 2 had more negative feelings about having their work evaluated. The most frequently occurring word across all year groups was 'worried' (McNess, *et al*, 2001: 14). Research found that whilst some high achievers seemed to thrive on the tests, the less able or low attainers were demotivated and became dysfunctional due to the demands of SATs. Another factor was the increased awareness by children of the varying abilities of children in the class and a tendency to label others as 'bright' or 'thick'. As data from the PACE project shows:

'The pressure from a restricted but overloaded national curriculum, combined with 'high-stakes' national testing, appears to be diminishing the opportunities for teachers to work in a way that enables them to 'develop the whole child' and address the social concerns of the wider society" (Osborn et al., 2000, p.160).

In summary, the impact of such high stakes testing was far-reaching. It is ironic that precisely the tool used by government to measure and drive up standards encourages a performance view of the learner and the teacher. More recently changes in assessment through the introduction of the Assessment for Learning Strategy (DCSF, 2008) have indicated a change in direction and a 'new conversation about assessment' (QCA, 2008). This highlights the need to invest in teachers' professional skills of assessment through training and

moderation processes, and thus move from an emphasis on testing as the means of providing evidence of national standards. The Assessment for Learning Strategy (DCSF, 2008) sets out a three-year programme of support to schools to ensure that both assessment for learning practices are embedded in schools, and also that assessing pupils' progress procedures, for periodically providing a picture of a child's achievements and next steps in his/her learning, are in place. This includes considerable funding to schools to support this: £50 million in 2009 alone. These are therefore significant and potentially farreaching changes in assessment. Such changes will inevitably require ongoing support for schools and with the demise of the National Strategies, one may question whether they will become embedded, and of course, whether a future government will have the political will to implement them.

The Impact on Pedagogy

Chapter 1 touched on aspects of pedagogy in connection with a discussion of theories of learning. Here, the focus is on the impact of changing government policy on pedagogy. But it is first necessary to clarify what pedagogy means, particularly as not only teachers in England, but also those responsible for their training (the Training and Development Agency) seem unclear (Millett, 1999). The range of definitions is wide, from what Alexander calls the 'societally broad to the procedurally narrow' (2004a:9). Millett's (1999) pedagogical agenda of competence and excellence in teaching methods excludes any sense of how pedagogy connects with culture or society. In contrast Basil Bernstein (1990:63) saw pedagogy as a 'cultural relay' and placed it within a grand theory of social structure in which the concept of codes was central. Codes or regulative

principles underpin various message systems and curriculum and pedagogy are considered to be examples of such message systems, together with a third system, evaluation. All message systems have underlying values and assumptions and for Bernstein these are linked to notions of social structure and class and power relations. According to this wider and more sociological interpretation, notions of class value systems may impact. Thus if a majority of teachers have predominately middle class value systems, they may be excluding numbers of pupils from different social backgrounds and perpetuating social-class advantages in schooling. As Bernstein summarises (1973:85):

'Curriculum defines what counts as valid knowledge, pedagogy defines what counts as valid transmission of knowledge, and evaluation defines what counts as a valid realization of the knowledge on the part of the taught'.

This is a far more comprehensive construct than the narrow sense commonly used in England to denote the practice of teaching. This also contrasts to other countries where pedagogy and 'didactics' (general and specialist subject knowledge) are key aspects of teachers' training. Gage's (1978) and Simon's (1981) definitions of pedagogy are more commonly known: '*the science of the art of teaching'*. The 'science' consisting of general principles of teaching which are chosen to meet the specific needs of pupils and as Simon describes, it requires (1985: 99):

'Starting from what children have in common to establish general principles of teaching and in the light of these principles to determine what moderations of practice are needed to meet specific needs'.

The art of teaching, according to Gage (1981), requires the application of scientific pedagogical principles in a flexible way according to the needs of particular pupils. So, for example, some pupils may not respond well to whole-

class questioning and may avoid answering, requiring a range of teaching strategies. As Galton *et al* (1999) discuss, a theory of pedagogy requires the teacher not to just select from a repertoire of teaching styles such as wholeclass, group or individual, but to review such within a wider context. The process should start with a clear understanding of what is to be learned, then for the teacher to decide the most effective pedagogic principle for supporting this (such as direct instruction, individual or group problem solving, etc.) and finally to select the means to do this – such as whole-class, individual or group. Underpinning all of this is an understanding of theories of learning. Pedagogy is thus a very skilled and complex process.

The so called 'three wise men' report on teaching commissioned by the Conservative government on the upper years of primary school (Alexander, Rose and Woodhead, 1992) did not set out to illuminate the debate on pedagogy. The report criticised many elements of unsatisfactory practice at the time and recommended the emphasis on professional judgements with regard to decisions of pedagogy. Such decisions should be informed by a research base which would enable teachers to use the 'fitness for purpose' (cited in Alexander, 2000: 274) principle to guide classroom practice. This deceptively simple phrase: 'fitness for purpose' actually pinpoints key aspects of pedagogy and it is precisely this term that has been adopted by the National Strategies in 2009 (DCSF, 2009c).

It was not until 2004 that the National Strategies, under the Excellence and Enjoyment suite of professional development materials (DfES, 2004), provided

guidance on creating the conditions for learning and selecting appropriate pedagogical approaches. It stated that:

Pedagogy is thus informed by an understanding of working theories, knowledge of the social context of the learning and the practical 'craft' knowledge of teachers and practitioners. (DfES, 2004a: unit 4: 9)

It went on to set out three main pedagogic approaches: direct, inductive and exploratory and, acknowledging the importance of talk for learning, highlights the use of paired and group work. At the same time, professional development materials were produced for Secondary schools '*Pedagogy and Practice:* Teaching and Learning in Secondary Schools' (DfES, 2004b). These units of work included one (Unit 10) on supporting the development of group work. It specifically promotes the benefits of group work and provides guidance to teachers in implementing it. It also provides a summary of the research into

effective group work, stating

'It is important to acknowledge that there is firm evidence that cooperative groupwork is effective in improving attainment compared with pupils working alone, Johnson and Johnson, 1999'. (DfES, 2004b:21)

Whilst acknowledging the benefits, these materials state that cooperative group work is uncommon:

'In other countries such as the United Kingdom this method is still underused, however. In a recent study in primary schools Muijs and Reynolds (2001) found that less than 10% of lesson time was spent doing group work.' (DfES, 2004b:21)

This guidance acknowledges that in order to implement successful group work, it requires a '*significant amount of preparation*' (DfES, 2004b:22), in developing the necessary social skills. It includes guidance to teachers on methods of supporting pupils in developing these skills, developed from Johnson and

Johnson (1994). This useful guidance therefore provides clear links between research and practice and the underlying rationale for selecting a particular pedagogic approach. The materials were however, not shared with primary teachers and it was not until 2009 that guidance on 'fit-for-purpose' pedagogy was provided with a suite of headteacher professional development materials (DCSF, 2009c) described as a 'toolkit' of pedagogic approaches This guidance recognises the deficit in previously addressing pedagogy more clearly and states:

'Until relatively recently, the dominant knowledge base behind much teaching was what Jerome Bruner has described as 'folk pedagogy'. (DCSF, 2009c: 4)

This admission of teachers relying on 'folk pedagogy' is hugely significant in understanding why teachers have followed prescriptive approaches without a clear understanding of the rationale for doing so, and why they have been reluctant to experiment with other approaches, such as cooperative learning.

The 'Leading Improvement: Pedagogy and Practice' document (DCSF, 2009c) that accompanies the headteachers' professional development, makes a clear statement about 'pedagogic leadership' by headteachers and deputies and examines competing theories of learning and provides clarification of the pedagogic approaches promoted by the National Strategies, stating:

'Successful learning occurs when a teacher is able to marry their **subject knowledge** with their **pedagogic knowledge** for **pedagogic content knowledge.** Another conceptualisation of pedagogy would add to this diagram a representation of the conditions to create learning It is not surprising that conceptualisations or diagrammatic representations of teaching are complicated and layered; teaching is a complex and multilevel skill.' (DCSF, 2009c: 7). In order to clarify this, the guidance document provides a diagrammatic representation of pedagogy thus:



(DCSF, 2009c: 7)

One of the tools for supporting more effective analysis and reflection of pedagogy in schools this document presents, is the use of lesson study. Here, the process involves:

'a group (or pair) of teachers [who] work together to improve their teaching of a strand or aspect of the curriculum that their data and their experience suggests is in need of improvement. They collectively plan a 'study lesson' that incorporates some new pedagogic component which, strong research suggests, will improve learning and progress. They use the study lessons to try out, refine and tailor the component to the needs of their pupils.' (DCSF, 2009c: Sec 6:28)

Research into the use of lesson study in England has found:

' Lesson Study was found to be a popular, powerful and replicable process for innovating, developing and transferring pedagogic practices.' (Dudley, 2008: 1)

This tool for greater understanding and analysis of pedagogy, gathering pace in 2009, comes at a point when centralised support is to be withdrawn. Political pressure for improved standards led to an early emphasis on 'quick fix' approaches at the outset of the National Strategies, but in the dying moments of the National Strategies, with the announcement that they will cease in 2011 in the White Paper 'Building a 21st Century Schools System' (DCSF, 2009b); attention is drawn to the crucial aspects of effective pedagogy. The Review of the Primary curriculum for the DCSF led by Sir Jim Rose also emphasises a key change – 'Essentials for Learning and Life' which includes Literacy, Numeracy, ICT learning and thinking skills, personal and emotional skills, social skills, including 'work collaboratively towards common goals' (DCSF, 2009: 76).

From a review of the foregoing, it is clear that pedagogy is unavoidably affected by culture and values, and requires the teacher to make a number of decisions. These are based on knowing how to motivate, achieve and assess learning; having a repertoire of teaching methods from which to select; having a firm understanding of the needs of the children in the class; and knowing how to structure and plan aspects of the curriculum, and to mediate it for the children. All this is done within the context of a particular institution and more broadly within local and national policy. Pedagogy might thus be seen as a multilayered, as acknowledged in 2009 by the National Strategies (DCSF, 2009c).

Irrespective of this focus on pedagogy some twelve years after the inception of the National Strategies, it is still pertinent to ask what the impact has been on

pedagogy by two decades of change and centralisation by government. Several large scale research studies help to provide an answer.

The Changes in Curriculum-Associated Discourse (CICADA) study (Alexander *et al* 1996) examined pupil-teacher discourse in primary classrooms through a mixture of national survey of teachers and classroom observations. These observations undertaken in 1986, 1988 and 1992 in the north of England were subjected to computerised discourse analysis. What the study showed was that whilst many aspects of primary teaching had changed (such as planning, assessment and record-keeping), the discourse data showed considerable continuity in terms of pedagogy. Teachers' discourse tended to focus on two clusters: formative feedback and types of explanation and questioning. The conclusion was that the National Curriculum had made little difference to pedagogy.

Based upon fieldwork conducted in 1996, Galton *et al.* (1999) asked whether classroom practice had changed in English primary schools over the previous two decades and if so to what extent. The book outlined the results of a replication of the previously very influential ORACLE research study conducted in the late 1970s. Using a combination of systematic observation schedules (with 58 classrooms observed in the 1970s study, and 28 in 1996), and measures of pupils' academic progress, using standardised tests of reading, language and mathematics; the research team re-visited many of the same schools that had been studied in the 1970s. The team found that:

'Two decades of classroom research, curriculum reform on an unprecedented scale, and a shift in educational thinking which has produced calls for a return to whole-class teaching and more subject specialisation has had almost no impact on the way in which teachers organise the pupils.' (1999:41-42).

This is a dramatic finding showing little change in pedagogy in two decades. A similar picture emerges from the findings of the PACE research (Osborn et al., 2000). All these studies suggest that, despite massive changes to the work of primary school teachers brought about by the demands of changes in curriculum and assessment, primary teachers had up until 1996 not made any fundamental changes to their classroom practice, nor to their values, concerning what good practice was. The PACE project found that teachers reported there had been an increase in whole-class teaching, particularly in Year 6 in preparation for SATs. In a related paper from the project, McNess et al (2001) reported that: 'Whole-class teaching and individual work increased at the expense of group work' (2001:12). The third publication from the PACE project (Osborn et al, 2000), aimed to find out teachers' views on changes and various policy initiatives. This found a common view of 'a pressurised classroom context' (p 140), and as Wyse et al (2008: 9) comment, there was 'significant curriculum overload and work overload' which is 'highly teacher controlled, with little scope for pedagogic flexibility and little pupil autonomy'. With little scope for pedagogic flexibility, it becomes increasingly obvious why there is little evidence of cooperative learning in England.

Two further studies carried out on behalf of the Association of Teachers and Lecturers by Webb (1993) and Webb and Vulliamy (2006) investigated the impact of the National Curriculum and later the additional impact of the National

Literacy and Numeracy Strategies, and found that the decade intervening between the two research studies, unlike the previous two decades intervening between the Galton *et al.* studies, has seen profound changes, not only in primary teachers' classroom practices but also in their values concerning desirable practice. Webb and Vulliamy, however, argue more positively that teachers have been supported by three innovations which have helped 'solidify' (2006:109) such profound changes: guidance on teaching provided by the NLS and NNS; the growth in the use of ICT (and particularly interactive whiteboards); and the dramatic increase in the use of teaching assistants.

Of particular interest is the comparison that Webb and Vulliamy make of methods of classroom organisation in Key Stage 2. They compared a 1992-4 study with one in 2003-5 (Webb and Vulliamy, 2006: 110). Most marked is the increase in whole-class teaching (from 50% of lessons to 94%) and cooperative group work in 2003-05 reduced to 2%, from a low rate of 7% in 1992-94. This provides evidence that cooperative learning which has always been uncommon, has disappeared almost entirely. Webb and Vulliamy (2006) argued that suggestions that the National Strategies had deskilled teachers were misplaced, due to the innovations mentioned above. Nevertheless, earlier in the report they state:

'The strategies, particularly the NLS, were implemented begrudgingly because of the top down, coercive way in which they were imposed on schools and enforced by LEA strategy consultants and advisors. The strategies not only specified detailed subject content but also how it should be taught. In this way, they challenged the one remaining area of teacher expertise not previously subject to government prescription and further undermined teacher competence and confidence.' (Webb and Vulliamy, 2006:36) Hargreaves *et al.*'s (2003) research resonates with the above. They examined 30 primary teachers' approaches to the NLS and found a large increase in the number of questions teachers asked children and in the ratio of teachers' questions to statements, by comparison with either the 1970s or the 1996 ORACLE studies (Galton *et al.*, 1980, 1999). Consequently, they concluded that 'teaching in the Literacy Hour, having become 'interactive' in a 'surface' sense, has remained heavily teacher-dominated' (Hargreaves *et al*, 2003:234).

Robin Alexander's research '*Culture and Pedagogy*' (2000) is one of the most extensive studies of primary education in recent years. This comparative study of the relationship between culture and pedagogy in five countries (England, France, India, Russia and the United States) provides extensive data from classroom observations, interview and documentary analysis. It used a specially devised framework for analysis of classroom practice which took into account the context or frame (with resonances of Bernstein's work on the structuring of pedagogic discourse, 1990), the teaching act and its form (task, activity, interaction and assessment) in the setting of space, pupil organisation, time and curriculum and by routines, rules and rituals, all within the boundaries of the lesson itself. Alexander showed significant differences between countries in the extent of their control of the education systems. However, particularly enlightening is the finding that in English classroom, in contrast to others and especially Russia and France:

'children spent the bulk of their time writing, reading and using apparatus, and in which they spent relatively little time in collaborative activity and structured talk. The implications of this finding for what we now know about effective learning – for which collaborative activity and structured talk are understood to be indispensable – are serious.' (2000:352). Alexander also reported that in England and in the United States children spent higher proportions of time on routine matters and awaiting the teacher's attention. There was also an increased focus on individual work, frequent disciplinary interactions and teachers spending a great deal of time on monitoring in a supervisory way rather than being instructional.

Alexander's later journal article (2004) draws on this evidence, to make a case for a lack of pedagogy in England: 'Still no pedagogy? Principle, pragmatism and compliance in primary education'. Reviewing Simon's earlier (1981) proposition that England demonstrated a lack of clear pedagogy, Alexander maintains that this has remained largely unaltered in spite of government attempts to remedy this, for example in the Excellence and Enjoyment (DfES, 2003a) initiative. Alexander presents a vitriolic rebuttal of the Primary Strategy's statement of the principles of good learning and teaching as meaning 'precious little' (2004:20), going on to say that 'the only item here which as a recognisable empirical basis is the final one, which hints at the important ideas about assessment for learning and its implications for classroom talk.' However, later attempts by the National Strategies (DfES, 2004, DCSF, 2009c) as discussed, have begun to address this and interestingly Alexander's definition of pedagogy is cited:

"Pedagogy is the act of teaching together with its attendant discourse of theories, values, evidence and justifications. It is what one needs to know, and the skills one needs to command, in order to make and justify the many different kinds of decision of which teaching is constituted."

Alexander, (2008: 47 cited in *Leading Improvement: pedagogy and practice*, DCSF, 2009c)

The range of research discussed here resonates with the main findings from Wyse *et al*'s (2008) review of research into the primary curriculum and assessment in English primary schools which showed that:

- 1. Government control of the curriculum and its assessment strongly increased during the period from 1988 to 2007, especially after 1997.
- 2. The quality of teacher-pupil interaction upon which much learning depends has shown little sign of improvement and there is some evidence of decline.
- 3. The amount of whole-class teaching has increased but without changes to the dominant didactic form of interaction.
- 4. The primary curriculum has become narrowly focused on literacy and numeracy at the expense of the broader curriculum; even time devoted to science, which was one of the success stories of the post-1988 national curriculum, seems to be in marginal decline since 1997.
- 5. The high stakes testing system has had a narrowing effect on the curriculum and has also adversely affected teacher-pupil interaction. (Wyse et al, Research Briefing 3/2, 2008:2)

This concurs with views obtained from stakeholders from the first interim report of the Primary Review, (2006-2008) funded by the Esmée Fairbairn Foundation headed by Robin Alexander. Views elicited from a range of headteachers reflected a concern over the impact of the National Strategies on teachers, as well as a lack of training in pedagogy more broadly:

'that they were becoming de-skilled by over-reliance on DCSF/national strategy prescription, and that younger teachers, in particular, were trained merely to implement national strategy requirements and lacked the skill or will to improvise... critically, their training was focusing on classroom skill acquisition and neglecting the study of psychology and pedagogy in which such skill needs to be grounded.'

(Alexander and Hargreaves, 2007:28-29)

In essence, primary education in England has become narrowly focused on delivering the prescribed curriculum due to the emphasis on high stakes testing and accountability. Pedagogy has been weakened and any attempt at 'fitness for purpose', as discussed earlier, has been subsumed by an objective-led curriculum. In spite of more recent attempts to redress this, as mentioned earlier, this seems to be too little and too late. One way to begin to impact on teachers' practice is to include much greater emphasis on pedagogy during the training of teachers. Thus the next section will examine developments in training the workforce.

3.5 Training the Workforce

Since the milestone of the 1988 Education Reform Act there have been considerable and significant changes in both the nature of the workforce and the training they have received. The literature is dominated by increased government control, including initial teacher training; 'quick fix' and often short term measures, and a divorce of academic research from practice. In such a climate developing an in-depth understanding of the complexities of pedagogy, as discussed earlier in this chapter, seems a near impossible feat. It is no wonder then that cooperative learning, which until more recently got scant mention by the National Strategies, is neglected. However, recent research into longer more sustained methods of CPD, including mentoring and coaching, together with networks of support within and between schools offers potential for change.

3.5.1 Initial Teacher Training

A significant step in the process of more centralised professional development was the creation of the Teacher Training Agency (TTA) in 1994 by the then Conservative Minister for Education, Chris Patten. This replaced the Council for the Accreditation of Teacher Education (CATE) which drew funds from those

previously allocated to the Universities funding body. The implication was a much greater degree of control over the training of teachers in England reinforced by OfSTED inspections of teacher training programmes. This control continued and the Schools Minister, Lord Adonis wrote in his Policy Network paper in 2001, referring to university faculties and departments of education: 'We have imposed a new national curriculum for initial teacher training, setting out the standards and content of training courses, which all providers must follow' (Adonis, 2001, p. 14). The tone of this statement which talks of the curriculum being 'imposed' which providers 'must' follow illustrates the level of government control over all aspects of education. According to this, teaching was reduced to meeting a set of prescribed standards. Gilroy argues (1992 and 1998) that the reforms introduced by the Conservative Government and continued by New Labour had little justification in being based on an assumption of initial teacher education was in some way failing students. In addition, in 1997, the TTA was allowed to review in-service provision for teachers and the methods with which they were funded. As a result, funding was removed from the normal source from the Higher Education Funding Council (HEFCE) to be controlled by the TTA with specific areas designated and Universities were required to bid for such funds. As Gilroy describes, the result of this was 'catastrophic' (1998: 226) with a large number of universities not having their bids accepted and thus large areas of the country having no inservice provision. As he goes on to comment:

'The opportunity to consider appropriate forms of in-service education for teachers has simply been lost in the shambles of the TTA's ill-thought-through excursion into in-service education.'

(1998: 226)

The TTA (renamed the Training and Development Agency in 2005) thus set itself as 'sole arbitrator of what is to count as meaningful INSET' (1998: 226). A series of national professional qualifications was established, from Standards for the award of qualified teacher status (2003), culminating in the National Professional Qualification for Headship; the latter becoming mandatory in 2004. The result of this has been to largely divorce academic research from classroom practice.

3.5.2 Continuing Professional Development

If initial teacher training became heavily controlled; developments in continuing professional development (CPD) for qualified teachers since 1988 show a series of initiatives, the majority centrally prescribed. This is in sharp contrast to Day's definition of professional development for teachers (1997:4):

'Professional development consists of all natural learning experiences and those conscious and planned activities which are intended to be of direct or indirect benefit to the individual, group or school and which contribute, through theses, to the quality of education in the classroom. It is a process by which, alone and with others, teachers review, renew and extend their commitment as change agents to the moral purpose of teaching and by which they acquire and develop critically the knowledge, skills and emotional intelligence essential to good professional thinking, planning and practice with children, young people and colleagues through each phase of their teaching lives.'

Centralised control over CPD can be traced to 1987 when Kenneth Baker, the then Secretary of State for Education, introduced five statutory training days each year for teachers, thereafter known as 'Baker Days'. This meant a change to teachers' contracts with a compulsion to attend. Bottery and Wright's (2000) research into the nature of INSET in schools found 91 per cent dominance of the one-day course. As a result of their research they noted:

'that INSET content selected by schools failed in any significant way to deal with the wider issues crucial to the development of teaching as a profession.'

and they went on to state:

'that the length of courses selected, and were provided with, added to a climate of short-termism and quick fixes.' (2000:64)

In this climate, it becomes more apparent that developing an in-depth understanding of pedagogy and innovative methods becomes increasingly difficult.

Models of CPD

Kennedy (2005), in a study of forms of CPD, has broken down the distinctive features further and identifies nine key models of professional development. Kennedy's models can be seen as a continuum ranging from 'transmissive' at one end to 'transformative' at the other. It is the latter that has the potential to change practice and support real understanding of pedagogy. An overview of these models is presented in the table below:

Table 3.1 Models of CPD

Model of CPD	Delivered by	Ability to support transformative
		practice
1. Training	'experts' external to school	Limited – often does not relate to teachers' needs. Useful for disseminating 'new knowledge'. This form of CPD 'supports a high degree of central control, often veiled as quality assurance, where the focus is firmly on coherence and standardisation' Kennedy (2005:237).
2. Award-bearing	Higher Education Institutions or other professional bodies	Can support greater understanding of pedagogy and practice. A decreasing use because the 'discourse of anti- intellectualism has led to accusations of the irrelevance of the 'academic' work undertaken by universities and placed emphasis instead on the practice-based element of teaching' (Kennedy, 2005:238).
3. The deficit model	External 'experts'	Aims to support those who are showing deficiencies in their teaching performance. Linked to performance management and monitoring of standards in schools.
4. The Cascade	Training courses	Limited – relies on teachers
Model	delivered by 'experts' external to school	cascading information to others which relies on accurate interpretation and may not relate to individual school's contexts. This was the dominant model used in introducing the National Strategies. It also focuses on 'what' and 'how' and not more crucially 'why' (Nieto, 2003, Jolliffe, 2006).
5. The Standards- based model	External or internal experts	Limited – focuses on standards of professional performance devaluing the complexities of teaching Beyer (2002). Based on external accountability and does not allow teachers to take responsibility for their professional development.
6. The Coaching/Mentoring model	Internal with peers once understanding is reached of skills and process involved.	Joyce and Showers, (1988) and Day (1999) showed positive outcomes on teachers' professional development where there had been evidence of coaching. National Framework for Mentoring and Coaching (DfES/CUREE, 2006) established.

Model of CPD	Delivered by	Ability to support transformative practice
7. The communities of practice model	Internal - links with co- coaching social learning happens as a result of interactions	Entails three aspects. First, mutual engagement, second, understanding and 'tuning' their activities and third, developing a repertoire of skills and styles. Wenger (1998:81) argues that 'negotiating a joint enterprise gives rise to relations of mutual accountability among those involved'. As such can be transformative.
8. Action Research	Internal – with peers	Greater impact when shared within communities of practice (Weiner, 2002; Burbank & Kauchack, 2003). Collaborative action research enables teachers to view research as a meaningful exercise that has the power to transform practice
9. Transformative Model	Internal within schools and between schools	A fusion of co-coaching, action research and communities of practice. Teacher-centred, context-specific views professional development as being owned by the participants Kennedy (2005).

The above models show a considerable development from one end of the spectrum to the other in terms of the ability to transform practice. It is those at the transmissive end of the scale that have been principally used by the Primary Strategy with a focus initially on the cascade model. A review of effective CPD (Cordingley *et al*, 2003) was first voiced through a publication from the Primary National Strategy (DfES, 2004a). The recommendations centred on collaborative enquiry through building a learning community: a considerable shift in emphasis. There are resonances with Kennedy's transitional and transformative models of CPD, which presents a considerable change from earlier methods use. Government strategy appears to be moving towards a much more effective model of CPD to effect change.

Ofsted's report in 2006 on the impact of the Government's strategy for continuing professional development introduced in 2001 found a mixed picture, with the use of mentoring and coaching being limited. Effective use of coaching, however, is no 'quick fix' and requires extensive support for it to be effective. Dissatisfaction with the effectiveness of CPD has led the Government to instigate extensive reviews. These have been carried out by the Evidence for Policy and Practice Information and Coordinating Centre (Cordingley *et al*, 2003), the Training and Development Agency (TDA, 2007) and the General Teaching Council for England (GTCE, 2007). The commonality of the findings provides real hope for improvement and includes:

- 1. CPD should be broader and deeper with sustained interventions.
- The need for more teacher influence over their CPD and ensuring it is tailored to meet their needs.
- CPD should be designed to meet the different needs of teachers at different stages in their careers.
- 4. The need to develop professional learning communities

One of the reviews (Cordingly *et al*, 2003) looked specifically at the benefits of collaborative CPD and found that sustained professional development with colleagues, Local Educational Authorities or Higher Educational Institutions had a positive effect on teaching and learning in almost all the cases reviewed. Thus, the argument in favour of communities of practice seems to be gathering pace. As Niesz (2007:605) comments, the power of the idea is:

'in the conceptualisation of learning as social participation, which begins with the assumption that engagement in social practice is the fundamental process by which we learn and so become who we are.'

She goes on to state that:

'Communities of practice, in which learning and teaching are interwoven in social networks, may someday lead to a movement to put thoughtful professional expertise back into schooling.'

This resonates with the focus in this thesis for empirical research: the development of a 'community of practice' to provide support in introducing innovative pedagogy: cooperative learning.

Research on communities of practice has led to the introduction of Networked Learning Communities (NLCs), launched in September 2002 by the National College for School Leadership (NCSL). Whilst the NCSL claimed that the programme was probably the largest of its kind in the world in 2007, funding had dried up in 2006. New initiatives and demands for funds took precedence, although as the next chapter will show, this is difficult to comprehend judging by its success in supporting radical changes in pedagogy.

One of the further developments by the Government is the establishment of the General Teaching Council for England (GTCE), which formally came into existence in September 2000 with a specific remit to promote teachers' professional development. A key part of this was the Teacher Learning Academy (TLA), which offers public and professional recognition for teachers' learning, development and improvement work. The take up for this has been slow: changing teachers' attitudes to CPD and accreditation that revolves around action research will be difficult. Such sustained professional development is a long way from 'quick fixes' and one day short courses.

Yet another Government initiative was announced in December 2007, by Secretary of State for Children, Schools and Families, Ed Balls, The Children Plan. It set out the intention to:

make teaching a Masters level profession by working with the social partnership to introduce a new qualification, building on the recently agreed performance management measures; (DCSF, 2007:4.24)

The White Paper on 21st century schools states:

We aim to transform the culture of teachers' professional development, through the introduction of the new Masters in Teaching and Learning, which we aim to extend across the profession. In addition, we intend to introduce a new renewable 'licence to teach' linked to a new professional development entitlement for teachers. (DCSF, 2009: para 35).

Whilst on the one hand it shows the aspiration to move to a greater recognition of the value of academic research on practice, it is set against the context of 'performance management'. If this results in a 'deficit model' of professional development, the growing wealth of research into effective CPD is having little impact. It seems yet again, just when signs are positive for more collaborative sustained professional development that can really impact on pedagogy; other and contradictory government policy intervenes.

Conclusion

The aim of this chapter was to uncover why the use of cooperative learning in the UK has been uncommon. It has sought to review the context in England and examined it in terms of the three aspects of Bernstein's theory of education (1973): curriculum, pedagogy and assessment. As the chapter has unfolded, the impact of numerous changes has been profound. As Reynolds *et al* (2003:1) state:

'The UK educational system has probably been in receipt of more 'change attempts' by governments over the last decade than any other in the developed world.'

How teachers and schools have dealt with these changes has led to an examination of training; its types and their potential for transforming practice and the extent of centralised control. The concept of classification is central to Bernstein's theory of pedagogic discourse and practice. This relates to 'the degree of boundary maintenance between contents' (Bernstein, 1973: 205). Where in Bernstein's terms (1973) there is strong classification it leads to a curriculum which is heavily differentiated into subjects, rather than weak classification which enables a more integrated curriculum. In addition the concept of 'framing' relates to the transmission of knowledge through prescribed teaching practices. Strong framing means that the teacher has limited control over the content of what is taught, or the manner of doing so. Thus strong classification and framing as is found in the English primary education system, results in little room for professional autonomy. In addition, the pressures of high stakes testing have led to an emphasis on traditional transmissive teaching methods.

This chapter sought to answer the question of whether teachers have the will or the skill to implement cooperative learning in an age of accountability and increased pedagogic prescription. The 'will', which as this chapter has shown was always very limited, has become buried under the sheer weight of initiatives and the impact of high stakes testing. Whilst there are real developments in investing in teacher professionalism in assessment, and moving away from external testing, these occur at a time of political change, which will yet again impact on education. The 'skill' has been severely hampered by dominance of 'quick fix' methods of professional development and the divorce of academic research from practice. Developments in CPD, however, present room for hope: where communities of practice have the potential to transform teaching and learning. This then will become a central question for empirical research in this thesis: *do communities of practice support innovations in pedagogy, specifically cooperative learning?*

The next chapter examines a community of practice, a networked learning community; one that forms the focus for this study. It will seek to review how it has evolved, how it has been sustained and how this in turn supports the use of cooperative learning.

Chapter 4: The Context for the Study: Bransholme, Hull

The previous chapter, in seeking to ascertain why cooperative learning has had little impact in England, found that in a climate of heavy government control over the three key aspects of education: curriculum, assessment and pedagogy, teachers lacked the will and the skill to implement cooperative learning. A review of models of CPD, together with reviews into their effectiveness elicited some common findings for effective professional development. CPD should be broader and deeper with sustained interventions; encourage more teacher ownership and it should be tailored to meet the varying needs of teachers at different stages of their careers. In addition, the need to develop professional learning communities was highlighted. This was at the heart of the NCSL networked learning communities venture which 'demonstrated the massive potential benefits that can come from working together' (NCSL, 2007:5). Kennedy's helpful analysis of models of CPD (2005) provided some pointers to ensure that CPD is 'transformative' rather than 'transmissive'. The focus of this study is a network of schools which has demonstrated many of the features of effective networks in addition to key aspects of 'transformative' professional development. An examination of this context is the focus of this chapter.

The City of Kingston upon Hull

The study is set in a part of the city of Hull. Before turning to the location itself, it is useful to first place it within the context of the city. Kingston upon Hull is a city of over 250,000 inhabitants that has suffered from a poor image, indeed a recent publication gave it the dubious honour of first place out of 'crap towns' in

the country to live (Jordison & Kieran, 2004). Whilst a range of literati emanate from Hull (the most well known, being Philip Larkin), as well as such visionaries as William Wilberforce; the town languishes in public perceptions. Its days of being known as one of the foremost fishing ports in the UK have long gone. The statistics however show that there is real deprivation. Almost half of the people in Hull live in electoral wards that are amongst the 105 most deprived wards in the country. In 2001, the Department of Transport, Environment and the Regions reported that around 100,000 people in households in Hull were in receipt of means tested benefits. In 2003, a national survey revealed that 27% of the city's households have an income of under £10,000. The unemployment claimant rate (5.4% in July 2005) was over twice as high as the national average (2.2%) (Hull City Council website, 2008). In 2009 as a result of the recession, Hull has been ranked fifth for unemployment of UK cities and reported unemployment figures have doubled in a year (Humber Business, 2009).

Hull City Council has been actively seeking to re-generate the city, spending vast sums of money (in 2008 for example, £200 million on a new city centre shopping and entertainment complex, plus another £200 million to 'build schools for the future'). This has been partly funded from the sale of Kingston Communications, the city's own telecommunications company. As part of this regeneration, the city is working hard to improve the educational success of its schools. Since reorganisation in 1996 as a unified authority, the city has suffered from the loss of its more middle class areas to the neighbouring areas of the East Riding. The schools are largely all inner city ones and the

secondary schools have particularly been affected by middle class parents moving their children away. Thus the city's results have remained near or at the bottom of the league tables for the country, although, further analysis shows that primary schools are more successful. The indices of deprivation published in 2005 by the Yorkshire and Humber Public Health Observatory (Wyborn, 2005) provide a comparison across the region for a number of aspects including education, skills and training. This shows that East Hull ranks bottom out of all other regions and when aspects of multiple deprivation are taken into account (income, employment, health, housing, crime, living environment) then West and East Hull follow Bradford city as the most deprived across the region. The indices published in 2007 shows that the city of Hull continues to have the highest levels of deprivation in the region, particularly for education and crime (Yorkshire Forward, 2009).

Bransholme

The network of schools in this study is situated in Bransholme, (also known at North Carr) to the north of the city and part of the East Hull region for the purposes of the deprivation indices. Bransholme is a huge council estate on the northern periphery of Hull. Built in the 1960s and 70s to house people as the dockland areas were cleared, it was billed as the largest public housing project in Western Europe. This has since been disputed; nevertheless it was an exercise in re-housing on a very large scale. It has high levels of unemployment and comes into categories of highest social deprivation nationally. The population of Bransholme in the twenty-first century is falling with people migrating to find work. Hull City Council has therefore consolidated the housing stock; clearing the areas in poorest repair; landscaping and investing in the remaining stock. In spite of such difficulties, the area has developed good community links. A prime example has been a community led regeneration project 'URbAN' (United Residents for Bransholme Area North) which has worked with a number of agencies to create a 'master plan' for regeneration. Links with local schools have also proved valuable. The North Carr area team has identified, in partnership with the community and other agencies, five main priorities for the area, including (Hull City Council, 2008):

- community safety reducing anti-social behaviour which includes nuisance behaviour, illegal motorbikes, vandalism and graffiti
- void properties reducing the number of long term empty properties by demolishing properties beyond repair and investing in properties which can be re-furbished and re-let
- education improving attainment, school attendance and encouraging life-long learning
- health and teenage pregnancy addressing issues around teenage pregnancy and increasing support for those wanting to improve their general health. This includes stopping smoking clinics and advice on healthy eating and exercise
- job creation increasing opportunities for training and employment in the North Carr area

Partnership work in the area is growing and the area team claims significant progress around its five priorities (Hull City Council, 2008). In addition, the adjoining area of Kingswood in Hull has been developed to include 3000

houses, a business and retail park and entertainment centre. To date, the impact appears to be contained, with plans for a new primary school, rather than to extend existing schools and only one of the Bransholme primary schools has seen significant increase in pupil numbers.

Education

Hull City Council set out in 2004 its vision for social inclusion, stating:

'Education has a vital role to play in challenging the low expectations and underachievement that are too often seen as the inevitable consequences of poverty, deprivation and high levels of unemployment.' (2004:13)

In its review in 2004 Hull Local Education Authority (as it then was) saw considerable progress since its inception as Unitary Authority. It claimed real progress in securing social inclusion for children, young people, their families and the wider community, (Hull City Council, 2004):

- There have been steady improvements in pupils' attainment across early years and Key Stages 1 to 4 in primary and secondary schools since 1996;
- Permanent and fixed term exclusions from schools are low compared with statistically neighbouring LEAs;
- Pupils' attendance in schools has significantly improved, although still lower than statistically neighbouring LEAs;
- The LEA encourages parents of persistent truants to jointly negotiate Attendance Support Plans to improve their child's attendance and avoid prosecution;
- Free nursery education places are provided to all 3 year olds living in Hull, attending pre-school playgroups or private day nurseries.

Nevertheless Kingston upon Hull has remained near the bottom in national rankings with results for the city for numbers of pupils achieving 5 A-C grades at GCSE including English and mathematics being bottom (50.5%) in 2009. In addition the city reflects the largest unauthorised absence statistics for pupils

across the country. Results for primary schools in Key Stage 2 tests show an improved picture however, with the city ranking in the bottom third and 74% of pupils achieving the expected Level 4 in English (against a national average of 80%) in 2008.

The Bransholme Education Action Zone (EAZ) was cited as an example of 'innovative practice' by the City Council in its review in 2004. In 1998 when the Bransholme EAZ was formed there were two large secondary schools, two special schools and 14 primary schools. The fall in population has affected the school population, which has led to reorganisation and school closures. As a result, five primary schools closed at various times, leaving nine primary schools and two secondary schools and one special school. The remaining schools which form the Bransholme Network are all relatively large with some primary school populations as big as 400-500 children. There are two large comprehensive schools of 1400-1600 pupils one of which, Kingswood High School is an 11-16 secondary school situated in the Bransholme area of Hull. The school was reopened in 1999 under the government's Fresh Start initiative after several years of being placed in 'Special Measures'. A number of innovative projects have been introduced including an Accelerated Learning Programme in 2000, which incorporated cooperative learning. Kingswood has since become a College of Arts in 2005. The school's results have steadily improved from the position in 2000 of 2.7% five A-C grades at GCSE which was joint lowest in the country with a school in Gillingham. As a result of number of initiatives and partly the impact of the Education Action Zone of which it was a part, the results have improved. Indeed a dramatic improvement was seen one

year later when the results rose to 18%. In 2006 the school achieved 61% A-C grades. However, the government has since changed the methods of reporting GCSE results, and these are now reported according to the proportion of GCSE A-C grades including Maths and English. As a result the school has fallen to 17% of pupils achieving A-C grades.

EAZs

It was because of areas of deprivation that formed the Government's rationale for the setting up of Education Action Zones (EAZs) in the late 1990s. It was their firm belief that more needed to be done to ensure that all pupils had a chance to succeed and that a partnership of schools, business interests and statutory bodies, with the freedom to act quickly and innovate could, with effective leadership, lead to rapid gains in achievement. This was shown to be the case with Kingswood College of Arts. This theme of social justice and inclusion was, as has been discussed in the previous chapter, one of the central tenets of New Labour, brought about through partnership with a range of bodies. It also has resonances with the educational priority areas recommended in the Plowden report in 1967.

The decision to bid for EAZ funding was made by Hull City Council in the summer of 1998. The City was committed to the initiative and a level of business support was built up. The Bransholme area of the city was chosen because of the low levels of pupil achievement in the majority of the schools, strong political support, and the fact that there was a history of good working relationships between the schools.

Key issues that militated against the raising of standards were identified by the schools. Working parties were established to explore these issues and a draft action plan was drawn up. This action plan was presented to the DfEE and approval was given for a three year EAZ partnership programme to start on the 1st of January 1998. The Bransholme Area EAZ was one of the first 25 Education Action Zones to be set up in England.

Between 1999 and 2001, the Institute for Learning at the University of Hull conducted an evaluation of selected aspects of the work of the Bransholme Area EAZ. This began with ascertaining the reactions of various interested parties to the initial stages of the Bransholme Area Education Action Zone. interviews were conducted in seven primary schools, two secondary schools and one special school. An overview of these findings showed (Moore, Waugh and English, 2001:4):

- There was general acceptance that the EAZ was needed and that it could make a difference to the area.
- Many teachers' early reservations were being allayed.
- The LEA laid good foundations for the EAZ.
- Awareness of the EAZ in the community was growing.
- Support for the EAZ was strongest where tangible benefits were greatest.
- There was strong general approval of the EAZ's leadership.
- EAZ employees tended to be rated highly.
- ICT hardware and technicians were highly rated.
- Partnerships between schools were strong and had strengthened through the EAZ.
- The EAZ is made up of diverse schools: this has benefits but could also be problematical.
- There was a strong feeling that the EAZ should provide opportunities to counter the perceived insularity of the area.
The benefits were seen to be innovation, particularly in ICT and sustainable strategies for improvement. Partnerships between schools were the biggest benefit.

The evaluations of a selection of the EAZ's projects and the responses of teachers, headteachers and others during structured and semi-structured interviews strongly suggest that the Bransholme EAZ is proving to be a very effective agency for enhancing educational provision, both in schools and in the wider community.

(Moore, Waugh and English 2001: 79 Final Report)

Excellence in Cities

As the Bransholme EAZ programme came to an end, it then evolved into a further government initiative: Excellence in Cities (EiC). This aims to tackle the particular problems facing children in city schools. Through a combination of initiatives, it aims to raise the aspirations and achievements of pupils and to tackle disaffection, social exclusion, truancy and indiscipline and improve parents' confidence in city schools.

The Government introduced EiC in three phases from March 1999 to September 2000. The Hull EiC Partnership was a phase two programme and became operational from September 2000. It gradually evolved as key people were appointed to posts with a full complement of staff was in place in April 2002. The EiC is based on four core values:

- 1. High expectations of every individual pupil and all young people;
- 2. diversity of provision;
- 3. networks of schools; and
- 4. extension of opportunity to bring success to every school.

Networks

It was this partnership that was further built on and it evolved into the Bransholme Networked Learning Community in 2003. The schools in the Network were all part of the Bransholme EAZ. The Network was co-led by two of the primary school headteachers and their work grew from that begun within the EAZ.

Networked learning communities (NLCs) were a further Government funded initiative which was introduced in 1999, and which contains many elements of 'communities of practice' (Wenger, 1998). NLCs grew in popularity from 1999, aided by the support of the National College for School Leadership (NCSL), because as Lieberman says (1999: 2):

'they encourage and seem to support many of the key ideas that reformers say are needed to produce change and improvement in schools, teaching, and learning.'

The NCSL claimed that the Networked Learning Communities' programme was probably the largest of its kind in the world. More than 134 school networks took part, involving approximately 35,000 staff and over 675,000 pupils.

The programme was fully launched in September 2002 by NCSL and ran until 2006, though many networks are continuing to develop. The NCSL's website states prominently on the page dedicated to networked learning that '*through their work, these groups of schools demonstrated the massive potential benefits that can come from working together*' (NCSL, 2007). For such networks to be effective, research shows that they need (Lieberman, ibid):

- a strong sense of commitment (to an innovation)
- a sense of shared purpose

- a mixture of information sharing and psychological support
- an effective facilitator
- voluntary participation and equal treatment

Earl et al, (2006)'s study was commissioned by the NCSL to review the impact of NLCs in England. It found that the key features, which operate in both schools and networks, were focus and purpose, relationships, collaboration, enquiry, leadership, accountability, and capacity building. While this study emphasized the complexity of NLCs and the huge variety, it also found that they can influence pupils' learning. To do so, strength of engagement with the network is important. However the report states: 'nothing really changes for pupils unless there are changes in the hearts and minds of the adults in schools who work with them' (2006:9). In essence it requires changes in thinking and in practice. The core of collaboration and successful professional development that changes thinking is 'joint work that challenges thinking and practice' Networks also are strongly influenced by the contribution and (2006:11). commitment of headteachers who are key players in forming and sustaining networks. In addition when leadership is distributed as part of shared understanding and action it has greater impact. The other key finding from this study is that direct evidence of the impact of networks is hard to find. This may therefore be a contributing factor to the cessation of funding for NLCs in England.

These key factors, therefore, need to be examined in relation to the Bransholme Networked Learning Community. In 2003, the Networked Learning Facilitator

from the National College of School Leadership visited the newly formed Bransholme NLC. From a mixture of interviews with key personnel and pupils, and from observing the work in schools with an emphasis on the use of cooperative learning, he published a report. The following is a summary of his findings (Woods, 2003:6):

'Although much of what I enquired about was pre-NLCs the quantifiable difference the work has made to children in demanding social circumstances is exciting.

The model for roll out is interesting not only because it draws practical expertise from those who have wrestled with the genuine problems of implementation but also builds leadership capacity in both the early adopting school and the target school.

There is evidence of pupil learning, adult learning, leadership learning, school-wide learning and school-to-school learning.

The building of leadership capacity within the schools and some thought on how that might be facilitated needs to be considered if the work is to thrive without the substantial support it receives from the EAZ.

There appears to be an almost contradictory model of a highly structured programme, which fosters independent learning.

It's about learning' a phrase they use was evident in the daily work of schools.'

This report therefore emphasises that the network was having a positive impact

on learning. Whether this was in any way related to the implementation of CL

required further research. It did, however, provide some indication of the role of

the network in improving learning.

Characteristics of Effective Networks

In analysing the impact of this network, it is useful to set this against the key indicators shown from a review of research into networked learning communities (Lieberman, 1999, Cordingley *et al*, 2006 and Earl *et al*, 2006).

Certain aspects are reiterated, which are useful indicators of successful networks:

- 1. Shared purpose and focus
- 2. Collaboration which ensured all parties are involved
- 3. Commitment of Headteachers
- 4. A mixture of information sharing and psychological support
- 5. An effective facilitator

This has strong links to Wenger's (1998) notion of a community of practice which, to be successful, should include the following indicators:

- Sustained mutual relationships, whether harmonious or conflictual;
- Shared ways of doing things together;
- Rapid flow of information;
- The absence of introductory preambles in conversations as they are viewed as continuations;
- Knowing each other's expertise and skills

The above features of successful networks therefore needed to be reviewed in the context of this networked learning community, in order to gain a more detailed picture of the network, and in turn what impact this has had on implementing cooperative learning.

Aims of the Bransholme Networked Learning Community

Effective networks require a shared focus. One aspect is clear: the Bransholme NLC had an agreed focus and purpose. The aims were set out in 2004 to be achieved by July 2006 (Sidwell, 2004), as follows:

- To impact on pupils' learning through cooperative learning. The aim was to ensure that this was embedded in all primary schools and to see these strategies in place throughout Key Stage 3 in one Secondary school and in some faculties at the other Secondary school. Response from teachers had been positive to cooperative learning and when the NLC began there was a unanimous decision to develop these strategies further and assess their impact.
- 2. To further develop the expertise and confidence of the co-operative learning facilitator in each school through joint training in co-operative learning strategies and the time to work together both to study the available research, carry out their own enquiries and support each other in the development of their understanding and effective use of the strategies. They will be given the status and time to take the lead in developing the strategies further, supporting the development of colleagues' skills and maintaining the high profile of the programme within their own schools.
- 3. Work on developing leadership skills through an Executive Coaching Programme to be extended to all members of staff so that the skills needed to support the development of colleagues and pupils become embedded throughout the schools

4. Networking, sharing of innovation and transfer of practice through regular meetings of the Steering Group, headteachers, the cooperative learning facilitator group and enquiry groups and via the website and newsletters.

The first two agreed aims of the NLC focused on CL and reflected the fact that by 2004, CL was being widely used in all the schools. This set the context for researcher's work with the schools: a long-standing relationship with the schools had been established. This was firstly, through previous work in one of the primary schools in the network, and secondly in the form of professional development to staff and advice to the networked learning community's steering committee. This included an evaluation of the implementation of cooperative learning for headteachers of the schools involved in late 2004 and reported in 2005. This evaluation highlighted the key role of the facilitator in supporting staff in implementing CL. As a result, the researcher was asked to provide ongoing support to the facilitators in the form of training and in enabling greater networking across schools. This enabled the researcher to gain a detailed picture of progress, and data was gathered from 2004 until 2009.

The networked learning community (NLC) had set out to embed the use of CL in all 12 primary schools and within key stage 3 in one secondary school and some faculties in the other secondary school. The author's evaluation carried out in 2005 (Jolliffe and Hutchinson, 2007: 9) found from interviews with headteachers and facilitators in the then 14 schools that 78.6 per cent of staff across all schools were making use of cooperative learning techniques. In addition, schools were asked to comment on the extent of use in a range of

lessons with over half of schools (57.1%) showing that staff used CL in most lessons across a range of subject areas. Hutchinson's action research at Kingswood College of Performing Arts (reported in Jolliffe and Hutchinson, 2007) with four classes of Year 7 pupils found that:

'All the classes observed appeared to enjoy using CL techniques and were able to make more progress in lessons as a result of collaboration. This progress was most evident where formal structures were in place; for example, seating was organised so that everyone had a learning partner, or had a specific role within group work.'

(2007: 13)

In conclusion this study showed:

'CL was seen as a key aspect of the whole-school learning policy at the secondary school in the study. However, success required it to be translated into practical classroom strategies and underpinned by understanding of why it works.' (Jolliffe and Hutchinson, 2007:13)

The second aim of the NLC was to further develop the expertise and confidence of the cooperative learning facilitator in each school. Meetings with facilitators had been ongoing, organised first by the NLC. In November 2005, the author, in the role of a member of the steering committee to support the work of the NLC, began to organise meetings with the aim of supporting facilitators in their understanding of cooperative learning and its development in schools. Since then, during the academic years of 2005/06, 2006/07, 2007/08, and 2008/09 the work of the group has continued, supported by headteachers, who were provided with regular progress reports. The facilitator meetings aimed to provide:

- 1. Training for facilitators
- 2. Sharing of progress and issues
- 3. Development of resources for use in schools

4. Networking and sharing of good practice including visits to each other's schools

Minutes of these meetings were shared and form a useful source of data in respect of research questions relating to a) the attitudes of staff and pupils to the use of cooperative learning in promoting effective teaching and learning, and b) the types of support have enabled CL to be used. Analysis of these will further support triangulation of findings and are discussed in Chapter 6.

Conclusion

This chapter has set out the context for the case study. It has shown how this networked learning community has developed from 1998 as an EAZ to 2000 as an EiC, and in 2003 a Networked Learning Community; continuing in 2009 its strong networking practices. Characteristics of effective networks have also been drawn out from a range of research, which provides a useful starting point for reviewing the impact of this NLC on implementing CL.

Previously published research (Jolliffe and Hutchinson, 2007) established that CL had become widely used. The work of the facilitators' network from 2005 to 2009 also indicated a high level of mutual support provided in implementing CL. Set against a national context of increasing government prescription and limited use of CL in England, as discussed in Chapter 3; the growing use of CL in this network is remarkable. The findings suggested and permitted careful examination of the key factors that had contributed to the implementation of CL in this NLC. It was therefore necessary to examine in more detail:

1. The nature of the network, and

2. The views of staff on the power of the network to offset outside pressures and focus on self-determined initiatives.

The next chapter therefore discusses the research tools used to investigate these key factors and will seek to confirm or deny the hypothesis formed that:

The effective implementation of cooperative learning requires cooperation in the staffroom as well as in the classroom, and it is considerably enhanced by cooperation across staffrooms – in effective networks.

Chapter 5: Research Methodology

The previous chapter provided evidence that networks can be powerful in demonstrating 'the massive potential benefits that can come from working together' (NCSL, 2007:5). Thus, the hypothesis has been formed that the network in this case study has been crucial in developing cooperative learning. This is in spite of heavy external pressures that have led to reluctance by teachers to be innovative in pedagogy (Harlen and Deakin-Crick, 2002, Wyse and Jones, 2008). This chapter seeks to explore the appropriate use of research methodology to analyse this hypothesis and to answer the central research question:

What key factors have contributed to the implementation of cooperative learning in the Bransholme Networked Learning Community?

5.1 Philosophical dimensions

Developing a research design that fits the purpose requires first of all clarification of the philosophical stance of the researcher. The existentialist philosopher Søren Kierkegaard's was concerned that any notion of objectivity viewed a researcher as an observer set on discovering general laws about human behaviour. For Kierkegaard objectivity was an illusion and instead:

'Subjectivity and concreteness of truth are together the light. Anyone who is committed to science, or to rule-governed morality, is benighted, and needs to be rescued from his state of darkness.' (Kierkegaard, 1974: 18, cited in Warnock, 1970)

Such strident words strike a warning for researchers and present a rallying cry to those who reject the positivist standpoint. The search for understanding in

social science makes the application of scientific methods and any attempts at generalisations an ambitious task. As Cohen *et al* (2007: 17) state:

'The precise target of the anti-positivists' attack has been science's mechanistic and reductionist view of nature which, by definition, defines life in measurable terms rather than inner experience, and excludes notions of choice, freedom, individuality, and moral responsibility, regarding the universe as a living organism rather than as a machine.'

Thus, epistemological positions need clarifying at the outset of research. The positivist position sees reality as determined through rational and systematic research, be it concerned with human action, events or the relationship between them. The interpretive research paradigm does not accept that there is a reality to be analysed and definitive conclusions to be reached. Instead this position views any interpretation as a construct of the human mind and these vary from one person to another. The observers are themselves part of this 'reality' and as such may interpret aspects very differently according to their own viewpoints/cultural backgrounds, etc. The key aspect to note therefore is a level of subjectivity which may be present in any interpretation of research findings, i.e. for the researcher to be reflexive.

Max Weber's 'Verstehen' approach likened colloquially to 'putting yourself in someone's shoes' requires an interpretative understanding of social action in order to arrive at a causal explanation of its cause and effects (1947). It is such a causal explanation that is sought here. Hermeneutics also has links to this research, as it focuses on the interaction and the language and seeks to understand actions through the eyes of the participants. As Habermas suggests research methodology seeks to clarify, understand and interpret the

communication of 'speaking and acting subjects' (1974: 8). To do so, requires the consideration of the impact of power relations. Bernstein (1974) observes that meanings are negotiated and not necessarily equably, so that a factor for researchers to consider is the power of some individuals to impose their own interpretations on others. Such interpretations are also subject to the influence of external forces as Layder (1994) points out, highlighting the dangers of an interpretative approach.

The critical educational theory approach, views both positivist and interpretive paradigms as reductionist; seeking to explain or understand situations without questioning or wishing to change them. Critical theory heavily influenced by Habermas (1984) and the Frankfurt school (Horkheimer, 1972, and others), aims not just to understand situations, but to change them. It seeks to empower and enlighten and to bring about greater equality. Thus an over-riding purpose of critical educational research is to reduce inequality. A critique of this stance is that an overt political agenda, may overly obscure any attempt at 'objective' judgements. Morrison (1995) argues that the task of the researcher is to be dispassionate and objective, rather than seeking to bring about change, but as Cohen et al (2007: 30) state: *'because their focus is on an ideological agenda, they themselves cannot avoid acting ideologically'*.

In seeking to avoid some of the traps of the three main approaches to researching human behaviour, positivism, interpretivism and critical theory, a fourth paradigm of educational research has evolved, that of complexity theory (Morrison, 2002). In contrast to views of linear predictability and cause and

effect, this viewpoint highlights uncertainty and that phenomena should be looked at holistically in order to understand the dynamic interaction of different aspects. As Capra (1996) and Lemke, (2001) argue, educational research should view the web of connections; for individuals and communities exist in symbiosis and the relationships are a necessary part of the area of study. This theory suggests the need for case study methodology, action research or other forms of research which entail participation and facilitates multiple perspectives. It is thus the opposite of reductionism and as Cohen *et al* (2007: 34) state: *'heterogeneity is the watchword'*.

Philosophical positions in research are also linked to different ends of the research methodology spectrum: quantitative or qualitative methods. Put simply, positivism has largely been aligned to quantitative methods and intrepretivist approaches to qualitative methods. However distinctions of quantitative or qualitative methods themselves are misleading. The often described divide between them, Layder (1993) maintains, is a false distinction and might more helpfully seen as a continuum of methods, rather than a contrast, one from which a researcher can select. The key aspect to consider is 'fitness for purpose' of research methods rather than alignment to a specific position. Overall as this research seeks to achieve a holistic picture of a network of schools and as such the dynamic interaction of key stakeholders; in essence, it is more akin to complexity theory.

5.2 Research Design

Based on clarification of the aims of the research, the next step is to decide on a rationale for a research design. The following factors need considering:

- 1. Research question
- 2. Constraints
- 3. Purposes
- 4. Foci
- 5. Ethics

Exploring each of these will provide a rationale for the research design.

5.3 Research question

As stated at the beginning of this chapter, the principal research question is:

What key factors have contributed to the implementation of cooperative learning in the Bransholme Networked Learning Community?

A number of factors have been identified through the literature review in Chapter 3 and these will be tested out in the context of a specific NLC. In order to do this, certain underlying aspects needed to be examined:

- a) The views of staff and pupils to the use of CL, for as Kagan (1994) has emphasised, for CL to be successful, teachers need the 'will' and the 'skill' to use it;
- b) The support teachers received in implementing CL.

The other key aspect that required close examination was the context, i.e. the network of schools, to determine particular features that led to CL being implemented. This would help illuminate whether these were unique, and

whether any generalisations could be made in implementing CL more widely. Thus several subsidiary questions arise:

- 3. What are the attitudes of staff and pupils to the use of cooperative learning in promoting effective teaching and learning?
- 4. What types of support have enabled CL to be used?
- 5. What is the nature of the network and how has it evolved?
- 6. What are the views of staff on the power of the network to offset outside pressures and focus on self-determined initiatives?

5.4 Constraints

The constraints on this research are varied, but principally revolve around the specific context: here the network of schools selected, within which key players, headteachers, may either deny or be unavailable to provide important information. During the time of the project (2005-2008), three primary schools closed due to falling rolls and four primary schools had changes in headteachers. In addition, numerous pressures from Ofsted, Local Authorities and Government policy impacted. Turnover of other staff in schools also presented issues. Other constraints concerned access to staff and pupils, the nature of samples selected, such as groups of pupils, and the over-riding control by headteachers of such access.

5.5 Purpose

The purpose of this research is to ascertain the key factors that have led to successfully implementing cooperative learning within the context of a networked learning community (NLC). This is based on data which shows CL is widely used in classrooms in the network, as discussed in the previous chapter. This will, in turn, inform indications for implementing CL elsewhere.

5.6 Focus – a Case Study

As stated above, the focus of research is a case study of a network of schools which has been implementing cooperative learning for a period of over five years. This will help ascertain what is particular about this network and how successful it has been in implementing cooperative learning.

Before further discussing other key factors in educational research design, such as validity, reliability, reflexivity and triangulation, which will support the particular choice of methods, it is first important to explore fully the concept of a case study and its usefulness in providing a comprehensive picture of the specific context.

The concept of case study has received much discussion (Bassey, 1999) in particular the applicability of a 'case' to other instances and thereby its validity as a method of research. Yin (1994) acknowledges a concern from the academic community to a lack of rigour and little basis for 'scientific generalisation' (1994:9). However, as Bassey (1999) shows detailed examination of an instance or case can be illuminating. Sturman (1994) based on a considerable experience of writing case studies has commentated that:

"Case study' is a generic term for the investigation of an individual, group or phenomenon. While the techniques used in the investigation may be varied, and may include both qualitative and quantitative approaches, the distinguishing feature of case study is the belief that human systems develop a characteristic wholeness or integrity and are not simply a loose collection of traits. As a consequence of this belief, case study researchers hold that to understand a case, to explain why things happen as they do, and to generalise or predict from a single example requires an in-depth investigation or the interdependencies of parts and of the patterns that emerge.' (Sturman, 1994: 61)

Robert Yin (1994) describes case study research as consisting of empirical inquiry that:

- 'investigated a contemporary phenomenon within its real-life context, especially when
- the boundaries between phenomenon and context are not clearly evident.' (Yin, cited in Bassey, 1999: 26)

Stake (1995: xi) describes case study as 'the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances.'

Stenhouse (1988) identified four types of case study: ethnographic, evaluative, educational and action research which differ as follows:

- Ethnographic case studies are single cases studied in depth by a participant observer.
- Evaluative case studies are cases studied in depth with the clear aim of providing those with managerial responsibilities information in order to judge the efficacy of a particular programme or initiative.
- 3. Educational case studies concerns neither specific theory nor evaluation, but aims to examine in depth a particular discourse.
- 4. Case study as action research which contributes to the development of a case by feedback of actions which can guide revisions of that action and is thereby iterative.

In summary case study provides analysis of a 'case' or instance, or what Adelman *et al* (1980: 49) describe as a 'bounded system' in order to provide fuller understanding of the case.

The issue of the extent to which conclusions can be drawn from a 'case' is the subject of much debate (Stake, 1995). Stenhouse (1988) however sees the value of samples for research purposes and cases as complementary approaches. Two opposing positions of positivist or interpretive approaches underpin this debate. In addition, the language used to describe any findings is itself subject to debate. As Bassey points out (1999: 43):

'the interpretative researcher sees language as a **more or less** agreed symbolic systems, in which different people may have some differences in their meanings; in consequence the sharing of accounts of what has been observed is always to some extent problematic.'

To sum up this brief discussion, any interpretation must be viewed with caution and any researcher should be alert to the influence of their own preconceptions. In essence, issues of reflexivity should be fore-grounded in any discussion of research findings.

The question of to what extent generalisations can be reached particularly from the study of one instance or case is a complex one. Bassey (1999) makes a helpful contribution to this debate by differentiating three types of generalisation: scientific, statistical and 'fuzzy generalisations' (1999: 44). Scientific generalisations are what can be deduced from scientific or physical laws (e.g. Boyle's law) and relate to physical objects or matter. Such generalisations can be tested rigorously and may be held to be universal. These cannot be applied to social situations due to their complexity and varied nature. A group of human beings may behave very differently, for example in one cultural context to another.

Social scientists, in contrast, attempt to make generalisations through statistical samples. The aim is to attempt to show that findings achieved from one sample of the population should be the same from another sample drawn from such a population at the same time. This is termed 'statistical generalisation'. In contrast to this arena of research obtained from a 'sample' there is the alternative method of research: that of a study of singularity or a case. The latter cannot provide statistical generalisations, however Bassey (1999:44) maintains generalisations can be made albeit 'fuzzy generalisations'. This is a prediction that arises from empirical research and says something may happen without offering any measure of probability. It is as Bassey describes 'a *qualified generalisation, carrying the idea of possibility but no certainty*' (1999: 46). Such a concept of fuzzy logic originates from Kosko (1994) who maintains that 'everything is a matter of degree' (1994: 18).

Helen Simons explores the paradox of the study of a single case and the search for generalisation and says:

'One of the advantages cited for case study research is its uniqueness, its capacity for understanding complexity in particular contexts. A corresponding disadvantage often cited is the difficulty of generalising from a single case. Such an observation assumes a polarity and stems from a particular view of research. Looked at differently, from within a holistic perspective and direct perception, there is no disjunction. What we have is a paradox, which if acknowledged and explored in depth, yields both unique and universal understanding.' (Simons: 1996: 225) Case studies therefore explore one instance in depth and explore significant features in order to draw conclusions. They involve study conducted in the context often through observations or interviews of all involved, or as Bassey summarises: *'Case study is study of a singularity conducted in depth in natural settings'* (1999: 47). Such studies may not be able to offer universal generalisations, however such detailed study may offer propositions based on empirical study which show how these may be applied more widely.

5.7 Ethical issues

Underlying any discussion of ethical issues are four main principles to be strictly adhered to regarding qualitative research (as described by Diener and Crandall, 1978). These are firstly, ensuring no harm ensues to participants; secondly there is no lack of informed consent; thirdly there is no invasion of privacy, and fourthly ensuring no deception of any kind is involved. Full consideration of ethical issues will be discussed in relation to chosen methods. All of these have been subject to the scrutiny of the appropriate Ethics Committee (see appendix 1).

To summarise: specific ethical issues that needed to be addressed with this research involved:

1. Interviews: ensuring that interviewees were fully informed of the purpose of the research and given the opportunity to consent to take part and to agree to the interview being tape recorded. In addition, it was important to ensure that participants had the facility to review transcripts of interviews and make amendments to avoid any possible

misinterpretations. In the case of interviewing pupils, in addition to obtaining informed consent, it is important to establish trust and to ensure the use of clear straightforward language with open-ended questions that are age-appropriate. Piloting of interviews with pupils demonstrated that some pupils can dominate groups and that it is important to use a mix of open questions to the group and directed questions to individuals.

- 2. Questionnaires: it was important to ensure that the purpose of the questionnaire was clarified, anonymity was guaranteed and that questions were carefully worded to avoid bias and possible sensitivity. Piloting showed that a mix of questions types that included opportunities for comments allowed participants to fully represent their views.
- 3. Observations: potential issues of remaining detached and not influencing events required careful consideration. Thus, it was important to ensure that pupils were aware of the purpose of the observer's presence but were unaffected by it. Piloting demonstrated the importance of having a clear determined focus for observation of a particular group of pupils with a pre-determined structure.

5.8 Research integrity

Before presenting a rationale for the choice of research methods, issues of validity, reliability and reflexivity need to be considered in relation to the specific instruments chosen. Validity in brief encompasses ensuring that a chosen instrument measures what it purports to measure. However this belies the complexity of the concept. In qualitative research validity concerns notions of

honesty, richness and scope of the data and persons involved and the extent of triangulation together with the level of objectivity of the researcher. In quantitative research validity can be improved through careful sampling, appropriate instruments and statistical analysis. Although as Cohen et al (2007: 133) state 'it is impossible for research to be 100 percent valid', there is a measure of standard error which should be inbuilt and acknowledged. Issues of validity also cover a broad number of areas, such as internal and external validity, construct validity and face validity to name but a few. Therefore it is important to locate discussions of validity within the research methods chosen, which will be further explored. Geertz's (1973) notion of 'thick description' is particularly useful in relation to qualitative methods which relates to providing as accurate and full a picture of the context as possible. Ensuring threats to validity are minimised can be partially achieved in the design stage by consideration of the appropriateness of the time scale, the methodology selected to answer the research questions and demonstrating appropriate In addition reducing the Hawthorne effect is a further instruments. consideration by minimising reactivity, and ensuring that participants are not led into agreeing with a researcher's standpoint or bias, for example through the wording of questions.

A further key aspect is that the researcher is a part of the researched world – i.e. the notion of reflexivity. In the light of postmodernist standpoints since the 1980s (e.g. Denzin, 1994) which emphasise the multitude of interpretations that can be gleaned from any social situation, greater attention to the role of the researcher as a component part of the research being gathered has been

drawn. The researcher is not only instrumental in obtaining data, but also in interpreting it. Thus the researcher's own stance may influence the findings. In order to minimise the potential bias, the researcher needs to examine his or her stance, but also to seek methods of distancing him/herself from it. Measures to enhance consideration of this include using professional colleagues to review the data, such as interview transcripts and any interpretations made. In addition respondent validation, providing those with whom research has been conducted with the findings to corroborate can ensure that the researcher's interpretation concurs with the experiences of the research participants. Finally the use of triangulation, or more than one method of research, to provide verification of findings can support any conclusions drawn. As Lincoln and Guba (1985:315) point out triangulation is a check on data and constructions of data. As Cohen *et al* (2007: 141) state:

'triangular techniques in the social sciences attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint and in so doing, by making use of both quantitative and qualitative data.'

Reliability in brief involves replicability: can the same results be obtained from the same methods if repeated? In quantitative research it principally involves ensuring consistency, precision and accuracy over instruments used. Certain other aspects are covered by this term in relation to research methodology: the concept of consistency over time and similar samples; the use of equivalent forms of tests or instruments as well as inter-rater reliability, i.e. agreement between researchers (where more than one is involved) on aspects such as coding and ascribing aspects to codes. Internal consistency in relation to the test/retest method can be supported through the split half method where tests are divided equally and each half marked separately and then compared to check on correlation. Other statistical methods which support this include the Cronbach alpha, or alpha coefficient of reliability which provides a correlation of each item with the sum of all other relevant items and provides internal reliability amongst the items. All of these methods of reliability are based on assumptions that data and findings should, and can, be controllable, predictable, consistent and replicable through minimizing any external types of variation.

In qualitative research, use of the term 'reliability' is questioned. Lincoln and Guba (1985) prefer to substitute it with terms such as 'credibility', 'neutrality', 'consistency', 'trustworthiness' and particularly the notion of 'dependability'. Denzin and Lincoln (1994) view reliability in qualitative research as addressed by three factors, stability of observations (would the same interpretations have been reached at a different time or place), parallel forms (would there have been consistency in observations if different aspects had been focused on), and inter-rater reliability (if another observer with the same framework would have found the same). Cohen *et al* (2007; 149) summarise the notion of reliability in qualitative research as:

'a fit between what researchers record as data and what actually occurs in the natural setting that is being researched, i.e. a degree of accuracy and comprehensiveness of coverage.'

The notion of a faithful representation is crucial and in addition, in order to generate dependable findings, there is a need to ensure a holistic record that strives to encompass the multiple interpretations of situations by social actors. This can be supported by the use of the following: respondent validation - verifying accurate records; debriefing by peers where more than one researcher

is involved; triangulation; prolonged engagement in the field providing persistent observations, reflexive journals and independent audit trails of results from original data.

From this review of ensuring integrity in research the following key factors need to be taken into account:

- That a full and 'rich description' (Geertz, 1973) is obtained of the case study which will include the context, i.e. the schools being studied.
- That methods chosen are appropriate for the data required
- That issues of reflexivity are fore-grounded by reducing possible researcher's bias through the use of triangulation of data and the use of professional colleagues to view the data and any interpretations made, including cross-checking results with the respondents.
- That the results are reliable, demonstrating a degree of honesty and that they produce a holistic and accurate record.
- That all ethical considerations of informed consent and anonymity and eliminating any possible harm to those involved is paramount.

5.9 Selecting Research Methods

In order to select appropriate methods it is first necessary to revisit the research questions. The principal research question is:

What key factors have contributed to the implementation of cooperative learning in the Bransholme Networked Learning Community?

As this research involves a case study of a group of primary and secondary schools, it also requires an in depth picture of the network, how it began,

evolved and its current status in order to ascertain the impact of this network on the implementation of cooperative learning. This will help to answer the following research questions:

- What is the nature of the network and how has it evolved?
- What are the views of staff on the power of the network to offset outside pressures and focus on self-determined initiatives?

This in turn will support wider generalisations to ascertain whether communities of practice, or networks, support innovations in pedagogy, and specifically cooperative learning. Before doing so, is first important to explore:

- Participants' views on the use of cooperative learning in promoting effective teaching and learning
- Effective methods of support for teachers in implementing cooperative learning

Chapter 2 provided a review of the extensive research that exists into the use of cooperative learning and concluded with 10 key factors that resonated with a vast array of research into effective implementation. This research will also seek to verify these factors and the extent to which they concur with the findings of the schools in the network.

In summary this research requires the following data to be gathered:

- 1. A holistic picture of a networked learning community
- 2. Factors in the implementation of cooperative learning

It is therefore useful to take each of the above and review appropriate methodology.

5.10 Gathering data on the networked learning community

In gaining a holistic picture of the NLC, it will be useful to gather the views of key actors, in this case headteachers. As one of the constraining factors in this research has been the change in personnel, particularly headteachers over the last five years, it will also be helpful to gain views of recently retired headteachers. Obtaining such views can be carried out in two main ways: questionnaires and interviews. Questionnaires are useful in surveying the views of a large number of people and whilst questions can be closed and open-ended, they do not offer the opportunities for the researcher to follow up the respondents' views. In contrast the use of interviews offers the benefits of exploring in greater depth respondents' views. Of key significance is the fact that with interviews, meaning is co-constructed – they are dialogues and as Kvale comments (1996: 14) an interview is precisely that 'inter-view' or an exchange of views between two or more people. This emphases the socialsituatedness of research data rather than data obtained in a vacuum. The interview therefore offers the possibility to allow for a greater degree of spontaneity and flexibility.

Interviews cover a continuum of types, from a high degree to a very low degree of structure, the differences being the extent to which the interview sticks to the specified questions. Semi-structured interviews offer some degree of

consistency in asking the same questions to different interviewees, but providing opportunities for additional follow up questions. In formulating interviews, it is important to bear in mind some basic guidelines. Bryman (2001) identifies the following:

- Careful consideration should be given to the order of topics needed
- Questions should be formulated to help answer research questions
- Language used should be simple, i.e. comprehensible and relevant
- There should be no leading questions
- Face-sheet information of a general kind should be recorded in order to contextualize answers.

Kvale (1996:133-5) suggests nine different types of questions that most interviews will contain:

- 1. Introducing questions
- 2. Follow up questions (to elaborate on what has been said)
- Probing questions (following up on what has been said through direct questioning)
- 4. Specifying questions (requiring specific information)
- Direct questions (best put nearer the end of the interview in order not to influence the direction of the interview)
- 6. Indirect questions (indirectly seeking a person's viewpoint)
- Structuring questions (showing that the interview is structured in a certain way)
- 8. Silence (pauses to show the interview can reflect and amplify an answer)

9. Interpreting questions (clarifying a person's response and meaning).

The actual conduct of the interview also needs to be given careful consideration in advance. Powney and Watts (1987:51) argue that '*each interview is dependent on the skills of the interviewer and the willingness of the interviewee*'. The skills of the interviewer are crucial to the overall success and as Bryman (2001, p 319) states: '*one of the main ingredients of the interview is listening – being very attentive to what the interviewee is saying or even not saying.*' It is therefore not only verbal communication which is important, but also non-verbal communication. Body language can indicate a viewpoint and particularly a level of unease or anxiety. Interviewers should endeavour to be ethically sensitive so as not to put undue pressure on interviewees and ensure that the following ethical considerations are adhered to:

- All anonymity/confidential assurances should be made clear at the outset
- Interviewee's explicit permission must be obtained to tape an interview
- Interviewees have the right to vet a transcript of the interview
- Interviewees may terminate the interview at any time
- Interviewees can refuse to answer any question

Wherever possible, the interviewer should aim to eliminate bias. One particular element to bear in mind is what has been termed 'reactive effects'. This can also be described as 'yeasaying/naysaying effect'. In other words the interviewee half guesses the response the interviewer is looking for and responds accordingly. In addition the respondent may answer according to what is socially desirable, not what he/she actually believes to be the case. Gavron (1966:159) stated '*It is difficult to see how this (i.e. bias) can be avoided*

completely, but awareness of the problem plus constant self-control can help'. Oppenheim (1992) suggests several causes of bias when interviewing such as biased sampling, poor rapport between the interviewer and interviewee, poor prompting, changes in the ordering or wording of questions and selective recording or interpreting of data. All these factors make the careful wording of questions and the impartial delivery of the interview vital to the validity of the results. Whilst piloting interview questions may help eliminate some issues, it is apparent that the skill of the interviewer in handling an interview is a key consideration in the extent and quality of the data obtained.

A further consideration when interviewing is the method of recording. The most common approach is to tape record interviews. However, consent needs to be obtained to do this from the interviewee and this sometimes can be problematic. The advantages of taping the interviews ensure that a full record is provided and does not rely on the interviewer's memory or skill at note-taking. It also allows repeated examination of the interviewee's answers, thereby providing fuller interpretation. It can also open up the data to wider scrutiny and thereby help eliminate any suggestions of researcher bias. Audio-taping however in itself has limitations in that it does not record the richness of body language and non-verbal responses. Cohen, Manion and Morrison (2007) thus suggest the use of video-recording to capture such richness. Nevertheless any transcript of a recording as Kvale (1996) suggest incorporates the prefix 'trans' – which indicates it is a change of state – from oral to written and therefore already present interpreted data. It should also be borne in mind as Cohen et al (2007:367) point out

'transcriptions are decontextualized, abstracted from time and space, from the dynamics of the situation, from the live form, and from the social, interactive, dynamic and fluid dimensions of their source; they are frozen.'

An additional factor is that transcripts are very time consuming – estimates vary from five to ten hours for every hour of interview. In addition, transcripts yield vast amounts of paper to be analysed.

In obtaining the views of pupils, the use of focus group discussions will provide a useful tool in providing an opportunity to talk to sampled groups. Whilst individual pupils may be reluctant to talk freely with an unknown researcher, groups can discuss open-ended questions regarding their views on the use of cooperative learning and thus obtain a collective view.

The key aim of focus group discussions is that people who have had similar experiences can be interviewed about it in a fairly unstructured way. There is thus a clearly pre-determined topic and range of questions but the emphasis is on the interaction within the group and the joint construction of meaning. Interviewees are able to debate issues and are able to bring out aspects they view important. As with one-to-one interviewing, these are best taped and transcribed in order to capture the full extent of the interview.

A further consideration is how many focus group discussions to conduct and Calder (1977) proposes that when the researcher reaches the point that he or she can anticipate responses, they have conducted sufficient interviews. Nevertheless considerations of time often make this impractical and the aim should be to present a representative sample. The size of groups also needs

consideration and Morgan (1998) suggests that the typical size is six to ten members. The interviewer (or moderator) should ensure that his or her involvement is minimised in order to get to the core of the participants' views. It is therefore common for a number of pre-determined general questions to guide the session to be used but to allow some element of flexibility. When selecting participants it is important to ensure that they consent to be involved and are assured of anonymity as well as the purpose of the discussion. As the researcher in this project wishes to work with children these issues are particularly important. The aim is for a cross-section of children from a sample of schools to be involved in order to obtain representative views.

Interviewing children presents further issues for the researcher to consider. It is important to establish trust and to put them at their ease. The use of clear and straightforward language is important and to ensure that the questions are age appropriate. The use of group discussions can help to eliminate some of the issues of reticence and also considering the setting used – as familiar as possible. The use of open-ended questions with children will also help avoid them answering as they feel is appropriate and avoid a single type of response. Ethical considerations include ensuring pupils freely consent to being interviewed and understand the purpose and where appropriate with children of primary school age, that parental consent is obtained. (See appendix 1 for details).

The limitations of focus groups concern the researcher's lack of control over the interviews and to what extent he or she should guide the proceedings without

influencing them unduly. The data can also be complex to analyse and timeconsuming to transcribe. There are also problems if different members of a group may either dominate the group or be reticent to speak. Here the skill of the interviewer in chairing the discussion and encouraging full participation is important.

Key considerations in ensuring reliability when conducting interviews include ensuring that the same questions are used in the same order with all participants, and maintaining an accurate and honest record of responses. Using a pre-determined question schedule, the tape-recording of responses and providing transcripts of responses to the interviewees, helps provide integrity of results. In addition, as previously mentioned, it is important to consider the researcher's role when carrying out interviews, in order to eliminate possible bias, where relationships between the researcher and interviewee may influence results. In this case, the researcher knew all the interviewees, some very well and thus there was a danger of the interviewee responding in a way the researcher wanted, and of the researcher influencing responses. Every attempt was made to ensure that questions were designed in such a way to avoid this and carefully piloted. In addition through the triangulation of data from various sources, issues of reflexivity can be minimised and a strenuous effort to ensure rich and honest data.

5.11 Factors in the implementation of cooperative learning

The second aspect of the research involves analysing the key factors that have supported the implementation of cooperative learning. This can be obtained

through ascertaining the views of staff and pupils involved and through verification by observing practice in schools. In addition to interviews with headteachers and facilitators, the use of questionnaires will be helpful In order to obtain the views of a large number of stakeholders. Questionnaires are fairly easy to administer; they can encompass a wide number of respondents; they do not require the presence of the researcher and are relatively easy to analyse. In contrast there is a risk of respondents having difficulties in answering questions, the possibility of missing data, no opportunities for following up views and often questionnaires have a low response rate. In order to minimise some of the issues, careful consideration needs to be given to the following:

- Ethical considerations in administering questionnaires consist of ensuring the purpose of the questionnaire is clarified, providing opportunities for informed consent, ensuring that completion is voluntary, ensuring anonymity, that questions are carefully worded and avoid bias and possible sensitivity.
- Ensuring that the design clearly relates to the overall purpose of the questionnaire and the type and wording of questions relate to the research questions.
- Consideration of length of the questionnaire and that it is relatively easy to complete.
- 4. The wording of the questions ensuring that these are unambiguous and avoid sensitive issues where possible. It is also necessary to

ensure that terminology is clear and that there is no possibility of inviting a certain response, i.e. leading questions.

- The layout of the questionnaire should appear easy, attractive and interesting, allowing sufficient space for answers.
- 6. Provide a mix of closed and open-ended questions to provide opportunities for the respondents to state their views. These both present advantages as closed questions generate responses that are amenable to statistical analysis and are quicker to code. These include multiple choice answers and rating scales. Although rating scales are useful tools (commonly the use of Likert scales) they can invite a tendency to opt for a mid point of a 5-point or 7-point scale, however if choosing a even number of scale points may require the respondent to indicate their preferred viewpoint more clearly. Open-ended questions can provide opportunities for respondents to indicate their views more fully, although these are more difficult to code and analyse. It is therefore often preferable to provide a mix of both types of questions.
- 7. The sequence of the questions needs careful consideration beginning with factual questions, moving to closed questions and finally to more open-ended questions that seek responses on views and perceptions.
- 8. Avoiding low response rates through careful introduction of the purpose of the research and following up those not returned where possible.

Many of theses issues can be avoided through careful piloting and then reassessment of the appropriateness of the questionnaire design, wording of questions and elimination or addition of questions.
In summary questionnaires provide a useful tool for ascertaining the views of a number of stakeholders, particularly when used alongside other methods. In particular, they help to provide valuable triangulation with data from interviews and when carefully designed, help to avoid issues of reflexivity that are more problematic when interviewing.

Verification of the current position through observations in classrooms will also provide an additional triangulation of data. The advantages of observation in the classroom are that it provides the researcher with the opportunity to gather 'live' data from natural surroundings. The researcher is thus not relying on second-hand versions described by others, but witnessing aspects personally. This in itself is problematic as whilst the researcher can observe 'facts' i.e. count the frequencies of certain stated behaviours, there is always the probability of interpretation occurring. As Cohen et al (2007: 396) state 'what we observe depends on when, where and for how long we look'. The other consideration is the number of observers used. If the researcher does the observations all first hand there is an element of consistency. However if a common method is agreed, further observers can provide good triangulation of evidence. Observations vary in type from structured to unstructured. Α structured observation will have already agreed categories and frequencies set out in advance. A more semi-structured observation will have an agenda of issues but will gather data in a less systematic way. An unstructured observation will have no pre-determined categories, but will first observe events and then decide the relevance to the research. The other key difference is

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participant or non-participant observation, although Adler and Adler, (1994) would argue that all observation is to some extent participant as we cannot remain detached from the world we are observing. Traditionally observation has been carried out as non-interventionist, i.e. the observer ensures that he or she does not impact or interfere with the events being observed.

It is also important to bear in mind some of the pitfalls of observations which carry the risk of bias. Wilkinson, (2000), Robson, (2002) and Shaughnessy *et al* (2003), cite the importance of considering the following:

- Selective attention of the observer which may only witness certain aspects and which may note particularly aspects which relate to the observer's own interests.
- Reactivity the participants may behave differently due to the presence of the observer.
- Attention deficit the observer may be distracted and miss certain aspects.
- Validity of constructs what counts as valid evidence needs to be carefully decided in advance.
- Selective data entry recording what the observer views as significant.
- Selective memory when writing up notes after the event particularly if there is a considerable time lapse
- Observer preferences and bias observations are coloured by particular views and preferences.
- Expectancy effects the observer has expectations of verifying existing hypotheses which may influence observations.

- Nature of recordings detailing the richness of events as far as possible.
- Number of observers issues of consistency for different observers looking at events thus requiring training and clear definitions of what constitutes certain behaviours.
- Problems of inference observations may not provide a full picture and what is observed on one occasion may not be representative. It is therefore important to triangulate evidence.

These issues relate to the reliability and validity of the observations. With regard to validity, one of the key issues is to ensure that what constitutes certain behaviour characteristics are clearly defined and the issues of who is to be observed, i.e. which children or groups of children will be focused on in addition how often. This also helps to ameliorate possible issues of reflexivity and any possible bias of the researcher. Careful pre-determination of categories to be observed and procedures to be adopted in noting them, help to distance the researcher from the behaviours witnessed. With regard to reliability, the key aspect is consistency of approach, particularly if more than one observer is involved. It is also important to write up the notes immediately or very soon after the event based on jottings made at the time.

Observations in the classroom will not only confirm the use of CL, but also provide verification of significant themes in the successful adoption of CL in classrooms identified from the literature review (as discussed in Chapter 2, section 2.8). Observations will focus on the key characteristics of what is agreed as cooperative learning (as discussed in Chapter 2, section 2.2), as follows:

- Pupils on task behaviour
- Pupils all participating on the ascribed task
- Pupils helping and supporting each other
- Pupils contributing ideas to each other

When carrying out observations, the procedure to be adopted should be carefully decided in advance and as the context of the observation is important, this needs to be noted, as well as discussing in advance with the teacher the particular aims of the lesson. It is also necessary to decide how many and which groups of pupils to focus on and how to record the behaviours observed. The key consideration is to pilot a structured observation in order to decide on:

- The frequency of observations
- The length of the observation period
- Defining what counts as fulfilling categories (i.e. 'on task behaviour')
- The coding system.

How observations are recorded can vary from field notes to tally charts to video recordings. Whilst the latter may present a more holistic picture of the events for later analysis, it may also impact on events with children interacting differently for the benefit of a camera. In addition, the issue of gaining consent for video-recording may be prohibitive. Due to the extent of data from a number of methods to be gained and analysed, issues of timescale make this difficult. A pilot will therefore be carried out using a pre-determined schedule and

frequency chart to include a tally of behaviours and relevant comments in the form of jottings.

5.12 Eliciting key factors in implementing CL

In addition to information gained from observations in classrooms to verify key factors in implementing CL as identified from the literature review, a more probing enquiry needs to be undertaken. As summarised in section 2.5 of chapter 2, a growing body of research has highlighted common themes that impact on the successful introduction of CL. Questions therefore would be devised to ascertain whether these factors resonated with the implementation of CL in this network of schools. These questions would be specifically targeted at facilitators during semi-structured interviews, due to their in-depth understanding of CL.

How teachers are supported in implementing CL is a further significant factor. In order to do this, it is also necessary to ascertain the views of teaching staff in order to find out what they viewed as effective. Questionnaires will therefore include questions that seek to discover teachers' views.

In summary the table below provides an overview of the selected methods

Table 5.1:	Overview of	research r	nethods
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Data Required	Methods Selected
A holistic picture of the networked learning community	Semi-structured interviews with headteachers and facilitators Facilitators' questionnaires
Factors in implementing cooperative learning	Semi-structured interviews with headteachers and facilitators Questionnaires – headteachers, teachers Observations in classrooms Minutes of meetings of facilitators Focus group discussions of pupils

5.13 Data analysis

When selecting and planning appropriate research tools, it is also important to have a clear overview of methods of analysing the data. This research requires the analysis of interviews which aims to provide a holistic picture of the networked learning community. This will aim to achieve two aspects: firstly to test out the findings from the literature review regarding the features of successful networks, and secondly to ascertain any unique features of this network that impacted on the introduction of cooperative learning. With regard to methods of support for implementing CL, again, two aspects will need to be analysed: firstly to test out common findings from the literature review, and secondly to ascertain any specific unique features. In summary, therefore this analysis requires a combination of analytic induction and grounded theory which the following section will discuss.

Analysing qualitative data is a complex process and needs careful consideration. Cohen *et al* (2007: 368) provide helpful key stages in the process of analysis as described

- 1. generating natural units of meaning
- 2. classifying, categorising and ordering these units of meaning
- 3. structuring narratives to describe the interview contents
- 4. interpreting the interview data.

Miles and Huberman (1994) suggest twelve ways of generating meaning from transcribed interview data:

- 1. Counting frequencies of ideas, words, themes etc.
- 2. Noting patterns and themes that are repeated
- 3. Trying to make sense of the data using intuition to reach a conclusion
- 4. Clustering items into categories
- Making metaphors including patterns and connecting data with theoretical standpoints.
- 6. Differentiate ideas to move away from the drive to integrate data
- 7. Generalise from emerging themes.
- Factoring bringing a number of variables under a smaller number of hypothetical variables.
- 9. Identifying relationships between variables.
- 10. Finding inconsistencies.
- 11. Building a logical chain of evidence noting causality.
- 12. Making conceptual coherence.

Whatever the precise process used, one of the key aspects for the researcher is to immerse him/herself in the data (Brenner et al, 1985). A further important aspect is the coding of responses in interviews. Kerlinger (1970) defines coding as the translation of responses to specific categories for the purpose of analysis. Deciding on the coding to be used is, however, problematic in itself and at the core of this are two different methods: grounded theory where the categories arise from the data itself, or a predetermined conceptual framework which is based on the findings from the literature review. Grounded theory is emergent rather than predetermined or based on any previous hypothesis and is based on the premise that patterns and theories are implicit in data and are waiting to be uncovered. Glasser and Strauss (1967) suggests that grounded theory is systematic generation of a theory from the data using methods of theoretical sampling, coding constant comparison and the identification of a core variable. Grounded theory arose out of quantitative methods and brings to qualitative data the more systematic analytical techniques used in the former. However in opposition to more quantitative positivist research, grounded theory does not 'force' data to fit into a predetermined theory; the theory arises from the data.

In grounded theory there are three types of coding: open, axial and selective coding. Open coding involves identifying units of analysis to code for meanings, actions etc. Axial coding seeks to make links between codes and categories and looks for interrelationships of categories. Selective coding involves identifying a core code. Cresswell (1998:57) states that in selective coding, the researcher identifies a 'story line' and then writes the story that integrates the

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categories and the axial coding model. The use of these types of coding enables constant comparison so that the researcher can compare the new data with previous data and categories so that the categories have to be modified until all the data is analysed. The advantages of constant comparison are discussed by LeCompte and Preissle (1993) who indicate that this enables social phenomena to be compared across categories giving rise to new dimensions and categories. Such a process is iterative and can begin from the beginning of the process of data collection and continue throughout.

Critics of grounded theory however find the complexity of the approach problematic and Silverman (1993) for example suggests that it fails to acknowledge implicit theories that guide the early stages of research and that data cannot be theory neutral and whilst it may be useful in identifying categories, it may be limited in terms of explanations. Thomas and James (2006:790) critique extensively the grounded theory approach and draw out the potential issue of fracturing the data from the original, through continual coding and categorisation, stating:

'via such procedures it therefore relegates the original voice – the narrative – of both the respondent and the discussant in the research exercise. By the superimposition of method, and the ultimate production, supposedly, of theory, it implies a dismissal of the direct validity and import of people's accounts.'

The use of a combination of grounded and analytic induction in this research may provide some of the benefits of both approaches. Analytic induction begins with a rough definition of a research problem and proceeds to a hypothesis. This is then tested by the data and if they are then inconsistent, the hypothesis is redefined and the process continues until there are no inconsistencies. Thus for the benefits of this research: the data will be tested against the findings of the literature review which forms a set of key criteria that are necessary to ensure effective cooperative learning. In effect, therefore a hypothesis will have been formed. In addition, however, qualitative data will be reviewed from a grounded theory approach to avoid the possibilities of researcher bias or expectancy effects. The triangulation of methods will support this mixed methods of both obtaining data and analysing data to help achieve valid conclusions.

5.14 Analysis of quantitative data

Questionnaires lend themselves to quantitative analysis and this is supported through the use of software and statistical packages, which can help the organisation and manipulation of data into meaningful units. Once questions in a questionnaire are assigned a numerical code they can be entered into a software package using Excel and/or SPSS in order for patterns or statistical significance to be identified, i.e. that findings can be generalised more widely from the sample selected. It is important to be aware as Bryman cites (2001: 226) that relationships are quite different from causality. Different variables may demonstrate some relationship to each other, but that does not necessarily mean that one causes the other. Findings from multi-method research may help alleviate such issues however.

5.15 Research procedure and timetable

Based on the foregoing discussion of research methods, considerations of fitness for purpose have been made, in order to decide on appropriate methodology for this research.

Firstly, in order to gain a comprehensive analysis of the extent and success in implementing cooperative learning, longitudinal data has been sought. Secondly, to clarify the more recent status and use of CL, it has been necessary to capture the views of all stakeholders. The procedure will thus be as follows:

1. Longitudinal research (2004-2008)

Initial evaluation of the extent to which cooperative learning had been implemented and the most effect methods of support, took place in 2004 after schools had been using it for between two and five years. This was carried out in the form of questionnaires completed by headteachers and facilitators in 2004. In order to compare methods of support and attitudes to CL since 2004, the same questionnaire was carried out in 2008, although in 2008, it was decided to seek the views of all teachers, in order to provide a deeper picture of CL across the network. These questionnaires were analysed and compared using an analytical approach.

In addition, during the researcher's work with the schools in supporting the development of cooperative learning, regular meetings were held with facilitators three time a year from 2005 until 2008 and at each of these meetings, schools reported their progress. Minutes were made at the meetings

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and shared with facilitators, which helped to provide a picture of the status in schools. These were analysed using an analytical approach against the research questions. Yearly questionnaires were also administered to facilitators and these were analysed using an analytical approach to provide comparable data.

The researcher's role in supporting the schools during the period from 2005 to 2008, involved facilitating a forum for discussion, problem-solving, and for joint production of a range of resources. As progress was reviewed at the meetings and then various agreed strategies and support for training the staff then took place, this process was part of a continual improvement cycle. In this way it became an iterative process and could be regarded as an example of action research. It is interesting that Kurt Lewin (1946), who is seen as one of the instigators of cooperative learning through his work on group dynamics, is also attributed as coining the term action research (Schmuck, (2006). Lewin regarded action research as a means to solve problems through the researcher studying his/her own practice and seeking to continually improve it. Schmuck (2006: 21) also distinguishes 'traditional research' where researchers 'look at what their subjects do and try not to become personally involved with them' with 'action researchers' who 'look at what they themselves are or should be doing, reflect on what they are thinking and feeling, and seek creative ways to improve how they are behaving.' Nevertheless, as Schmuck goes on to say: 'a good synthesis of traditional research can greatly benefit action researchers.' Through the continual involvement in the process of developing CL in these schools in providing a regular forum for the facilitators, the researcher inevitably

became part of the action research. Further empirical research was carried out, in which the researcher was not as personally involved, in order to verify the position in 2008, and in particular to seek views from a greater number of stakeholders.

2. Verification of status in 2008

This took the form of:

- (i) Interviews with all headteachers.
- (ii) Interviews with all facilitators

(iii) Questionnaires to all teachers which included closed and open ended questions and also contact details if willing to be interviewed.

- (v) Discussions with focus groups of pupils from three schools.
- (vi) Observations of a sample of lessons.

5.16 Piloting

In order to verify the design of research instruments, it is important to pilot tools used. Thus the following pilot studies were undertaken:

5.16.1 Questionnaires

The piloting of questionnaires can aide in ensuring that wording is unambiguous and to gain feedback on the type of questions – their format, e.g. rating scale, open closed, etc. It can also help identify omissions or irrelevant information together with ease of use and length of time taken to complete. This study has used two questionnaires. The first is a questionnaire that was developed in 2004 in order to ascertain the following:

- 1. Length of time the school has used CL strategies.
- 2. Extent the school is positive about the benefits.
- 3. Extent of the training received.
- 4. Extent and frequency of use of CL.
- 5. Most effective type of professional development.
- 6. Further support needed.

The initial draft version was piloted with one deputy headteacher who reported no significant difficulties and thus the questionnaire was used with all schools (see appendices 2 and 3). In order to contrast the position in 2008, the same questionnaire was repeated.

In addition, a further questionnaire was developed in 2008 and was given to all teachers in order to gain a fuller picture of the views of those involved. This questionnaire was piloted with facilitators in order to ascertain any difficulties. 10 facilitators who piloted the questionnaire reported no difficulties in wording and felt that it would be easy to complete. The only suggestion made was to extend the options given for question 3 (see appendix 3). Revisions were thus made in the final version. In addition, the facilitators agreed to give out the questionnaires to teachers, explaining the purpose and to collect them, thus helping to avoid the often low response rate achieved for questionnaires.

5.16.2 Interviews

The interview questions for the interviews with headteachers were piloted by asking the questions to a former headteacher. There were no identified issues

with the questions apart from the need to develop a range of prompts if answers were limited (see appendix 4). Interviews with facilitators were also piloted with a teacher who had previously been a facilitator, but whose role had changed. No specific issues were identified apart from the need to provide greater clarity with some questions and terms such as 'positive interdependence' needed to be explained. Piloting demonstrated no issues surrounding the use of tape recording and the equipment proved easy to use and to download onto the computer for transcription.

Focus group discussions with pupils were also piloted with two groups of pupils in a primary school who had been doing a writing project that involved cooperative learning. This elicited a number of issues to be avoided:

- Ensuring that questions were open-ended and could elicit a range of response. For example when asked 'What do you feel about working in a group?' Pupils answered that they liked it or it made them feel happy and responses were rather limited.
- Ensuring that some pupils did not dominate the discussion by giving everyone the chance to speak and starting each question with a different pupil.
- Taping responses this was not done in the pilot and it was difficult to note the richness of discussion.

As a result of the above a revised interview schedule was produced (see appendix 5).

5.16.3 Observations

Observations in the classroom also needed careful consideration and piloting. The initial observation was designed with clear procedures prior, during and after the lesson (see appendix 6). Two groups of pupils were then selected and the context and layout of the classroom noted. A tally was recorded whenever specific behaviours were noted together with any significant aspects witnessed. Full notes were recorded immediately following the lesson. The procedure overall worked well particularly focusing on a limited number of groups. It was also found that the category 'other' was useful as some behaviours were useful to record and did not fit into the specified categories.

These pilot studies provided a useful means of refining the research tools in order to answer the key research question: *What key factors have contributed to the implementation of cooperative learning in the Bransholme Networked Learning Community*? Ten key factors emerged from the literature review in chapter 2 which were found to be significant in effectively implementing cooperative learning, thus this empirical study will sought to test out these factors to ascertain if they were relevant. The factors are set out in the table below:

	Key Factor	Methods of support
1	The level of interdependence is related to the success of CL (Johnson and Johnson, 1990).	 Structure tasks to incorporate goal interdependence (pupils can only achieve the goal jointly) Include, where appropriate resource interdependence (sharing of resources in groups) Consider the use of group roles
2	The nature of talk or interaction is related to the level of skill in giving explanations, utilising controversy and general discourse (Chang & Wells, 1987, Cohen, 1994, 1999)	 Clear teaching in structuring and giving explanations Provide opportunities for discussion of differing viewpoints
3	The nature of the task impacts on the success of CL and more open- ended tasks are more appropriate together with the sharing of resources Cohen, 1994).	 Structure tasks appropriately Include open-ended tasks where possible
4	The nature and structure of a group impacts on the success including the mix of ability, gender, race and status, with the teacher needing to ensure that low-status pupils are supported and pupil diversity celebrated (Cohen, 1994, Blatchford <i>et al</i> , 2003).	 The nature of groupings Provide heterogeneous groups where possible
5	The need for sufficient teaching of teamwork and communication skills to pupils (Veenman, Kenter & Post, 2000, Gillies, 1996, Blatchford <i>et al</i> (2003).	 A clear programme of explicit teaching of small group and interpersonal skills
6	The use of group rewards alone is unproven in supporting pupil motivation (Cohen, 1994, Bossert, 1988).	 Avoid exclusive use of group rewards Provide positive interdependence to promote intrinsic motivation Ensure team cohesion

Table 5.2 Key Factors in implementing CL

7.	The role of the teacher in managing the class for CL groups requires delegating authority to the groups with careful monitoring (Cohen, Lotan and Leechor,1989).	 Clear guidance to groups on tasks and behaviours provided Monitoring to ensure on task and cooperative group skills displayed
8	Beginning the use of CL with young children is beneficial (Battistich & Watson, 2003).	 Begin training in group skills in the early years Progress from paired work and gradually develop to small group work
9	Physical layout of the classroom needs careful consideration, (Blatchford <i>et al</i> (2003).	 Seating for group work needs to facilitate talk
10	Provision of clear success criteria for cooperative group work, Cohen (2002).	Share success criteria for cooperative group work in addition to academic tasks.

This research therefore sought to do two things. Firstly, to verify findings from the literature review regarding key factors in the implementation of cooperative learning. Secondly, it provided detailed exploration of the 'case' and sought to ascertain whether 'fuzzy generalisations' (Bassey, 1999) could be made. This helped clarify the central research 'itch' as to why cooperative learning is relatively rare in England and how it has become widely used in this network. Full analysis of the data from this study will be presented in the next chapter.

Introduction

As the previous chapter summarised, this research sought to do two key things. The first was to verify the findings from the literature review regarding the key factors in the implementation of CL, to see if they were significant in the context of this research. The second was to examine particular features about this 'case', or network of schools, where CL has become part of everyday practice, in order to see whether generalisations can be made which have wider application. As discussed in chapter 4, the use of CL has become widely used (Jolliffe and Hutchinson, 2007). Based on this usage of CL, the central research question was to discover how this had come about, and to determine: *what are the key factors that have contributed to the implementation of cooperative learning in this networked learning community?* In order to do this, certain underlying factors needed to be examined:

- c) The views of staff and pupils to the use of CL, for as Kagan (1994) has emphasised, for CL to be successful, teachers need the 'will' and the 'skill' to use it;
- d) The support which teachers received in implementing CL.

The other key aspect that required close examination was the context, i.e. the network of schools, to determine particular features that led to CL being implemented. This would help illuminate whether or not these were unique to this network, and whether any generalisations could be made in implementing CL more widely. Thus the following subsidiary questions needed to be addressed:

- 7. What are the attitudes of staff and pupils to the use of cooperative learning in promoting effective teaching and learning?
- 8. What types of support have enabled CL to be used?
- 9. What is the nature of the network and how has it evolved?
- 10. What are the views of staff on the power of the network to offset outside pressures and focus on self-determined initiatives?

These questions centre on two key areas: the first focusing on CL itself, and the second focusing on the network. This chapter will focus on the first of these: key factors in the implementation of CL including the attitudes of staff and pupils to CL, together with any particular methods of support that have enabled its use. This will then inform the next chapter which will examine data related to the network and the impact this has had on the implementation of CL.

6.1 Key Factors in the implementation of CL

In Chapter 2, section 2.5, the review of research into the implementation of CL found ten themes that were significant in the successful adoption of CL in classrooms. These themes indicated that in order to ensure the successful implementation of CL, teachers need to consider the following factors:

- 1. Ensuring interdependence amongst members of groups (Johnson *et al*, 1990, Kagan, 1994).
- Providing support for children in giving explanations, and in utilising controversy to deepen children's understanding (Chang & Wells, 1987, Cohen, 1994a, Cohen *et al,* 1999).

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- Planning appropriate tasks, particularly open-ended tasks to promote CL (Cohen, 1994a, Sharan and Sharan, 1992).
- 4. Considering the nature and structure of groups (Cohen, 1994a, Blatchford *et al*, 2003).
- Providing sufficient teaching of teamwork and communication skills (Veenman, Kenter & Post, 2000, Gillies, 1996, Blatchford *et al*, 2003).
- Promoting intrinsic motivation and considering the appropriateness of group rewards in supporting pupil motivation (Cohen, 1994a, Johnson *et al*, 1990, Bossert, 1988).
- Ensuring authority is delegated to groups with careful monitoring of progress (Cohen, Lotan and Leechor, 1989, Johnson and Johnson, 1999).
- Teaching small group and interpersonal skills with young children (Battistich & Watson, 2003).
- 9. Considering the physical layout of the classroom to promote opportunities to work in small groups (Johnson and Johnson, 1999, Blatchford *et al*, 2003).
- 10. Providing clear success criteria for cooperative group work (Gillies, 2007, Johnson and Johnson, 1999, Cohen (2002).

It was necessary to ascertain whether these factors contributed to the implementation of CL in this research. This would affirm the importance of these factors in implementing CL elsewhere. Interview questions were designed therefore to verify these. These were aimed at facilitators, due to their detailed knowledge of CL, and their involvement in the day-to-day work in their schools. In addition, observations in classrooms, and focus group interviews with pupils provided further insights into whether these factors were in evidence

and provided triangulation of results. Facilitators made some particularly insightful comments about these ten key factors; examples included:

- 1. Facilitator 3 commented in relation to ensuring interdependence amongst members of groups: 'It's the responsibility of the group to tutor the weakest member... it's up to the others to try and make sure that they understand what's being asked of them.'
- 2. Facilitator 4 stated that providing support for giving explanations and utilising controversy to deepen children's understanding is 'essential if group work's gonna be successful and for groups where perhaps those skills aren't already sufficiently developed then staff do have to model them'.
- 3. Facilitator 4 felt that ensuring appropriate tasks to promote CL related in particular to 'problem solving tasks which can be applied to any subject in the curriculum'.
- 4. Facilitator 1 commented that the teacher needs to consider carefully the nature and structure of groups, whilst ensuring an element of flexibility as: *'it depends what you want the outcome to be and what the task is'*. She went on to say, and this was echoed by other facilitators, that *'usually the best ones are mixed teams'*, referring to mixed ability groupings.
- 5. Facilitator 8 noted in relation to the teaching of teamwork and communication skills 'you have to model and in incremental steps' and Facilitator 1 made the point that this was an 'ongoing' process.
- 6. Facilitator 7 felt that it was important to promote intrinsic motivation rather than provide extrinsic rewards: 'or they'll expect it each time and ... it's not sort of promoting lifelong learning... that wanting to do it'.

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- 7. Facilitator 5 agreed that with CL, teachers need to delegate authority to groups and that '*it is a different role … that is one of the areas that teachers are reluctant to give up*' and admitted that '*even if they want to they find it very difficult*'.
- 8. Facilitator 10 agreed that it is important to begin teaching small group and interpersonal skills with young children and commented that if *'primary feeders can do this and get them familiar, and it becomes second nature to them as they get older, it changes the way they have been taught or think.'*
- 9. Facilitator 6 commented in relation to the teacher's need to consider the physical layout of the classroom to promote CL: 'You're thinking about where the furniture is going to go ... and making it so that it's easy for a child to turn to a partner' and Facilitator 10 noted this needs to be flexible: 'we are constantly moving furniture... depending on the task that you are doing'.
- 10. Facilitator 2 commented on the importance of providing clear success criteria for CL: *'when people see good partner work or good group work they actually praise that as a separate skill to the actual outcome'.*

An overview of the responses of all facilitators through interviews is provided in Table 6.1 below:

Table 6.1 Key Factors in implementing CL: summary of interview responses (Facilitators) Implementing CL: summary of interview interview

School	Factor 1 Group Inter- depend ence	Factor 2 oracy skills/ argu- ment	Factor 3 Nature of task	Factor 4 Nature of group- ing	Factor 5 team skills	Factor 6 Intrinsic rewards	Factor 7 Role of teacher	Factor 8 Begin with young children	Factor 9 Physica I layout of classro om	Factor 10 Clear success criteria for CL
1	\checkmark	\checkmark	\checkmark	\checkmark	√*	? (unsure)	\checkmark	\checkmark	\checkmark	\checkmark
2.	V	V	V	V	$\sqrt{*}$	V	V	V	\checkmark	V
3.	V	V	V	V	V	V	V	V	V	V
4.	V	V	V	V	V	V	V	V	\checkmark	\checkmark
5.	V	V	V	V	V	V	V	V	V	V
6.	V	V	? (unsure)	V	V	V	N	V	√*	V
7.	V	V	V	V	\checkmark	V	V	V	\checkmark	V
8.	V	V	√*	V	V	V	V	V	V	V
9.	V	V	V	V	V	V	V	V	V	V
10.	V	V	V	V	V	\checkmark	V	V	V	\checkmark

Key: $\sqrt{}$ = confirmed agreement, * stressed importance of this aspect.

The above summary of responses provides confirmation that these factors were viewed as important by all facilitators and that they were in place in classrooms, with only two facilitators expressing some uncertainty about two factors, for example Facilitator 2 felt that it was possible to include: 'other motivations such as house points, smiley faces that kind of thing, because some individuals do need those'. Facilitator 8 also felt pupils 'would rather earn a reward'. Summaries of responses in relation to each factor are given below in Table 6.2.

Table 6.2 Facilitators' responses to key factors in the successfulimplementation of CL

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	Key Factor	Facilitators' responses
1	Ensure interdependence amongst members of groups	All agreed and 5 commented about the use of roles to support this.
2	Provide support for children in giving explanations, and in utilising controversy so that discussion of different viewpoints promotes more in-depth understanding	All talked about the importance of pupils developing oracy skills with 3 talking about the need for the teacher to model these and 1 mentioned the use of role cards. A further facilitator talked about providing vocabulary to support this.
3	Plan appropriate tasks, particularly open-ended tasks to promote CL	9 out of 10 agreed and one was unsure. 3 said this varies and one said it is best to mix abilities of children with a further 1 saying it works best with problem-solving activities.
4	Carefully consider the nature and structure of groups	All agreed with this but 2 said it can vary and 1 said it is best with mixed ability groupings.
5	Provide sufficient teaching of teamwork and communication skills	All agreed and two particularly emphasised this.
6	Promote intrinsic motivation and consider the appropriateness of group rewards in supporting pupil motivation	All agreed but 3 said both extrinsic and intrinsic rewards helped, plus for one facilitator it was felt competition between groups could be supportive.
7.	Ensure they delegate authority to groups with careful monitoring of progress	All agreed and one said this empowers the children. Another commented that for some teachers this can create issues in controlling the class.
8	Begin to develop use of CL with young children	All agreed with this.
9	Consider the physical layout of the classroom promotes opportunities to work in small groups	All agreed with this and two said this should be flexible.
10	Provide clear success criteria for cooperative group work	All agreed with this and two said this aspect required work in their schools.

In summary, of the identified 10 key factors from the literature review that support the implementation of CL, all the factors were felt to be important in this research to varying degrees. The factors that were unanimously felt to be significant were:

- Ensure interdependence
- Provide support for children in giving explanations, and in utilising controversy productively
- Provide sufficient teaching of teamwork and communication skills
- Ensure teachers delegate authority to groups with careful monitoring of progress
- Begin to develop use of CL with young children
- Provide clear success criteria for cooperative group work
- Consider the physical layout of the classroom (all agreed and 2 out of 10 facilitators said this should be flexible)
- Consider the nature and structure of groups (all agreed with two saying groupings can vary according to task)

Other factors that the majority agreed with:

- Plan appropriate tasks, particularly open-ended tasks to promote CL (9 out of 10 facilitators)
- Promote intrinsic motivation and consider the appropriateness of group rewards in supporting pupil motivation (3 out of 10 facilitators said a mixture of intrinsic and extrinsic motivation helped)

In conclusion, all ten factors were viewed as important with only one that received a mixed response (a focus on intrinsic rewards). The factors that received unanimous support may be considered to be of greater importance in this context.

Two other research methods used also provided verification of these ten factors. These were observations in classrooms and focus group interviews with pupils.

Observations were first piloted in the spring term 2008 and following this a series of five observations carried out in one primary classroom in Year 4 to gain a detailed picture of factors that supported the use of cooperative learning. Details of the observation procedure, together with the ethical considerations are set out in chapter 5 (pages 181-183). Further observations were carried out during the academic year 2008/09 in one secondary school and two further primary schools, within the networked learning community. The following table provides an overview in relation to the ten factors and evidence observed in each classroom.

Obser- vation	Factor 1 Group Inter- depend ence	Factor 2 oracy skills/ argu- ment	Factor 3 Nature of task	Factor 4 Nature of group- ing	Factor 5 team skills	Factor 6 Intrinsic rewards	Factor 7 Role of teacher	Factor 8 Begin with young children	Factor 9 Physica I layout of classro om	Factor 10 Clear success criteria for CL
1	\checkmark	\checkmark	V	V	V	V	V		V	\checkmark
2.	\checkmark				\checkmark	\checkmark	\checkmark		\checkmark	
3.	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	
4.		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	
5.		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark
6.	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	extrinsic	\checkmark		\checkmark	
7	V		V	V		V	V		V	

 Table 6.3: Observations of key factors in classrooms

Key: $\sqrt{}$ = evidence observed

Observations in classrooms highlighted the following:

- Interdependence amongst groups this was observed in all lessons, in particular with the use of group roles being assigned.
- The nature of the task observations verified that where tasks were structured to allow CL, particularly open-ended tasks, this proved more successful.
- Structuring groupings this was also verified in all lesson observations with pairs and small groups carefully selected by the teacher.
- The role of the teacher all observations showed that the teacher delegated authority to groups for significant parts of the lesson.
- Developing teamwork skills all lessons showed that pupils had received some support and in many classrooms key aspects were highlighted. In particular, in one observation it was noted that:

'This explicit teaching of cooperative learning skills followed by a structured task would appear to be a successful strategy' (field notes, observation 3)

- Developing oracy skills (explanations and use of controversy) the importance of making clear explanations was observed in all lessons and most teachers made use of the 'numbered heads' strategy for pupils to feedback on their group's task. Here, pupils were encouraged to provide clear explanations.
- The physical layout of the classroom all observations showed that seating in classrooms facilitated group work, with pupils in all cases sitting in groups of four to six pupils and pairs of pupils able to face each

other or sit side-by-side. As this is common practice in classrooms, particularly primary classrooms and in the secondary classroom observed, it is not likely to be a significant factor in the implementation of CL in this research.

- The use of clear success criteria for CL was only observed in two of the seven observations. Pupils responded well to this when used, having a clearer understanding of expectations and how to improve. It is interesting to note from interviews with facilitators that this was an area that two specifically mentioned needed addressing in their schools.
- The use of extrinsic rewards was observed in only one classroom where pupils were keen to earn points for cooperative behaviours, which led to team being rewarded. In all other classrooms, no extrinsic rewards were encouraged and pupils were motivated to succeed to support their partners and/or teams. Although it is difficult to draw conclusions from this, pupils in six out of seven observations were motivated to succeed without extrinsic rewards, thus encouraging pupils to succeed because they genuinely wanted to, appears effective.
- The only aspect where no specific information was acquired was in relation to developing the use of CL with young children. The youngest children observed were in Year 4 (age 8-9 years) and the research in this respect referred to early childhood (pre-school and early grades) (Battistich & Watson, 2003). However, focus group interviews with pupils did indicate that there was evidence of fostering CL skills in young children in some schools. The next section focuses on findings from

these interviews in relation to the ten key aspects from the literature review that support the implementation of CL,

Focus group discussions were carried out during 2008/09 with four focus groups of pupils. These followed lesson observations in order to gain a further insight into the use of CL and pupils' attitudes to it. In particular, they provided information that verified the frequency of use of CL; what support pupils have received in order to work cooperatively; pupils' views on working with partners or groups and any possible improvements. In relation to the ten identified factors in implementing CL the interviews indicated:

Table	6.4:	Key	factors	in	implementing	CL:	summary	of	focus	group
respo	nses	(pupi	ils)							

Focu s Grou p	Factor 1 Group Inter- depend- ence	Factor 2 oracy skills/ argume nt	Factor 3 Nature of task	Factor 4 Nature of groupin g	Factor 5 team skills	Factor 6 Intrinsic rewards	Factor 7 Role of teacher	Factor 8 Begin with young children	Factor 9 Physica I layout of class- room	Factor 10 Clear success criteria for CL
1	V	V	V	V	V		V			
2.	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark			\checkmark
3.	\checkmark	V	V	V	\checkmark	X (extrin- sic)	V			
4.	\checkmark	\checkmark	V	V	V		V	V		

Focus group discussions with pupils showed clearly that group interdependence was established and in particular all teachers assigned roles in groups, as well as using strategies such as 'numbered heads' to ensure that all pupils were engaged and contributed to their groups. As pupil B, (interview 11.02.09) said:

'I think when you are given different roles to do then it does actually make you do something.'

Pupils particularly highlighted the value of talk, and as one pupil said during the pilot group discussion '*talk helps*'. The majority of pupils found that being able to talk to a partner or team member helped their learning, as one secondary pupil (pupil C, interview 11.02.09) said:

'Sometimes you don't understand the teacher's interpretation, but your friend might.'

The same pupil also commented:

'You get a better variety of ideas as well from each other.'

Pupils commented also on the nature and structure of the task and the role of the teacher in organising it, as pupil B commented (interview 11.02.09):

'The way the teacher points it out as well because if they just say you are going to go into fours and puts in on the board, you won't really do it whereas Miss explains it all to us first so we all knew what we were doing and everything.'

All pupils interviewed commented about the importance of considering the structure of groups and the teacher's role in this. There was a marked difference between the secondary and primary pupils with regard to groupings. Secondary pupils clearly preferred to work in friendship groups with pupils they knew well and trusted. Primary pupils preferred the teacher to organise the groups, saying that this way they worked better. Some talked about being carefully put with a partner who they could help or who could help them and that they valued this, for example pupil D (interview 23.03.09)

'I think the way she organises it: the way she puts us with a partner so we can help each other.'

Pupils from two focus groups commented on rewards. Secondary age pupils valued the intrinsic motivation gained from cooperative group work:

'It makes you motivated' (Pupil B, interview 11.02.09)

In contrast one primary group talked of extrinsic rewards (pupil T, interview 13.02.09):

'You get points for being a great team and on Fridays the person who has got a great team, they get like a prize.'

Other aspects that were specifically highlighted by pupils were:

- Having clear success criteria for group work (mentioned by secondary age pupils)
- Starting CL when young (one primary Year 4 group talked about starting CL in Nursery and Key Stage 1)

The only aspect that was not mentioned by pupils was the physical layout of the classroom, possibly due to the fact that tables were commonly organised to allow pupils to work in small groups.

In summary, the level of similarity in findings (although some to a different degree) indicates that these ten factors are clearly important in successful cooperative group work. The following table provides an overview of the findings in relation to the ten key elements:

Table 6.5Verification of key factors in the successful implementation ofCL:Facilitators' responses, observation of pupils and pupils' responses

	Key Factor	Facilitators' responses	Pupils' response/ observations
1	The level of interdependence is related to the success of CL (Johnson and Johnson, 1990).	All agreed and 5 commented about the use of roles to support this.	All pupils observed showed levels of interdependence by working cohesively as a group and supporting each other. Focus groups interviewed all mentioned 'helping each other'.
2	The nature of talk or interaction is related to the level of skill in giving explanations, utilising controversy and general discourse (Chang & Wells, 1987, Cohen, 1994, 1999)	All talked about the importance of pupils developing oracy skills with 3 talking about the need for the teacher to model these and 1 mentioned the use of role cards. A further facilitator talked about providing vocabulary to support this.	Pupils were observed to different degrees contributing ideas in group work. Pupils interviewed said talk helped their learning.
3	The nature of the task impacts on the success of CL and more open-ended tasks are more appropriate together with the sharing of resources Cohen, 1994).	9 out of 10 agreed and one was unsure. 3 said this varies and one said it is best to mix abilities of children with a further 1 saying it works best with problem-solving activities.	Observations showed that the more open ended problem solving tasks were most effective in developing group work. One focus group of pupils talked about the teacher needing to structure the task.
4	The nature and structure of a group impacts on the success including the mix of ability, gender, race and status, with the teacher needing to ensure that low-status pupils are supported and pupil diversity celebrated (Cohen, 1994, Blatchford <i>et al</i> , 2003).	All agreed with this but 2 said it can vary and 1 said it is best with mixed ability groupings.	Observations and focus group interviews showed that this varied according to age. Secondary pupils strongly preferred to work in friendship groups and primary age pupils to be in teacher selected groups.
5	The need for sufficient teaching of teamwork and communication skills to pupils (Veenman, Kenter & Post, 2000, Gillies, 1996, Blatchford <i>et al</i> (2003).	9 agreed and one was unsure. Two particularly emphasised this.	One focus group of pupils particularly highlighted the value of preliminary work on teamwork skills and the making of a book to support this.
6	The use of group rewards alone is unproven in supporting pupil motivation (Cohen, 1994, Bossert, 1988).	All agreed but 3 said both extrinsic and intrinsic rewards helped, plus for one facilitator it was felt competition between groups could be supportive.	One observation and follow up focus group interview showed that pupils valued the use of group rewards.

	Key Factor	Facilitators' responses	Pupils' response/ observations		
7.	The role of the teacher in managing the class for CL groups requires delegating authority to the groups with careful monitoring (Cohen, Lotan and Leechor, 1989).	All agreed and one said this empowers the children. Another commented that for some teachers this can create issues in controlling the class.	Observations showed that the careful organisation and structuring of tasks by the teacher was crucial to the success. Pupils talked of supporting each other and showed ownership of their learning.		
8	Beginning the use of CL with young children is beneficial (Battistich & Watson, 2003).	All agreed with this.	Pupils who were particularly cooperative had been using CL for the longest time.		
9	Physical layout of the classroom needs careful consideration, (Blatchford <i>et al</i> (2003).	All agreed with this and two said this should be flexible.	This had been carefully considered as shown in observations in classrooms.		
10	Provision of clear success criteria for cooperative group work, Cohen (2002).	All agreed with this and two said this aspect required work in their schools.	This was not consistently observed in all classrooms although all teachers showed they valued the cooperative behaviours.		

In conclusion, whilst all the ten factors were present to varying degrees, some were particularly significant:

- Ensuring interdependence this was clearly felt to be important by facilitators, acknowledged by pupils and was in evidence through observations in classrooms.
- Providing support for children in giving explanations, and in utilising controversy productively. The value of talk for learning was highlighted by teachers and pupils.
- Providing sufficient teaching of teamwork and communication skills. This was emphasised by facilitators and acknowledged by pupils.
- Ensuring teachers delegate authority to groups with careful monitoring of progress. Facilitators discussed the changing role of the teacher and pupils valued the teacher's role, particularly alongside structuring groups.

6.2 The views of staff and pupils to the use of CL

In addition, to ascertaining whether or not findings from this research concurred with key factors in implementing CL found in the literature review, it was necessary to find out particular features that pertained to this case study. As mentioned earlier in the chapter, the views of staff and pupils to using CL are particularly important. The next section discusses results in relation to this aspect.

6.2.1 Staff

In 2004 a questionnaire was administered with headteachers and facilitators in order to ascertain:

- 1 Length of time the school has used CL strategies
- 2 Views on CL enhancing academic and social skills
- 3 Extent of the training received
- 4 Extent and frequency of use of CL
- 5 Most effective type of professional development
- 6 Further support needed.

In 2008, it was felt important to gain the views of not just headteachers and facilitators, but all teachers towards the use of CL through questionnaires: thus questions included:

- length of time the member of staff had worked at the school
- the range of CL structures used
- the confidence in using CL

- attitude to CL in relation to a) pupils' academic skills, b) pupils' social skills, and c) pupils' attitudes to learning
- current support being received in using CL
- opportunities for further comments

Results from the 2008 questionnaire showed, in relation to teachers' attitudes to

the use of CL and their confidence in using it, the following:

Question		Response (%)	n= 97
Attitude to CL	a) on pupils'	1 (strongly	19.6
	academic skills	agree)	
		2 (agree)	72.2
		3 (unsure)	8.2
		4 (disagree)	0
		5 (strongly	0
		disagree)	
	b) on pupils'	1 (strongly	53
	social skills	agree)	
		2 (agree)	46
		3 (unsure)	0
		4 (disagree)	0
		5 (strongly	0
		disagree)	
	c) on pupils'	1 (strongly	22.7
	attitudes to	agree)	
	learning	2 (agree)	70.1
		3 (unsure)	7
		4 (disagree)	0
		5 (strongly	0
		disagree)	

Table 6.6 Questionnaires 2008: Teachers' Attitudes to CL

This shows that teachers were overwhelmingly positive about the impact of CL, in particular on pupils' social skills (all respondents strongly agreeing or agreeing that CL improves these skills). In relation to pupils' academic skills, a total of 91.8% of respondents agreed or strongly agreed that CL improves academic skills. A total of 92.8% of respondents agreed or strongly agreed that it improves pupils' attitudes to learning. Data from 2004 provided by
headteachers and facilitators looked at two of these aspects: impact on academic skills and social skills. A comparison of 2004 and 2008 responses showed:

Question	2004 (Hea Re	adteachers & Fa esponse (%) n=	acilitators) : 20	2008 (Teachers) Response (%) n= 97	
Attitude to CL	a) on pupils'	1 (strongly agree)	57.1	19.6	
	academic	2 (agree)	42.9	72.2	
	skills	3 (unsure)	0	8.2 0	
		4 (disagree)	0		
		5 (strongly disagree)	0	0	
	b) on pupils'	1 (strongly agree)	57.1	53	
	social	2 (agree)	42.9	46	
	skills	3 (unsure)	0	0	
		4 (disagree)	0	0	
		5 (strongly disagree)	0	0	

Table 6.7 Comparison of Questionnaires 2004 and 2008 Attitudes to CL

Data for 2004 shows a higher response, although this data, as stated before, was provided by headteachers and facilitators, and not all teachers. This makes direct comparison problematic. Indeed, headteachers' and facilitators' positive views about the impact of CL, (as shown in 2004), drove its further development. Teachers' views, in contrast, were unknown at this time. What is evident, from the data gathered in 2008 is that by this time over 90% of teachers saw a positive impact on pupils from the use of CL.

Another significant aspect in the teachers' use of CL was their confidence in using it and data was gathered in 2008 to rank this. Analysis shows that only a very small percentage of teachers was not confident and 85.7% were reporting they were confident or very confident, as shown in table 6.8.

Question	Response (%) n= 97					
Confidence in	1 (very confident)	20.4				
using CL	2 (confident)	65.3				
	3 (fairly confident)	12.2				
	4 (not confident)	2				

Table 6.8 Questionnaire 2008: Teachers' CL Confidence Rating

Data gathered from minutes of facilitators' meetings held at least termly from 2005 to 2009 also provided a rich source of information. These minutes were taken by the researcher, or facilitators, and circulated following the meeting to all facilitators for comment. Action points from meetings informed the agenda of the following meetings. Analysis of these minutes shows not only progress in developing CL and possible issues that arose, but also insights into the research questions. The following table (6.9) presents an analysis in relation to the following factors:

- training and support for staff being provided
- attitudes to CL
- issues
- new developments
- links to research

Date	Training/ support for staff	Commitment/ attitudes to CL	Issues	New developments	Research links
20.11. 05	Focus on facilitator training	Headteachers' support for facilitators to attend regular meetings/ training noted.		One school using SEAL also (Social Emotional Aspects of Learning).	Joint research paper presented at international conference (PRAR, 2005). by researcher and one facilitator (Jolliffe & Hutchinson, 2005)
27.1.06	Regular short staff development sessions. Peer support and team- teaching linked to executive coaching in most schools. Facilitator role as mentor - all schools.	Whole school commitment to CL reported by all schools.	Staff turnover. Keeping pupils on task (an issue for a minority felt)	Developing CL across the curriculum. Developing links to 'the learning compass' and how CL supports the learning process to be made more explicit.	
13.03. 06	Focus on facilitator training – implications from recent research findings.	Importance of role of facilitators – to provide resources and support		Making explicit links to other initiatives.	Facilitators provided with summary of key research findings.
24.11. 06	Development of staff handbook for CL for all schools.	Collaborative work on CL Handbook.	Lack of release time for facilitators Some changes HT/DH and review of CL.	Use of talk project very beneficial and complemented CL.	All facilitators commenced GTCE Teacher Learning Academy Stage 1 submission in respect of work on CL.
2.03.07	Schools with large number of NQTs – training in CL provided.	One school reported dramatic increase in use of CL due to emphasis on school improvement plan.	Staff turnover Changes in senior manage- ment LA priorities	Introduction of learning compass across schools. Links by Secondary schools to other teaching effectiveness programmes.	

Table 6.9 Facilitators' Meeting Minutes

Date	Training/ support for staff	Commitment/ attitudes to CL	Issues	New developments	Research links
12.10. 07	Schools reported all new staff trained in CL. All schools received resources disk.	All schools reported continued commitment to CL and in some schools staff chose CL as a target for performance management.	Observations in one school noted lack of use of CL in some classes and need to support. Some issues with 'initiative overload'		
29.02. 08	Resources provided for staff and adapted for different ages. Inset in some schools focused on thinking skills and CL. Induction programme for new staff.	Whole school focus on CL reported – particularly by one secondary school.	Lack of time for facilitator to support – which leads to a sense of reaching a 'plateau' with CL. New staff and students present difficulties in some schools.	ACE curriculum in one secondary school heavily dependent on CL. Links to work on thinking skills	
13.06.0 8	Training in Group Investigation for Facilitators	All schools reported continued commitment to CL	Need to energise staff with fresh ideas.	Dissemination of Group Investigation.	Presentation of research using group investigation.
17.10. 08	Training sessions and refreshers taking place in many schools – particularly at the beginning of school year.	Ongoing commitment by schools. One secondary schools reporting impact move from unsatisfactory in 2004 to outstanding teaching and learning in 2008 (Ofsted).	New staff particularly HTs in some schools present difficulties.	Links to learning to learn and talk project/thinking hats.	
27.2.09	Audits by Facilitators showed CL structures were firmly embedded, particularly informal paired work.	Classroom observations by Facilitators in Secondary school showed school commitment to CL.	Problems caused by a few disruptive pupils who lacked sufficient social skills.	Links to Primary Framework being made by many schools.	Feedback from questionnaires presented including issues and points for further action.

This analysis of the minutes of meetings with facilitators over four years, from November 2005 until February 2009, presents some useful insights. With regard to staff attitudes to CL, it shows a continued whole school commitment across all the schools, although the degree of commitment fluctuated, as a result of CL receiving differing emphases from senior managers. Where CL was viewed as central to improving teaching and learning and included in the school improvement plan, a significant increase in its use was evident. Where facilitators were given non-teaching time to monitor the use and support teachers, its use increased. All these factors were dependent on the commitment of headteachers. During the four years documented in these minutes, there were changes in Headteacher in four primary schools and where new heads did not see CL as a priority, there was an impact on its continued use. However, in spite of this, only one of the primary schools saw a reduced Audits by facilitators in February 2009 showed that CL was use of CL. embedded particularly with the use of more informal paired work and that more formal group work needed further development. This reflects a continued commitment by staff generally during this time and some staff selected CL as a target for improvement as part of their performance management review. This is clearly indicative of their interest. Throughout the four years, all schools also reported ongoing training for staff and induction programmes for new staff.

The attitudes to CL of headteachers are therefore crucial to ensuring the effective implementation of CL. These were obtained through interviews in 2008. It was also important to verify the attitude of facilitators which was also gained through interviews in 2008. All interviewees indicated a positive attitude

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overall and the following table summarises recurrent words and phrases in respect of their views on CL:

Views	Nos of headteachers and facilitators commenting (out of possible 11 headteachers and 10 facilitators)
an effective tool for learning	all headteachers and facilitators
impacts on oracy skills	9 facilitators, and 5 headteachers
supports inclusion	8 facilitators
improves social skills	5 headteachers and 8 facilitators
improves pupil ownership on learning and pupil voice	2 headteachers and 6 facilitators
improves pupils' confidence	4 headteachers and 5 facilitators
benefits transition between primary and secondary schools	4 headteachers and 2 facilitators

Table 6.10 Headteacher	s' and Facilitators	' Interviews: Attitudes to CL
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Example comments in relation to these are included in the table below:

Impact of CL	Comment
an effective tool for learning	we would expect that [CL] to be in a good lesson - the learning becomes deeper learning as well because it goes back to the fact that you can teach somebody but when you embed that learning you have got to be able to teach that to somebody else and you can do that through cooperative learning. (Headteacher 9)
impacts on oracy skills	For the first time in the history of the school we have developed a fast track group of 60 young people whose oracy skills are second to none. (Headteacher 2)
supports inclusion	by being able to discuss points in a lesson and actually turn around working in a group that you are enabling every child in that group or class to access the learning everybody succeeds and everybody is working together towards the success of the team. (Facilitator 2)
improves social skills	<i>it is incredible because it does make them far more emotionally mature and able to kind of relate to other people</i> (Facilitator 3)
improves pupil ownership on learning and pupil voice	we're becoming much more ambitious and prepared to loosen our apron strings over the students, if you like, and give them more responsibility and cooperative learning seems to be the way forward with that. (Facilitator 4)
improves pupils' confidence	it gives the children more confidence because they're not on their own (Facilitator 6)

Table 6.11 Comments on Impact of CL

Impact of CL	Comment
benefits transition between primary and secondary schools	feeding off other schools helps in developing our transition scheme of work we've been able to embed cooperative learning within that and therefore picking up on the things that students are already accustomed to in primary and not losing that in those vital transition stages when we get them (Facilitator 10)

Responses from interviews, facilitators' meetings and the views of teachers gained through questionnaires, show a positive attitude to the use of CL. As sample comments above show, this is due to its impact on teaching and learning, supporting inclusion of pupils, and improving pupils' social skills. It was also noted that both headteachers and facilitators from the two secondary schools in the network agreed that implementing CL was benefiting transition between primary and secondary schools for pupils.

6.2.2 Pupils

Pupils' attitudes to CL were reviewed in two ways:

- 1. Observations in classrooms.
- 2. Pupils focus group discussions which followed observations.

As discussed on earlier, observations were first piloted in the spring term 2008 and further observations were carried out during the academic year 2008/09 in one secondary school and two further primary schools, all within the networked learning community.

A series of four observations carried out in accordance with the procedure outlined in chapter 5, pages 183-184, focusing on two groups of pupils, in one classroom of pupils in Year 4 showed that there was strong evidence of cooperative learning. During the three week period of the observations, a particular unit of literacy work was being undertaken and groups were established. An improvement in the level of cooperation amongst pupils in groups in this period was observed during the literacy lessons. The table below provides a tally of key CL behaviours at regular intervals.

Date	CL*	Group 1				Group 2	2		
28.02.08		Pupil 1	Pupil 2	Pupil 3	Pupil 4	Pupil 1	Pupil 2	Pupil 3	Pupil 4
Gp 1 = 2	А	7	7			7	7	7	
pupils Gp 2 = 3	В	8	7			8	7	6	
pupils	С	13	11			14	13	13	
	D	4	4			5	2	5	
04.03.08	А	8	9	7	6	10	9	10	9
Gp 1 = 4	В	4	4	2	5	7	4	2	4
Gn 2 = 4	С	7	7	6	6	10	7	8	6
pupils	D	4	2	1	0	4	1	1	2
11.03.08	А	9	12	12	6	12	12	12	
Gp 1 = 4	В	1	3	9	4	4	5	6	
Gp 2 = 3	С	9	10	11	8	9	10	10	
pupils	D	0	1	7	1	0	4	3	
18.03.08	А	10	8	9		11	11	11	
Gp 1 = 3	В	3	3	0		2	3	4	
Gp 2 = 3	С	6	6	4		7	8	7	
pupils	D	2	3	2		1	3	4	

 Table 6.12.1
 Tally of Cooperative Behaviours Observed (1)

Key: *Cooperative Learning behaviours

A: On task behaviour

B: Contributing ideas

C: Participating

D: Helping and supporting

The above tally of four occasions in the same classroom focused on two different groups of pupils on each occasion. Whilst groups generally consisted of 3 or 4 pupils, this varied according to whether all pupils were present on that day. However there were some differences observed between pupils and the other factor to bear in mind is that groups observed varied in this series of observations in one classroom. At the time it was felt better to gain an overview

of all pupils, rather than focus on two groups for the duration of the observations. This does present some issues of comparison.

It is interesting to note that all pupils demonstrated high levels of on task behaviour (category A) and that this increased during the period of observations. All pupils observed, except one, contributed ideas to their groups and there was clear evidence of participation in group work. The category that showed most variance was helping and supporting others (category D) which could relate to individual's confidence, or inter-personal skills. Overall, tallies provide evidence of engagement in group work over the time observed.

One observation was carried out in a secondary school in 2009 which showed high levels of cooperative behaviour. The pupils worked in two types of groupings. One of these was teacher directed and the other was according to friendships. Whilst both showed good levels of interaction, the friendship groupings with this age of pupils were more effective. Pupils appeared to be much more at ease with those they knew well. Two groups were observed to create a tally of cooperative behaviours during the friendship grouping, as shown in the table below:

Date	CL*	Group 1	n= 4			Group 2	2 n= 3		
11.02.09		Pupil 1	Pupil 2	Pupil 3	Pupil 4	Pupil 1	Pupil 2	Pupil 3	Pupil 4
	A	6	6	6	6	6	6	5	
	В	2	4	4	8	8	5	2	
	С	4	4	5	6	4	4	2	
	D	1	2	1	3	3	3	1	

Table 6.12.2	Tally of Cooperative	Behaviours Observed (2	2)
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Key: *Cooperative Learning behaviours

A: On task behaviour

B: Contributing ideas

C: Participating D: Helping and supporting

All pupils demonstrated a high level of on task activity and participating with each other. Some more confident pupils contributed more ideas and showed strong leadership, but all were observed helped and supporting each other. Again this indicates a positive attitude to working cooperatively in groups.

Also in 2009, two further observations were carried out in different primary schools. One was of a maths lesson in Year 5 which showed that partner work was well established. Children were also clearly used to group work and had assigned roles within groups. The tally below indicates the behaviours observed.

Table 6.12.3 Tally of Cooperative Behaviours Observed (3)

Date	CL*	Group 1	Group 1 n = 4				Group 2 n = 4			
13.02.09		Pupil 1	Pupil 2	Pupil 3	Pupil 4	Pupil 1	Pupil 2	Pupil 3	Pupil 4	
	A	5	5	2	3	4	5	5	6	
	В	2	2		1	1	3	1	2	
	С	3	3	1	2	2	2	3	3	
	D	3	3		2	2	2	3	3	

Key: *Cooperative Learning behaviours

A: On task behaviour

B: Contributing ideas

C: Participating

D: Helping and supporting

Pupils all demonstrated on task behaviour and the majority contributed ideas and participated in group activities. Only one child was observed who did not readily help and support others. Children in this class were given team rewards and responded well to these. This may have impacted on their responses to working cooperatively, although ensuring rewards were given to teams and not individuals appeared to support their motivation to group work. A further observation in years 4 and 5 in another primary school of a literacy lesson showed high levels of cooperation, as shown by the tally of CL behaviours below:

Date	CL*	Group 1	n = 4			Group 2	n = 4		
23.03.09		Pupil 1	Pupil 2	Pupil 3	Pupil 4	Pupil 1	Pupil 2	Pupil 3	Pupil 4
	A	5	5	4	4	5	6	5	5
	В	2	4	1	1	2	5	1	2
	С	3	3	2	2	2	3	2	2
	D	3	4	1	2	2	6	3	3

 Table 6.12.4
 Tally of Cooperative Behaviours Observed (4)

Key: *Cooperative Learning behaviours

A: On task behaviour

B: Contributing ideas

C: Participating

D: Helping and supporting

Partner work was observed to be frequently used and periodically one pair joined another pair to form a group of four. Use of the CL strategy of 'numbered heads', which involves one pupil being called randomly to respond for their group, was effectively used and children all used phrases such as 'our team thinks that...' when reporting back. All children demonstrated on task behaviour and participated and contributed ideas to varying degrees. Help and support to others was also apparent with some pupils being particularly supportive of partners. This indicates an overall positive response to working cooperatively in pairs and groups.

Although only a relatively few lessons were observed (seven lessons plus one pilot observation), all indicated that cooperative learning was a part of daily classroom practice and that pupils enjoyed it. Where there had been a particular focus on developing teamwork skills, as in the series of lessons observed in Year 4, this clearly showed an improvement and also where teams

became well established. Partner work was observed as a frequent occurrence, but group work was also clearly established and the teacher's role in organising groupings and using CL strategies such as 'numbered heads' to feedback and apportioning group roles supported the level of group work. These observations were followed by interviews with a focus group of pupils which provided further information with regard to pupils' attitudes to CL.

Pupils' attitudes to CL from focus group discussions

As previously discussed in this chapter, focus group discussions with pupils followed lesson observations in order to gain a further insight into the use of CL and pupils' attitudes to it. The procedure and ethical considerations for carrying out focus group discussions with pupils is set out in Chapter 5 (pages 176-178), including issues identified from pilot interviews.

Pupils' attitudes to CL were overwhelmingly positive and comments included:

'You have partners to help you and you know that someone is going to be there to help you.' (Pupil S, 23.03.09)

'We don't just help them, they help us as well.' (Pupil K, 13.02.09)

'Sometimes you don't understand the teacher's interpretation, but your friend might. We were all contributing to each other's ideas and making them better.' (Pupil C, 11.02.09)

The most common words and phrases used by pupils about working cooperatively during the four focus group interviews were:

help each other (used 27 times in total)

sharing ideas/more ideas (used 12 times in total)

friends teach you (used four times)

Such phrases highlight the positive responses by pupils to CL.

During focus group discussions all pupils were given the opportunity to comment about anything they did not like about working with partners or in groups. Only one primary age pupil commented on problems with pupils arguing and that some pupils '*mess about*' or others dominate and '*boss you around*' (pupil N, 13.02.09). The only issue identified with secondary age pupils was the need to know others in a group or partnership:

'Sometimes, if you don't know them they might think that's a stupid idea and you daren't say. .. '(Pupil C, 11.02.09)

Whilst only eight classroom observations (one of these being a pilot observation) and four focus group discussions with pupils were carried out, these did show that pupils liked working with partners and groups and they valued it. As one secondary age pupil commented (Pupil B, 11.02.09):

'it makes you motivated and want to ...

if you are enjoying it more, you want to get involved more.'

In summary, evidence from pupils and teachers indicates positive attitudes to CL. How this was achieved is the focus of the next section and research question which focuses on how teachers were supported in implementing CL.

6.3 How teachers were supported in implementing CL

Three main sources of evidence contribute to an overall understanding of how teachers in this case study were supported in implementing CL over the period from 2004 to 2009 (although four primary schools CL had begun in 2000 although within the context of literacy lessons). These sources were:

- 1. Questionnaires 2004 and 2008
- 2. Minutes of termly facilitators' meetings
- 3. Yearly facilitators' questionnaires

As discussed earlier in this chapter, questionnaires were distributed to headteachers and facilitators in 2004 and then repeated in 2008 and distributed to all teachers. In both questionnaires, they were asked to state the length/type of training provided and what further support they required.

Question	Response (%)				
	2004 (Headteachers & Fa	2008 (Teachers) n = 97			
	n = 20				
Training	Brief introduction	No data	9.4		
received	A series of twilight sessions	14.3	39.6		
	1 full day	7.1	18.7		
	2 full days	35.7	8.3		
	More than 2 days	28.6	17.7		
	Other	35.7	6		

Table 6.10 Questionnaire results: Implementing Cooperative Learning inthe Classroom comparison 2004/2008

This comparison shows that there were a greater number of shorter training sessions held in 2008 and less full day sessions. This appeared to reflect a need for updating rather than whole staff training, as could be expected with an initiative which has been running for over four years. There could, however, have been other factors such as budgetary constraints or other school priorities.

In 2004, schools were asked to comment on which type of further support they felt to be most helpful in developing CL. This showed that 21.4% required further external training, and the same percentage required external support to work alongside staff; 35.7% required in-house training to be delivered by the facilitator with 42.9% requiring internal facilitator support to staff, and 35.7% requiring classroom-based peer support. This indicated a preference for internal training and support from the facilitator and peers. This in turn led to setting up the facilitator support group and termly meetings, in order to support facilitators to provide in-house support. In 2008 questionnaires to teachers asked whether they were receiving any in-house support. Responses indicated:

Yes: 72 (74.2%) No: 25 (25.8%)

They were then asked what further type of support they would like. The

following summarised comments received:

Table 6.11 Questionnaire results 2008: summar	y of teachers' comments
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Question	Summary of Comments
8: Describe the type of school-based support for cooperative learning	Staff Insets, regular updates Through coordinator/ in-house support, work with coordinator Resources – handouts, information packs, DVD, display cards, wall posters Support from more experienced staff

This showed that approximately three quarters of staff reported in-house support. There is, however, some ambiguity about what they regarded as in-house support, for example it is possible some felt this referred to individual support. Nevertheless the largest number of responses related to the support by the facilitator (32 respondents cited this) with comments such as:

Coordinator is full of ideas and very enthusiastic (respondent 58)

Minutes of termly facilitators' meetings

Minutes of termly meetings as discussed previously, showed the following recurrent aspects in relation to the support for staff in implementing and developing CL:

- updates and training provided for facilitators (20.11.05, 13.03.06, 13.06.08)
- regular short staff development sessions
- peer support and team-teaching
- facilitator role as mentor
- staff handbook for CL
- induction for new staff and NQTs being provided
- resources disk provided for all schools
- training on links to other initiatives and CL, such as thinking skills and the Talk Project

To summarise, therefore, it was apparent that the facilitator network meetings provided useful opportunities to up-skill facilitators who in turn could support teachers in schools either individually or through regular staff training sessions and updates. In addition, the resources such as a handbook and disk of teaching resources produced by the facilitators group were commented on as helpful in supporting staff.

Yearly facilitators' questionnaires

Facilitators also completed a yearly questionnaire in 2005, 2006 and 2007. In 2008 facilitators were interviewed in order to gain more detailed information. In

respect of support for teachers, facilitators were asked to provide information about staff development in CL undertaken in their schools. A summary of responses for the three years is presented below:

Table 0.12 Facilitators Tearly Questionnalies	Table 6.12	Facilitators'	Yearly	Questionn	aires
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2. Staff Development	2005 n = 12	2006 n = 9	2007 n = 10
a) Have there been recent staff development session(s) linked to CL?	72% reported that there had been recent staff development related to CL.	78% reported that there had been recent staff development related to CL.	66% reported that there had been recent staff development related to CL.
 b) Are you planning future staff development sessions? 	100% reported that CPD sessions were planned	100% reported that CPD sessions were planned.	70% reported that sessions were planned.
c) Are staff released to observe good practice?	35% reported that staff were released to observe good practice	56% reported that staff were released to observe good practice	44% reported that staff were released to observe good practice
d) Are there examples of staff supporting each other/coaching in school in relation to CL?	25% reported that there were examples of staff co-coaching or supporting each other in relation to CL	44% reported that there were examples of staff co-coaching or supporting each other in relation to CL	66% reported that there were examples of staff co-coaching or supporting each other in relation to CL

This highlights the ongoing staff training and the role of the facilitator in providing this and supporting staff. In addition, there was a growing use of cocoaching and each year a proportion of staff were provided time to observe other teachers. The model that evolved therefore for support to staff involved regular support to facilitators and then in-house training and support to teachers, aided by resources produced by the facilitators' group. In turn the growing use of peer support and co-coaching helped in developing CL.

Summary

This chapter began by reviewing the evidence from this research in relation to the ten themes found in the literature review. These were all borne out in this research although more conclusive evidence was found in relation to the following aspects:

- ensuring interdependence is developed between pupils in groups
- providing support for children in giving explanations, and in utilising controversy productively
- providing sufficient teaching of teamwork and communication skills
- ensuring teachers delegate authority to groups with careful monitoring of progress

This chapter has provided also a summary of results in relation to the research questions:

- 1. What are the attitudes of staff and pupils to the use of cooperative learning in promoting effective teaching and learning?
- 2. What types of support have enabled CL to be used?

Evidence from questionnaires, minutes of termly facilitators' meetings, interviews with headteachers and faciliators, observations in classrooms and pupil interviews have shown that there was an overwhelmingly positive response by teachers and pupils to using CL. Teachers also indicated that CL benefited pupils' social skills as well as their academic skills and there was some evidence of improved attitudes to learning. To achieve this teachers and pupils require support and the approach shown in this research involved the

support for facilitators through a facilitators' network of termly meetings. This provided not only training for the facilitators, supported by findings from recent research, but also opportunities to share progress and issues. Later meetings were held in each other's schools and included opportunities to observe CL in different classrooms. Facilitators were thus empowered to support their own staff. The next chapter will look in more detail at the network in order to ascertain the significant features that impacted on the implementation of CL.

Chapter 7: Results The Impact of the Network in Implementing Cooperative Learning

Introduction

In the previous chapter results from a range of research methods were discussed in relation to attitudes of staff and pupils to the use of CL, and also how teachers were supported in implementing it. Analysis found a positive response from teachers and pupils through questionnaires, interviews and observations in classrooms. The majority of the factors identified in the literature review, in relation to the successful implementation of CL, were also in evidence. A significant aspect uncovered was that not only did staff have ongoing support and training in using CL and resources to support them, but also that facilitators themselves received ongoing support through a network of meetings. The importance of the network in implementing CL in this case study is the focus of this chapter.

The following research questions focus on the network and its impact in implementing CL:

- 11. What is the nature of the network and how has it evolved?
- 12. What are the views of staff on the power of the network to offset outside pressures and focus on self-determined initiatives?

This chapter will discuss research evidence in relation to these questions.

7.1 The nature and development of the network

Chapter 4 set out the context for this research, firstly locating it geographically and summarising the economic, social and educational aspects pertaining to the location of this network, as well as the make-up of the network itself. A range of national statistics highlighted the level of deprivation (as set out in chapter 4). This led to the City Council striving for regeneration. One of the principal means of improving standards in education was to set up an Education Action Zone in Bransholme in 1998 and by 2004 the city cited this as an example of 'innovative practice' (Hull City Council, 2004) and in an independent evaluation conducted by the University of Hull (Moore, Waugh and English, 2001: 79) it was found that evidence

'strongly suggest[s] that the Bransholme EAZ is proving to be a very effective agency for enhancing educational provision, both in schools and in the wider community.'

This successful EAZ continued to evolve firstly into part of the Excellence in Cities initiative from 2000, and later in 2003, a Networked Learning Community. This evolution is an important consideration in this case study. First it shows that close links amongst the schools had developed over a period of time from 1998, and second that this showed a continuing commitment from the schools to work closely together.

In Chapter 4, discussion of networks showed that they can be powerful in demonstrating '*the massive potential benefits that can come from working together*' (NCSL, 2007:5). Thus, the hypothesis has been formed that the network in this case study has been crucial in developing cooperative learning. Also in Chapter 4, research into the characteristics of successful networks was

reviewed (Lieberman, 1999, Cordingley *et al*, 2006 and Earl *et al*, 2006). This provided useful indicators for effective networks as follows:

- 1. Shared purpose and focus
- 2. Collaboration which ensured all parties are involved
- 3. Commitment of headteachers
- 4. A mixture of information sharing and psychological support
- 5. An effective facilitator

Thus, one of the aims of this research was to test out these indicators to see if they applied to this network and in turn supported the implementation of CL. The following summary suggests a strong link:

Table 7.1	Successful	networks:	findings	from case	study
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	Key research findings on successful networks	Case study: evidence from interviews with headteachers and facilitators			
1	Shared purpose and focus	Sharing was a key aspect discussed by all headteachers. The two recently retired headteachers, in particular discussed this extensively. Headteacher 5 commented 'we wrote an area action plan. We did a policy together, we pooled our community use funding.' This is also evidenced in the agreed focus for the work of the network.			
2	Collaboration which ensured all parties are involved	This aspect – a forum for sharing was identified by all headteachers and facilitators. One recently retired Headteacher commented it was ' <i>all of us working for the benefit of us all</i> ' (Headteacher 10)			
3	Commitment of Headteachers	All headteachers interviewed showed a commitment to the network. As Headteacher 6 summed up: 'the shared understanding, the shared viewpoint of what we are trying to achieve across the patch.'			
4	A mixture of information sharing and psychological support	The frequency of reference to sharing and support shows this was significant factor. Headteacher 4 commented for example: 'Being able to pick up a phone, especially when I became acting Head and suddenly you thought, well I don't know how to do this and you felt confident to phone somebody on the patch and say I'm totally stuck'.			
5	An effective facilitator	Headteachers made frequent reference to key personnel who impacted on the development of the network. As headteacher 10 commented : it 'needed the key personnel there to drive it') The role of the facilitator in each school, particularly from the research carried out in 2004 and verified in 2008/9, has been shown to be significant in the implementation of CL.			

The above summary strongly suggests that the indicators of successful networks, shown from a review of the literature, have been present in this network. The evidence will be examined in further detail in the next section of this chapter.

7.2 Views of staff on the power of the network to offset outside pressures and focus on self-determined initiatives

In addition to analysis based on a review of the literature in relation to successful networks, analysis was conducted on the interview transcripts to code frequent words and phrases that occurred. This grounded theory approach allowed aspects, not previously expected, to be revealed. Once key terms and phrases were uncovered by noting frequency of use, these were sorted into tables to ascertain any patterns.

Table 7.2 summarises comments from the interviews in relation to the impact of the network from both headteachers and facilitators for each school. In one school, a relatively new head declined to be interviewed and showed little commitment to CL.

School	Headteacher	Facilitator
1	sharing: knowledge, resources	keeps you focused,
	helps take risks	sharing,
		supports,
		empowers
2	joint approach,	supports transition,
	focus on learning,	liaison
	raised aspirations	support – not in isolation
	building social capital	impact pupil confidence & ownership,
		independence
		developing skills
3	sharing – knowledge and	Supportive, particularly facilitator
	resources	meetings to up-skill facilitators.
_	pressures still present	
4	support mechanisms (very	supports colleagues and external
	positive)	support
	sharing	sharing good practice
5	joint planning and sharing	sharing support for facilitator in
	(very positive)	delivering Inset, resources
	peer pressure (positively) to	professional development for facilitator
	take on and develop projects	
6	strength of network –	liaison with primaries, sharing
	relationships (positive)	
	shared understanding	
	Outside pressures still there	
7	support e.g. with Ofsted,	support – share ideas & problems
	joint planning	
8	collectively powerful,	Colleagues – discuss, share developed
	mutual support	from SFA network helps facilitators
	Innovative, think outside box,	
	gain from each other's	
0	strengths	noturelly doop not belo with outside
9	able to select different	preseures not nelp with outside
	projects,	piessuies. Escilitatore charing holes links with talk
	loarn from oach othor	project
	no impact on other pressures	
10	(declined to be interviewed)	working together - koops it frosh
10		working logellier - keeps it liesti

 Table 7.2
 Impact of the Network on the implementation of CL

Analysis of the interviews, using a grounded theory approach, reviewed frequency of words and phrases used to describe the network. In addition to the nine current headteachers (out of a possible 10) interviewed, two former long-serving headteachers were also interviewed as they were able to provide a

large amount of information regarding the development of the network from the beginning. Table 7.3 shows the terms or associated phrases used with the frequency of respondents provided:

Table 7.3 Frequency of terms: Impact of the Network on theimplementation of CL

Comment	Respondent	Frequency
a forum for sharing	Headteachers	10 out of 11
	facilitators	10 out of 10
innovation and pedagogy	Headteachers	8 out of 10
	facilitators	2 out of 10
Support	Headteachers	6 out of 11
	facilitators	8 out of 10
Partnership	Headteachers	7 out of 11
altruism	Headteachers	2 out of 11
key personnel support	Headteachers	6 out of 11
Relationships	Headteachers	5 out of 11
Trust	Headteachers	4 out of 11
community links and parental	Headteachers	4 out of 11
involvement		
independence and ownership	Headteachers	2 out of 11
Honesty	Headteachers 1 out of 10	
	facilitator	

Specific comments: Impact of the network on the implementation of CL

In addition, to looking at the comments made by each school and the frequency of phrases and terms, it is useful to look in greater depth at the comments to examine in more detail the views of headteachers and facilitators. The following section takes each of the frequent terms denoted in table 7.3 in order to explore these more fully.

(i) A forum for sharing

Analysis of headteachers' comments showed that all respondents commented

about the positive benefits of sharing resources, expertise, time and

experiences. Comments included:

there is a good sharing of knowledge' (Headteacher 1)

'schools sharing good practice and sharing resources, which can be people' (Headteacher 3)

'we have supported each other with staffing and loaned staff every now and then' (Headteacher 4)

'The shared understanding, the shared viewpoint of what we are trying to achieve across the patch.' (Headteacher 6)

'we were all learning together and I think we can learn from each other, when one school has got one strength we can pawn that and I think it gels us all together more' (Headteacher 9)

'the message we were constantly trying to promote was it is better together but ultimately there is more in it for all the kids on Bransholme if you do continue to work together' (Headteacher 11)

(ii) Innovation and pedagogy

Eight out of eleven headteachers commented on the impact of the network in

respect of supporting innovation and developments in pedagogy:

'I don't think we would have moved as far on if we did not have a network' (Headteacher 3)

'the strategies that we were able to utilise are fairly innovative strategies' (Headteacher 8)

'we had time, space and money. We had a timescale that we could manage and control. We had access to professional support and guidance.' (Headteacher 11)

(iii) Support

Support provided by the network was emphasised in a majority of interviews.

Comments in particular noted:

'They [staff in the network] have been very supportive. Key members of staff went, go support – it is a mutually satisfying arrangement: boosting as well as being supportive.' (Headteacher 4)

'And people do have different skills and if you don't know something there is usually somebody who can' (Headteacher 5) 'It has been absolutely vital as a new Head. Just knowing someone you can rely on – somebody in the area – because we do work very closely together and support each other.' (Headteacher 7)

(iv) Partnership working

Seven headteachers spoke about the level of partnership working and over half

referred to the support gained from the network. Comments included:

'At its best it was the genuine partnership of the headteachers and staff and the genuine sharing of resources, training, data for the benefit of all.' (Headteacher 10)

'Collectively you are powerful' (Headteacher 8)

'I walked through the door and was absolutely amazed by how they actually worked together. Then I saw it lag a little bit and now it has become a firm group with a direction and a focus and that is why it is leading to a soft federation.' (Headteacher 6)

(v) Altruism

Two headteachers mentioned the altruistic attitude commonly found in the

network and commented:

'What was significant as well was that some people had more of a priority in more areas than in another. It was how as a group of schools we could be more effective' (Headteacher 11)

'if certain schools needed more than others we were quite happy to do that and if a particular project we had, one school did not necessarily need something, they were quite happy to step back and let it be shared out amongst the others' (Headteacher 10)

(vi) Key personnel

A further common factor with over half of the headteachers was the role of key

personnel who led and drove the network:

'The Director of the EAZ was brilliant ... and chivvied, coaxed, persuaded and supported' (Headteacher 4)

'he was the driving force' (Headteacher 5)

'it needed the key personnel there to drive it forward. the individuals - a group of risk taking heads' (Headteacher 10)

'It was key personalities' (Headteacher 11)

'it was perhaps easier when we had our established group of heads '(Headteacher 8)

(vii) Relationships

Relationships amongst staff in the network were a further key factor, although

the significant change in headteachers latterly was recognised as impacting:

'but you only manage it because you have got those relationships I think it was to do with relationships. One of the huge advantages was that we had a group of headteachers who had known each other for 20/30 years.' (Headteacher 10)

'it has been more difficult as the newly appointed younger Heads are coming in. It has been more difficult to maintain that togetherness.' (Headteacher 8)

'what they do have is an incredible camaraderie really so anybody will do anything for anybody else' (Headteacher 5)

(viii) Trust and honesty

Just under half discussed the level of honesty and trust amongst staff with

comments including:

'there is never any loss of face you can say things and own up to things' (Headtecher 4)

We can be open and we can be hones't (Headteacher 5)

'one of the main strengths so that you know with something like a Ofsted when things can get very sensitive that you feel very confident that you can go and ask for support and people will be just very happy to help you out.' (Headteacher 7) 'you were building a relationship that was very transparent in a sense that people were not trying to hide things they were quite open about particularly areas that were not strengths' (Headteacher 8)

(ix) Community links and parental involvement

Just under half talked about the impact of the network not just in schools but in

the wider community and the links that were increased:

'the impact on the community - we realised that you could not just change the children you had to work with the families, those links were strongly forged about community leadership and community involvement right from the beginning ... It was cooperative in the whole of the community and not just in the classrooms.' (Headteacher 11)

'We want to talk about cultural things where we can have a huge impact on our community.' (Headteacher 8)

'The joint networking approach has strengthened that professional confidence in the community. We are building social capital as a result of this.' (Headteacher 2)

(x) Independence and ownership

Two of the heads spoke of the level of independence that the network afforded

specifically from Local Authority and other outside pressures:

'the fact that we were independent, totally independent from the Local Authority ... that was a real key - the professionals made the judgements and the decisions' (Headteacher 10)

'collective clout was a lot for the authority to fight against' (Headteacher 11)

Summary: views on the impact of the network

The above shows that all the headteachers interviewed valued the network, in particular for providing support, in often altruistic ways. It was also highly regarded as a forum for sharing resources, expertise and staff. Particularly significant in the context of this research, was the network's role in supporting innovation in pedagogy. This latter aspect is precisely what was required in implementing CL. The importance of the relationships established and the level of trust and honesty was the corner-stone for this sharing and innovation. It is interesting to compare the length of time headteachers had been at the school with their views on the network and its impact. Whilst all (apart from the one headteacher who declined to be interviewed) were positive about the network, it was those that had been at the school for a considerable amount of time that were most positive. The reason for this would appear to be the strong relationships that had built up with the longer-serving heads, as headteacher 5 commented:

'what they do have is an incredible camaraderie really so anybody will do anything for anybody else.'

Two headteachers and one facilitator commented that whilst they valued the network, they were unsure whether it made any impact on outside pressures. Headteacher 6 for example said: *'They are supportive of each other. I am not so sure whether that reduces the pressures any'* Nevertheless as Headteacher 3 commented:

'I don't think we would have moved as far on if we did not have a network. I think if schools are working in isolation you would be nowhere near where you are. Whether it helps with things from the LA and that, I don't know because they are different pressures.'

This comment identifies that no network however strong insulates schools from outside pressures, however what it can do is to support innovation. This is summed up by Headteacher 10's comment:

'it made things happen and it was ahead of the game.'

Impact of the facilitators' network

Interviews with facilitators highlighted the value placed on the facilitators meetings and focused on two aspects: sharing and support, i.e. sharing information and resources and supporting each other in implementation. Comments included:

'You can discuss pitfalls and problems and things that people found useful' (Facilitator 1)

'The meetings are really useful because we can share ideas' (Facilitator 5)

'It does help because especially when we've had the sharing opportunities which shared ideas for staff meetings... we've shared resources and how they've been useful ... we've had ideas about what it looks like in other schools.' (Facilitator 7)

In one case, specific mention was made of the relationships established through

the network and the level of honesty and trust that enabled such sharing and

support, for example:

'You've got the support of your colleagues and are working together.' (Facilitator 3)

In two cases, the impact of the network in supporting innovation, in terms of

pedagogy, was also commented on, for example:

'I think it's been useful in terms of self-development hasn't it? It's developed the leader in order to better be able to develop others.' (Facilitator 7)

In addition to interview, facilitators completed a yearly questionnaire which reviewed progress, training for facilitators, resources, networking and sharing of good practice. The comments of facilitators in a questionnaire in December 2007 are particularly enlightening, for example: 'The opportunity to work alongside likeminded colleagues has been invaluable. It has been great to develop my own knowledge of not only cooperative learning but also thinking skills and then cascade this to other members of staff.' (Respondent 3)

'It has increased my understanding of cooperative learning strategies.' (Respondent 4)

'I have been able to work alongside colleagues from other schools and develop resources cooperatively. We have developed our expertise consistently.' (Respondent 7)

…encouraged me to extend my use of group work in the classroom.' (Respondent 1)

'Discussion with colleagues is valuable, in a supportive atmosphere. The meetings provide an opportunity to discuss ideas and refine thinking. This can then be shared with your own staff.' (Respondent 9)

In summary the regular termly meetings of facilitators provided the following:

- updates and training by the researcher, linked to current research
- a vehicle for sharing developments and/or issues
- mutual support and relationships developed enabled this to be an ongoing process
- opportunities to jointly develop resources
- ideas and materials for staff training

Importantly it has as one facilitator commented during interview; it kept CL to

the fore:

'talking to other people helps to keep cooperative learning to the forefront and not to put it on the backburner when you're busy with other tasks.' (Facilitator 8)

The network was thus crucial in providing support in a variety of ways, and in particular in supporting facilitators in their important role in providing in-house training, as Facilitator 7 stated:

' It's developed the leader in order to better be able to develop others.'

Summary

This networked learning community grew from an Education Action Zone in 1998 into a networked learning community in 2003. The most striking feature that emerged from the interviews with headteachers and recently retired headteachers was that strong relationships had been formed which were based on honesty and trust, driven by key personnel. This supported a sense of independence and willingness to innovate in pedagogy. The review of the key features of successful networks showed that this network exhibited all the features. It demonstrated a shared purpose and focus, a key part of which was to develop CL. It provided close collaboration: a forum for sharing and relationships enabled a mixture of psychological support and information sharing. Throughout its development it was led by key personnel and in turn, facilitators in schools who liaised to form their own supportive network. In summary, CL could only have been become as widely used as it has because of the support of the network. The hypothesis formed at the end of Chapter 4 has thus been confirmed as correct:

The effective implementation of cooperative learning requires cooperation in the staffroom as well as in the classroom, and it is considerably enhanced by cooperation across staffrooms – in effective networks.

The next chapter of this thesis, the conclusion, will synthesise all the findings from this research, both from the analysis of the literature into CL, and its implementation, and from the empirical research findings into this case study. This will help to provide a firm basis from which to draw some 'fuzzy

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generalisations' (Bassey, 1999: 44) which could have wider application for schools wishing to implement CL.

Chapter 8: Conclusion

8.1 Rationale for this research

This research set out to elicit key factors that led to the implementation of cooperative learning in a network of schools in the north of England. Whilst a wealth of research exists that affirms the benefits of cooperative learning, its use in the UK is relatively uncommon. One of the main instigators for this research was to explore the reasons for this and how this particular network had 'bucked the trend'. This would thus provide useful indicators for other schools wishing to put CL into practice. This is particularly pertinent as a new primary curriculum is launched in England (QCDA, 2010) which states as one of the aims of the 'Essential for Learning and Life' that:

Children develop the skills to work well with other people. They are responsible and adaptable and anticipate others' views and feelings. They appreciate the value of rules for working together, and play an active part in group and classroom activities. (2010: 15)

This thesis began by reviewing other findings into factors in the implementation of CL, and then to locate these within the UK. It then turned to a focus on the local context for this research and, in particular, what impact a networked learning community could have on such innovations in pedagogy. The principal research question was:

What key factors have contributed to the implementation of cooperative learning in the Bransholme Networked Learning Community?

Before reviewing factors present in the local context, however, it was necessary to review themes that emerged from the literature into CL into the implementation of CL. This was therefore the starting point for the empirical research.
8.2 Key Factors in the implementation of CL

As stated at the outset it was necessary to start from a definition of what is meant by cooperative learning. As discussed in Chapter 1, the definition used for the purposes of this research is:

Pupils working together in small groups on a joint task which ensures interdependence and promotive interaction, underpinned by the prerequisite small group and social skills.

Based on this understanding of what is meant by CL, the review of the literature

in Chapter 2 elicited ten key themes that emerged that have been shown to be

significant in the implementation of CL. The table below provides a brief

summary of these:

Table 8.1 Ten themes in implementing CL

	Key Factor
1	The level of interdependence is related to the success of CL (Johnson and Johnson, 1990).
2	The nature of talk or interaction is related to the level of skill in giving explanations, utilising controversy and general discourse (Chang & Wells, 1987, Cohen, 1994, 1999)
3	The nature of the task impacts on the success of CL and more open-ended tasks are more appropriate together with the sharing of resources Cohen, 1994).
4	The nature and structure of a group impacts on the success including the mix of ability, gender, race and status, with the teacher needing to ensure that low-status pupils are supported and pupil diversity celebrated (Cohen, 1994, Blatchford <i>et al</i> , 2003).
5	The need for sufficient teaching of teamwork and communication skills to pupils (Veenman, Kenter & Post, 2000, Gillies, 1996, Blatchford <i>et al</i> (2003).
6	The use of group rewards alone is unproven in supporting pupil motivation (Cohen, 1994, Bossert, 1988).
7.	The role of the teacher in managing the class for CL groups requires delegating authority to the groups with careful monitoring (Cohen, Lotan and Leechor, 1989).
8	Beginning the use of CL with young children is beneficial (Battistich & Watson, 2003).
9	Physical layout of the classroom needs careful consideration, (Blatchford <i>et al</i> (2003).
10	Provision of clear success criteria for cooperative group work, Cohen (2002).

These themes were reviewed against the findings from this research in order to see if they were important in the research context. Interview questions were developed therefore to ascertain, in particular, the views of facilitators in schools to these factors. As discussed in Chapter 6 section 6.1, all of the factors were viewed as significant by facilitators with only one factor receiving a mixed response (a focus on intrinsic rewards). Observations in classrooms together with focus group discussions with pupils also reviewed these factors (see chapter 6 pages 207-212). To summarise these findings, whilst all the ten factors were present to varying degrees, four were felt to be particularly significant:

- Ensuring interdependence; where each member of the group needs to contribute for the group to succeed. This was clearly felt to be important by facilitators, acknowledged by pupils and was in evidence through observations in classrooms.
- Providing support for children in giving explanations, and in utilising controversy productively. Pupils and teachers highlighted the importance of talk for learning.
- Providing sufficient teaching of teamwork and communication skills. This was emphasised by facilitators and acknowledged by pupils.
- Ensuring teachers delegate authority to groups with careful monitoring of progress. Facilitators discussed the changing role of the teacher and pupils valued the teacher's role, particularly alongside structuring groups.

These four factors in particular were shown to have been important in the implementation of CL in this context; however it is also necessary to ascertain the national context in which the schools were working.

8.3 CL and the UK context

The findings from chapter 2 in relation to the use of CL in the UK found that *pupils working together cooperatively to support each other's learning* is a relatively rare phenomenon (Baines *et al*, 2003:30). Little has changed since the research by Galton *et al*, in 1980, and a replica study almost twenty years later (Galton et al 1999), which showed that real interaction amongst pupils in groups is uncommon. As a consequence, there has been limited interest or research into CL in the UK until more recently, when a major study into group work was completed (Blatchford *et al*, 2005). This highlights that the work of this network in the case study was innovative in implementing CL.

Chapter 3 went on to discover the underlying reasons for this lack of interest in CL in England – a pedagogic approach that has been described as one of the most widely investigated educational methods (Slavin, 1996). A review of the context in England, and in particular the impact of changing government policy on education, proved enlightening. Viewed from Bernstein's triple lens (1973) of curriculum, pedagogy and assessment, it uncovered significant changes, with a shift to greater centralised prescription of curriculum and pedagogy and a heavy emphasis on 'high stakes' testing. In the context of greater accountability and increased pedagogic direction, teachers have been unwilling to innovate with approaches such as CL, particularly without significant support. Such developments require a network of support, or community of practice, for as

Niesz (2007:605) highlights this can be a powerful means of putting 'thoughtful professional expertise back into schooling...'

Chapter 3 also showed from the review of pedagogy in England that this has been an area that has largely remained undefined until recently (Alexander, 2004), with the recognition by the DCSF of a reliance on 'folk pedagogy' (DCSF, 2009c). Research into CL shows that one of the key factors in success is a clear knowledge of the underpinning theoretical basis (Johnson & Johnson, 2008). This requires an understanding of the range of theories on which cooperative learning is formed (as discussed in Chapter 1). It was not until 2009, over 11 years from its inception, that the National Strategies carried out professional development programmes for headteachers and deputies in primary schools to fill this void (DCSF, 2009c). Earlier guidance for secondary schools in 2004 (DfES. 2004) known as the 'ped pack' (pedagogy pack) began to address this, but it was not cascaded to primary schools for a further five years. To what extent this later emphasis on an understanding of pedagogy will impact is difficult to assess, especially as the National Strategies are due to cease in 2011. In other words, is it too little and too late?

At the same time as work is being undertaken by the National Strategies on analysing pedagogic approaches, there are strong changes in assessment practices being introduced. A shift in emphasis to teacher assessment and a move from external testing presents a possible move from 'high stakes assessment', with the White Paper (DCSF, 2009) advocating a 'Report Card' for schools to present a more holistic picture of their achievements. It also

advocates a greater degree of flexibility and proclaims a move from centralised control of the curriculum. In summary, the changes proposed, or begun, offer potential change to the picture of prescriptive control over the curriculum; limited understanding of the nature of learning and pedagogy, and high stakes external testing. How future governments will support this is a matter of debate, and whether, as the title of White Paper (DCSF 2009b) implies, England will in reality achieve a 21st century schools system. This in turn will be reliant on pressures on the economy and funding for education.

Chapter 3 also reviewed the impact of methods of training teachers and their continued professional development, the latter ranging in Kennedy's words (2005) from 'transmissive' at one end to 'transformative' at the other: the latter having the potential to impact on practice. The more recent recommendations by the Department for Children, Schools and Families (DCSF, 2007 and 2009), which advocates that teaching should become a Masters level profession together with a renewable 'licence to teach', offers the possibility of more indepth and sustained professional development. Such in-depth training and support, as this research shows, is a key factor in implementing CL.

8.3.1 Professional development for teachers

Chapter 3 not only reviewed the political context in England and the impact of government policy on education, but also looked at the changing face of training the workforce. As discussed, the literature in this area reflects increased government control and a history of short-termism, i.e. 'quick fix' initiatives to improve teaching and drive up academic standards. In relation to teacher training, the creation of the Teacher Training Agency in 1994, later to become the Training Development Agency in 2005, brought about a far greater control over the training of teachers, overseen by the use of OfSTED inspections of teacher training programmes. As Gilroy (1992 and 1998) discusses, this was based on an assumption that initial teacher education was in some way failing to provide effective training.

Centralised control over continuing professional development for teachers also became apparent from 1987 with the instigation of statutory training days for teachers by the then Secretary of State for Education, Kenneth Baker, thereafter known as 'Baker days'. Since then, the dominance in the 1990s of the one-day course (Bottery & Wright, 2000) and in the late 1990s and early 2000s, the model of 'cascade' training, where one teacher went on a short training course and was required to 'cascade' the information to other members of staff, all proved largely ineffective in bringing about any lasting impact on teaching and learning. Kennedy's (2005) review of CPD summarises the types that were common and makes a clear distinction between 'transmissive' training often delivered by 'experts' in a field to impart some type of new knowledge or practice, to 'transformative' training which shows the potential to really impact on practice, and which includes a fusion of co-coaching, action research and teachers working in communities of practice.

Dissatisfaction with the effectiveness of CPD led the Government to instigate extensive reviews. These have been carried out by the Evidence for Policy and Practice Information and Coordinating Centre (Cordingley *et al*, 2003), the

Training and Development Agency (TDA, 2007), and the General Teaching Council for England (GTCE, 2007). Common findings from these showed that effective CPD needed to be sustained, tailored to teachers' needs, and should include the notion of professional learning communities. Cordingley *et al* (2003) looked at the impact of collaborative CPD and found that where this included schools, Local Authorities and Higher Education Institutions, it had a resoundingly positive impact. Niesz (2005) highlights the power of 'communities of practice' in which 'learning and teaching are interwoven in social networks' (2007: 605). It is such research that led to the introduction of networked learning communities by the NCSL in 2002 and as this has key resonances with this research, it is to this aspect that the next section turns.

8.3.2 Effective networks

Chapter 4 discussed the development of networked learning communities from 2002 until 2006 when the funding dried up in spite of the NCSL's website proclaiming '*massive potential benefits*' (NCSL, 2007:5). The reason for their demise was driven by changing government policy and the need for clear evidence of impact. To provide such evidence of impact on practice is difficult, as Earl *et al*, (2006) found. In addition, effective networks required key factors to be in place, particularly, shared focus and purpose, strong relationships, a climate of collaboration and enquiry, distributed leadership, accountability and capacity building (Earl *et al*, 2006). Nevertheless, some networks continued, as is the case with the one that forms the focus for this case study.

8.4 Local context for this study

As detailed in Chapter 4, this case study is set in a particularly socially and economically deprived area of the north of England: Hull. The locality of this networked learning community in Bransholme, to the north of the city, reveals further deprivation, but significant community links and the community-led regeneration project has shown progress with key priorities, including education (Hull City Council, 2008). Developed from a successful EAZ (Moore, Waugh and English, 2001), the networked learning community commenced in 2003. From its outset in 2003, a preliminary evaluation of the work of the Bransholme NLC highlighted its success and identified evidence of: *'pupil learning, adult learning, leadership learning, school wide learning and school to school learning'* (Woods, 2003: 6).

The Bransholme NLC set out specifically to impact on pupil learning through embedding the use of CL, enhanced by developing the expertise of the cooperative learning facilitator in each school. Thus, there was an agreed shared purpose and focus. As the longitudinal data shows, over the period from 2004 to 2009, CL became 'widely' used. Whilst the funding ceased in 2006 for the NLC, much of the work of this network continued, together with ongoing networking between the schools. This network therefore demonstrated the identified features of successful networks, i.e. shared purpose and focus; a combination of information sharing; and psychological support and an effective facilitator. To what extent this was the crucial factor on the ability to embed an innovative pedagogical approach - CL – that bucked the national trend,

therefore formed one key part of this research and the following research questions were developed:

- 1. What is the nature of the network and how has it evolved?
- 2. What are the views of staff on the power of the network to offset outside pressures and focus on self-determined initiatives?

Discussion of the findings is the subject of the next section.

8.5 Research findings: impact of the network

The research provided a longitudinal picture over five years (2004 to 2009) of the implementation of CL within this network, and in 2008-2009, it reviewed the impact of the network in implementing CL.

One of the principal aims of the network was to embed the use of CL. There were strong indications in 2004 that CL was becoming part of everyday classroom practice across the schools. An evaluation in 2005 (Jolliffe, 2005, Jolliffe & Hutchinson, 2007) found that in the then 14 schools (later reduced to 11, as 3 primary schools closed due to falling pupil numbers), 78.6 per cent of all staff were reported by headteachers and facilitators to be using CL. By 2008, this was shown to be 100% from questionnaires completed by teachers, and, in addition, this included both informal paired work, which is less difficult to implement, as well as more formal group work. Teachers' responses from questionnaires regarding their confidence in using CL showed that in 2008 a total of 85.7% of respondents reported that they were either very confident or confident in using CL.

8.5.1 The nature of the network and how has it evolved

The context of the case study: the network was summarised earlier in this chapter. However, the geographical, social and economical circumstances do not tell the whole story. What is significant here is what was unique about this network: what specific features were significant that in turn impacted on implementing CL. Chapter 7 has detailed these, firstly reviewing the features of successful networks identified from research ((Lieberman, 1999, Cordingley *et al*, 2006 and Earl *et al*, 2006) against features of this network (table 7.1). The five key indicators of successful networks:

- 1. Shared purpose and focus
- 2. Collaboration which ensured all parties are involved
- 3. Commitment of headteachers
- 4. A mixture of information sharing and psychological support
- 5. An effective facilitator

These were reviewed in the context of this case study, as discussed in Chapter 7 and all of these were shown to be present. These thus formed the basis of a successful network that was empowered to make innovations, such as implement CL.

8.5.2 Views of staff on the power of the network and its impact on implementing CL

Chapter 7 details the impact of the network on implementing CL, summarised in Table 7.2. Based on the sense of real partnership and mutual support, interviews with headteachers and facilitators clearly indicated that the role of the network provided independence and ownership over the curriculum. Such

independence led the network, in its earlier form as an EAZ, in 2000, to adopt a very different method of teaching literacy: *Success for All*. This was at the time when the use of the National Literacy Strategy was recommended in all primary schools, and, whilst not statutory, there was a clear requirement that anything different would need to be closely scrutinised by Ofsted. Research from an MEd by the author, into a comparison of the National Literacy Strategy and the use of *Success for All* (Jolliffe, 2006), showed the lack of a clear underpinning pedagogy impacted on the effectiveness of large-scale initiatives. In other words, teachers need to know '*not just what to teach, but why they are doing it*'. (Jolliffe, 2006: 42).

The introduction of *Success for All*, which is based on Slavin's model of CL (1996) in four primary schools in the network in 2000, provided the stimulus to develop the underpinning pedagogy of CL throughout the network in 2003, and by 2005, as the author's evaluation showed (Jolliffe, 2005, and Jolliffe and Hutchinson, 2007), well over three quarters of staff across the network were making use of CL. This was at a time when, nationally, CL was rare and contrasted to a dominant model of whole-class teaching. The repeated mention of the network supporting 'innovation' and developments in pedagogy by headteachers and some facilitators showed that the network '*was ahead of the game*' (Headteacher 10). This was largely due to the level of independence the network afforded the schools, so that they were '*totally independent from the Local Authority*' (Headteacher 10) as one recently-retired and long-standing headteacher acknowledged. This was because of a group of '*risk-taking heads*' who were able to make '*the judgements and the decisions*' (Headteacher 10). It

is clear from this that without such level of independence, implementing a totally different pedagogy in a climate of heavy prescription would have been extremely difficult. In other words: the network enabled it to happen.

The fact that the network could do this was largely dependent on the nature of the network, and analysis of the interviews with headteachers and facilitators showed that the strength of the network revolved around the relationships that had been built up, based on mutual trust and support and a sense of altruism. The analysis of these interviews using a grounded theory approach showed that the following words resounded: trust, partnership, honesty, support (see Chapter 7, Table 7.3). This is summed up by the comment of Headteacher 10:

'At its best it was the genuine partnership of the headteachers and staff and the genuine sharing of resources, training, data, for the benefit of all.'

Such partnership had been built up over time, with some headteachers knowing each other and working together for many years. Nevertheless, there were considerable changes in personnel from 2003 to 2009 and the network continued, so that one headteacher talked of its evolution to a '*soft federation*' (Headteacher 6) Relationships were important, but another significant factor that contributed to this network was the role of key personnel that drove it. Over half of headteachers interviewed mentioned this, referring to the director of the former EAZ and to the headteachers who became co-leaders of the NLC. As Headteacher 11 stated: *'you need people to do that facilitating role'*.

Facilitators also highlighted the role of the network in implementing and developing CL. They identified that it empowered them and kept the focus on

CL higher and valued the benefits of sharing and mutual support. They also reiterated the impact of the network in supporting innovation, such as CL, although one facilitator, and one more recently appointed Headteacher 6, commented that '*I* am not so sure whether that reduces the pressures any'.

The impact of the network on the implementation of CL is summarised in chapter 7, Table 7.2. Whilst schools were still under heavy pressure to improve academic standards in an area where this proved a real challenge, this network not only bore out all the key features of effective networks (Lieberman, 1999, Cordingley *et al*, 2006 and Earl *et al*, 2006), but it was demonstrably successful. It had evolved from long-standing relationships amongst headteachers:

'I think it was to do with relationships. One of the huge advantages was that we had a group of headteachers who had known each other for 20/30 years.' (Headteacher 10)

In a climate of recognising that as one headteacher stated:

'It was open arms because I think in many ways we recognised that we all had the same problems and the same challenges and what was the point in pretending that we didn't'?

In many ways, therefore, there were particular features of this network that led to its success. It had become a community of practice (Wenger, 1998) and as such it became fertile ground for the development of cooperative learning.

There was yet one further factor that supported this network in implementing CL: it was a network within a network. This 'nested' form of networking, which consisted of interdependent layers, provided a unique feature. It presented a multi-dimensional community of practice. Not only were headteachers a mutually supportive group, but also teachers and facilitators. The strong

facilitators group that developed from 2005 until 2009 proved powerful in crossfertilisation of practices, resources and psychological support (see Chapter 6, Table 6.9). The agenda for the group were driven by the needs of the schools and a consensus, and provided a wealth of resources, including a handbook for staff, support for in-house training, and importantly visits to each other's schools to observe good practice. This is turn was cascaded to staff in schools. Facilitators' enthusiasm and developing expertise was a key factor in driving forward the continued development of CL. The extent to which they were influential in supporting staff, further depended on the commitment by headteachers and a willingness to fund release from teaching, for facilitators to provide the required support.

The network was thus a crucial factor in the implementation of CL in this case study. However there was a second aspect to the research concerning how teachers and pupils were supported in doing this. One of the originators of CL, Spencer Kagan (1994), noted that success in using CL requires teachers and pupils to not only develop the necessary skills, but also to have the will to do so. Thus the following research questions were developed:

- What are the attitudes of staff and pupils to the use of cooperative learning in promoting effective teaching and learning?
- What types of support have enabled CL to be used?

The next section reviews the findings in relation to these questions.

8.6.1 The attitudes of staff and pupils to CL

It is significant that the most common response in interviews with headteachers and facilitators to the question:

What are your views on the use of cooperative learning in promoting effective teaching and learning?

was that it is an effective 'tool for learning' (Headteacher 1). This was because respondents found pupils were 'engaged' and 'active' (Headteacher 11) in their learning, and the learning became 'deeper' (Headteacher 9) because pupils had to 'verbalise something' - it 'clarifies their thoughts' and 'you embed that learning ... you have got to be able to teach that to somebody else and you can do that through cooperative learning' (Headteacher 9). Teachers responses on questionnaires showed that over 90% agreed that CL had an impact on Heavily linked to this was the repeated response from academic skills. interviews to the impact that CL had on oracy skills due to the 'amount of *emphasis that is on the discussion*' (Facilitator 1). This they found particularly significant due to the low levels of oral language skills that many children started school with, and the marked difference that CL made on 'vocabulary and language' (Faciliator 2) and the ability to 'talk to each other in a very *cooperative manner*' (Facilitator 3). Pupils themselves commented in interviews on how important it was to have 'friends to teach you' (interview May 2008) and it 'helps with learning' (Interview 11.02.09) and observations in classrooms found that there was clear evidence of pupils supporting and helping each other.

The other key theme from interviews with headteachers and facilitators was the impact that CL has on inclusion, with more able children taking on '*the mentor*'

role' (Facilitator 1) as it is the 'responsibility of the group to tutor the weakest member' (Facilitator 3). This also reflected the improved social skills, and the majority of facilitators discussed this in interviews agreeing that working in this way made the pupils 'far more emotionally mature and able to kind of relate to other people' (Facilitator 3). Classroom observations revealed a strong willingness to share and pupils mentoring each other, and pupils themselves talked about 'helping each other' being a key part of CL and something they valued. Questionnaires to teachers also showed that almost all (99%) strongly agreed or agreed that CL had an impact on social skills and, in addition, almost as many (92.8%) felt it improved their attitudes to learning. Triangulation of data therefore showed that there was strong evidence of impact on learning and pupils' attitudes to learning.

Another recurrent theme from interviews was the impact on providing opportunities for ensuring 'pupil voice' was heard. It led to greater pupil ownership over their learning. One headteacher of a secondary school commented that 'students' voice is linked to this and students are empowered' and the facilitator from the same school commented 'it gives them more responsibility ownership over their own work'. In lessons observed, it was reported, pupils were consistently on task as a result, and in interviews they commented that working this way was 'more enjoyable' (Interview 11.02.09).

The other key aspect of the impact of CL, frequently cited in interviews, was improved pupils' confidence and self-esteem, with pupils now having the 'confidence to speak out' (Facilitator 10) and interviewees agreeing that 'it

builds self esteem' (Facilitator 3). This, many schools found, had been borne out by visitors to the schools, including Ofsted inspectors. Pupils themselves said during interviews that they felt '*more confident*' (Interview 11.02.09) as a result of working cooperatively.

A further impact, particularly noted by the secondary schools, was on transition from primary to secondary school; with assertions that they were '*feeding off other schools*' (Facilitator 4) and that was a '*natural progression*' (Facilitator 10).

8.6.2 Methods of support in the implementation of cooperative learning

Longitudinal data obtained from yearly questionnaires completed by facilitators from 2005 to 2008 showed that there was a strong preference for schools to have in-house support through the facilitator, together with co-coaching and observing good practice. In particular, the facilitators' network meetings were rated very highly by facilitators themselves in developing their own expertise.

Teachers responded in questionnaires that in addition to support from facilitators, which many rated highly, they appreciated resources that had been produced by the network group of facilitators, as well as peer support. Interviews with headteachers and facilitators showed that particular support strategies that were valued included: a handbook for staff; peer mentoring which had resulted from the introduction of CL; a comprehensive induction programme for new staff, but again verified that, as headteacher 8 commented:

'the work of the facilitator has probably been the most successful.'

Interviews with facilitators in 2008 also aimed to test out the key factors that had been identified from the literature review that supported implementation. These are shown in Chapter 6, tables 6.1 and 6.2. The ten key factors identified from a review of the research literature were verified in this case study. The only aspect that caused some dispute centred on the use of extrinsic rewards some facilitators finding that if given to groups or pairs, these rewards could provide motivation. Table 6.5 in Chapter 6 also cross-checked the views of facilitators with pupils' responses and observations in classrooms. This showed two differences: firstly the nature of groupings differed according to age. Older secondary pupils felt much more secure in friendship groupings, whereas primary age pupils were much happier for the teacher to decide on groupings, recognising that this way they worked better. The second difference was that whilst facilitators valued the importance of making clear the success criteria to pupils for cooperative group work, this was not consistently witnessed in classrooms. Two facilitators stated that this was an area to be worked on in their schools.

To summarise, this case study verified the key factors found from a review of the research literature, but also found that for this case study the most important aspect in successfully implementing CL was the role of the facilitator, particularly when a network of support existed for those facilitators, as was present here. One further factor that was present and proved valuable in supporting the implementing of CL was the developing of coaching and mentoring skills in all of the schools, which provided teachers with enhanced skills of peer support. The fact that a number of teachers selected the

development of cooperative learning pedagogy as a focus for their performance management also highlighted the value they put on it, and their willingness to develop their skills in using it. This was further evidenced by some teachers selecting this as an area for action research as part of the Teacher Learning Academy staged recognition.

8.7 Barriers and enablers

This research has inevitably revealed barriers to developing CL. An awareness of these is crucial in supporting its development. Chapter 6, table 6.9 presented a summary of progress and issues that arose, drawn from the minutes of facilitators' meetings. The mutual support afforded by the group, however, provided clear ways forward, or enablers. Some of the keys were: aligning CL with other priorities in school as part of the school improvement plan, in order to avoid initiative overload and retain commitment; having a clear induction programme for new staff to offset staff turnover issues; using CL strategies as reminders/refreshers when conducting any school training to avoid becoming 'stale' in the using CL; providing guidance and phased development of CL in different age ranges to prevent difficulties experienced using CL with younger children.

Teachers' responses to questionnaires included opportunities to voice concerns and, apart from those issues raised by facilitators, these included:

- behaviour management linked to children who needed additional support with inter-personal and small group skills
- time to plan CL into lessons

- support with pupil groupings and supporting pupils of varying abilities
- further resources for the classroom
- physical issues such as the size of the classroom inhibiting use of CL

A number of teachers also requested further training and/or observation of CL in other classrooms/schools. These issues were relayed to facilitators in order to help prioritise next steps in school. What this highlights is that CL requires ongoing support and that facilitators need continually to review or audit teachers' and pupils' needs. This also became a point for action, with regular termly or annual audits becoming a key part of the facilitators' work in 2008/09.

Pupils themselves highlighted barriers to CL, during focus group interviews. These revolved around relationships within groups, and a lack of interpersonal and small group skills by some pupils. This indicates that not only do teachers need ongoing support, but so do pupils, and in some cases this support may particularly need nurturing where pupils have difficulties with social skills. As stated in the conclusion to chapter 6, and worth reiterating: in order for CL to flourish, it requires ongoing support to develop the skills of teachers and pupils.

8.8 Limitations of this research

This research, not surprisingly, has shown a number of limitations which need to be borne in mind when reviewing conclusions drawn. These are principally as follows:

- Issues of reflexivity: the researcher became over a period of over five years closely involved with the schools in the network, as a result relationships were formed and attitudes to the development of CL. Whilst every effort was made to triangulate evidence and eliminate elements of subjectivity: there is a danger of elements of this remaining.
- Limited number of observations in classrooms: only eight observations (including a pilot observation) were carried out in total. It would have been useful to have completed a larger number in all schools in the network in order to verify the findings. In addition, the procedure of recording tallies of observed behaviours at timed intervals, presented difficulties in firstly ensuring that the behaviour observed fitted the category and secondly ensuring that observations were not selective. It would thus have been useful to have more than one researcher carrying out such observations after a trialled process.
- The number of pupil focus group discussions was again limited. These proved particularly enlightening in ascertaining pupils' views on CL and a larger number of these across all schools would have been useful.
- An unwillingness to be involved: this was only the case with one headteacher who had only been in post a relatively short time and who refused to be interviewed, due to both time factors and a lack of engagement with CL. It was fortunate that all other headteachers and facilitators agreed to take part.
- A key limitation of the research is the longer term sustainability of CL in this network. Whilst a picture has been gained over five years, it would doubtless be valuable to repeat the research at a later date in order to

ascertain the extent CL has been sustained and for example what impact any changes in key personnel may have.

In summary, however, these research findings do show a picture over a period of five years of this network and the implementation of CL and thus some implications for wider implementation in other schools can be gleaned. This is the subject of the next section.

8.9 Implications for practice and 'fuzzy' generalisations

In answer to the central research question in this thesis: What key factors have contributed to the implementation of cooperative learning in the Bransholme Networked Learning Community? Some aspects became apparent:

- 1. It requires a whole-school commitment that links CL to other key priorities of the school.
- 2. It requires teachers to have a clear understanding of the underlying theoretical bases upon which CL is built, linked to an understanding of how to support effective learning; in particular the role of talk for learning.
- 3. It requires a phased introduction linked to the needs of different aged pupils, moving from informal paired work to more formal group work.
- 4. It needs a facilitator or coordinator to support teachers, with time to work alongside them.
- It is necessary to ensure that the key elements of CL are in place of positive interdependence and promotive interaction, underpinned by the necessary small group skills.

- It requires a programme of teaching small group skills and continually revisiting and developing them, with differentiated support for pupils who encounter difficulties.
- Teachers need support to plan appropriate tasks and to incorporate CL into their lessons.
- 8. Teachers need support in the composition of groups.
- 9. The assessment of group work skills together with clear success criteria needs to be developed alongside assessment of pupils' learning.
- 10. It flourishes best within a network of schools, or a community of practice.

Conclusion

This research set out to provide an in-depth case study of implementing cooperative learning in one networked learning community of schools. As Stake (1995: xi) sets out, a case study involves the study of '*the particularity and complexity of a single case*'. As this thesis has shown, this case study involves a particularly successful network and it has aimed to show the richly interwoven elements: a multi-dimensional community of practice. Its evolution has clearly contributed to this and the key personnel who have driven it. As has been shown, without it, CL would not have flourished, or even have begun. It provided independence and in challenging circumstances; a clear drive to find something 'different': some way to not just impact on academic standards, but as the comments from headteachers have shown, to impact on communities. This is based on the strong realisation that schools alone cannot fundamentally change the aspirations and educational climate of a locality.

Bassey's (1999) work on the use of case studies for research purposes helpfully describes '*fuzzy generalisations*' (1999: 44) that can emerge from case studies. In viewing this case study, therefore, the fuzzy generalisations that can be gleaned are:

- Developing a radically different pedagogy such as CL requires multilayered support and one school acting alone in a climate that is not conducive to CL is unlikely to be successful.
- Networks can be powerful, as long as they are built on a commitment from headteachers; foster trust, shared purpose and focus, and ensure collaboration by all parties with personnel to facilitate them.
- Networks need to incorporate multi-dimensional communities of practice, these bear much in common to Bronfrenbrenner's model of ecological development (1979) thus:



In conclusion, and to present some 'fuzzy generalisations' in the words of Bassey (1999: 44), if cooperative learning is implemented in steps as set out above, alongside significant and ongoing support, it can be successful as this study shows. The enthusiasm from all parties who have engaged with this process is apparent and, as one secondary age pupil commented, the gains are

worthwhile:

in your future career, you need all of those skills so you need to develop them. (Pupil B, Interview 11.02.09)

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Appendices

- 1. Ethics application
 - a. Consent form application
 - b. Letter to headteachers
 - c. Letter to Facilitators
 - d. Letter to parents
 - e. Letter to teachers
 - f. Pupils consent
- 2. Pilot questionnaire
- 3. Questionnaire teachers
- 4. Semi-structured interview schedules and prompts
 - a. Semi-structured interview schedule: headteachers
 - b. Semi-structured interview schedule: facilitators
- 5. Pupils focus group discussion prompts
- 6. Observation schedule

A PROFORMA FOR

STAFF AND STUDENTS BEGINNING A RESEARCH PROJECT

Institute for Learning

Research Proposer(s): Wendy Jolliffe.....

Programme of Study.....MPhil/PhD....

Research (WorkingDissertation/Thesis) Title: The Implementation of CooperativeLearning: a case study of a networked learning community.

Description of research (please include (a) object of research; (b)principal research question (c) methodology or methodologies to be used (d) who are the participants in this research.

This research aims to elicit key factors in successfully implementing cooperative learning in England. Whilst a wealth of research exists into cooperative learning: its benefits, specific types and use in different subjects and age groups, there is a paucity of research on effective implementation. This is particularly the case in the UK where the use of cooperative learning is uncommon and until relatively recently when a major study into groupwork was completed (Blatchford *et al,* 2003) only limited research had been carried out.

This research therefore aims to analyse the factors that have supported the implementation of cooperative learning in a network of schools in the North of England. It will determine the extent of use, the most effective methods of support and the impact on pedagogy in addition to children's learning.

The principal research question is thus:

What are the key factors in successfully implementing cooperative learning?

Subsidiary questions are:

- 1. What are effective methods of support for teachers in implementing cooperative learning?
- 2. Do communities of practice support innovations in pedagogy, specifically cooperative learning?
- 3. Of what importance are contextual and cultural factors to success?

The methodology to be used is:

- 1. Interviews with Headteachers, Facilitators, a sample of teachers and pupils.
- 2. Questionnaires to all staff

Proforma Completion Date:23.05.08....

This proforma should be read in conjunction with the IfL research principles, and the IfL flow chart of ethical considerations. It should be completed by the, researchers. If it raises problems, it should be sent on completion, together with a brief (maximum one page) summary

of the problems in the research, or in the module preparation, for approval to the Chair of the IfL Ethics Committee prior to the beginning of any research.

Part A

1.	Does your research/teaching involve animal experimentation?	N.
	If the answer is 'YES' then the research/teaching proposal should be sent direct to the University Ethics Committee to be assessed.	
2.	Does your research involve human participants?	Y
	If the answer is 'NO', there is no need to proceed further with this proforma, and research may proceed now. If the answer is 'YES' please answer all further relevant questions in part B.	
Part B		
3.	Is the research population under 18 years of age? Y (The majority of research will take place with teachers, however interviews w number of pupil focus groups is also planned.) If yes, have you taken the following or similar measures to deal with this issue (i) Informed the participants of the research? (ii) Ensured their understanding? (iii) Gained the non-coerced consent of their parents/guardians?	ith a small ?? Y Y Y
4.	Will you obtain written informed consent from the participants? If yes, please include a copy of the information letter requesting consent If no, what measures will you take to deal with obtaining consent?	Y
5.	Has there been any withholding of disclosure of information regarding the research/teaching to the participants? <i>If yes, please describe the measures you have taken to deal with this.</i>	Ν
6.	Issues for participants. Please answer the following and state how you we perceived risks:	ill manage
	a) Do any aspects of the study pose a possible risk to participants' physical well-being (e.g. use of substances such as alcohol or extreme situations such as sleep deprivation)?	NO
	b) Are there any aspects of the study that participants might find humiliating, embarrassing, ego-threatening, in conflict with their values, or be otherwise emotionally upsetting?*	NO
	c) Are there any aspects of the study that might threaten participants' privacy (e.g. questions of a very personal nature; observation of individuals in situations which are not obviously 'public')?*	NO
	d) Does the study require access to confidential sources of information (e.g. medical records)?	NO

	e Could the intended participants for the study be expected to be more than usually emotionally vulnerable (e.g. medical patients, bereaved individuals)?	NO
	f Will the study take place in a setting other than the University campus or residential buildings? YES	
	g Will the intended participants of the study be individuals who are not members of the University community? YES	
	*Note: if the intended participants are of a different social, racial, cultural, age or group to the researcher(s) and there is <u>any</u> doubt about the possible impact of th planned procedures, then opinion should be sought from members of the relevar group.	sex ne nt
7.	Might conducting the study expose the researcher to any risks (e.g. collecting data in potentially dangerous environments)?	N
8.	Is the research being conducted on a group culturally different from the researcher/student/supervisors? N If yes, are sensitivities and problems likely to arise? N If yes, please describe how you have addressed/will address them.	Y/N?
9.	Does the research/teaching conflict with any of the IfL's research principles? (please see attached list). If yes, describe what action you have taken to address this?	N
10.	If the research/teaching requires the consent of any organisation, have you obtained it? Y If no, describe what action you have taken to overcome this problem.	ſ
11.	Have you needed to discuss the likelihood of ethical problems with this research with an informed colleague? No If yes, please name the colleague, and provide the date and results of the discussion.	N
lf you'\	ve now completed the proforma, before sending it in, just check:	
	a. Have I included a letter to participants for gaining informed consent? Y	
	b. If I needed any organisational consent for this research, have I	
	included evidence of this with the proforma?	
	c. If I needed consent from the participants, have I included evidence for the different kinds that were required?	

Lack of proof of consent attached to proformas has been the major reason why proformas have been returned to their authors.

This form must be signed by your supervisor and the IfL Ethics Committee representative for your area. Once signed, copies of this form, and your proposal must be sent to Mrs Jackie Lison, Centre for Educational Studies (see flow chart), including where possible examples of letters describing the purposes and implications of the research, and any Consent Forms (see appendices).

Name of Student/Researcher Wendy Jolliffe	
Signature	Date 23.05.08
Name of Supervisor/Colleague	
Signature	Date
Name of Ethics Committee member	
Signature	Date

Letter to Headteachers

Dear

Cooperative Learning Research

As you will be aware I have for the last three years been working with your Cooperative Learning Facilitator in order to support the development of cooperative learning. I am researching key factors in the implementation of cooperative learning for my PhD and taking the schools in the Bransholme network as a case study. I would be most grateful if you could please complete the attached questionnaire in order to assist in evaluating progress. This is a repeat of a questionnaire completed by each school in Autumn 2005. This will enable an assessment of progress to date.

I would also be most grateful if I could follow this up with a brief interview with yourself and your Facilitator in order to explore your views more fully. I would like to stress that all information obtained will remain anonymous and no school or member of staff will be identified. I will, of course, be happy to share information with you that may assist in your own school development plans. If you have any queries about ethical issues related to this research, please contact the secretary to the IfL Ethics Committee (Mrs J. Lison, Centre for Educational Studies, University of Hull, Hull HU6 7RX.).

I will be in touch shortly to arrange a convenient time to call and talk to you and your Facilitator.

Yours sincerely

Letter to Facilitators

Dear

Cooperative Learning Research

As you know I am in the process of researching key factors in the implementation of cooperative learning for my PhD, taking the schools in the Bransholme network as a case study.

I am reviewing current progress by asking your Headteacher to complete a questionnaire which is a repeat of a one done in Autumn 2005. I am also following this up with an interview of Headteachers and yourselves and would therefore like to arrange a mutually convenient time to visit you.

I would like to stress that all information obtained will remain anonymous and no school or member of staff will be identified. You will also have the opportunity to review the transcript of the interview to verify that it is an accurate record. . If you have any queries about ethical issues related to this research, please contact the secretary to the IfL Ethics Committee (Mrs J. Lison, Centre for Educational Studies, University of Hull, Hull HU6 7RX.).

I will be in touch shortly to arrange a convenient time to call. In the meantime thank you for your help in this matter.

Yours sincerely

Dear Parent/Carer

Cooperative Learning Research

As part of my PhD research, I am examining the use of pupils working together to support their learning. During this research, I will be observing your child's class to note key aspects and also talking to small groups of pupils about their views. I would be grateful if you would give permission for your child to participate in this research by signing and returning to the school office the form below. If you have any queries about ethical issues related to this research, please contact the secretary to the IfL Ethics Committee (Mrs J. Lison, Centre for Educational Studies, University of Hull, Hull HU6 7RX).

I would like to stress that all information obtained will remain anonymous and no pupil, teacher or school will be identified.

Thank your for your cooperation.

Yours sincerely

I do/do not give permission for my child to be involved in research into cooperative learning.

I understand that

- 1. The aims and methods of the research study, have been explained to me.
- 2. I voluntarily and freely give my consent to my child's/dependant's participation in such research study.
- 3. I understand that aggregated results will be used for research purposes and may be reported in scientific and academic journals.
- 4. Individual results **will not** be released to any person including medical practitioners.
- 5. I am free to withdraw my consent at any time, during the study in which event my child's/dependant's participation in the research study will immediately cease and any information obtained will not be used.

Signed Date

The contact details of the researcher are: Mrs Wendy Jolliffe, Centre for Educational Studies, University of Hull, Hull HU6 7RX.

The contact details of the secretary to the IfL Ethics Committee are Mrs J Lison, Centre for Educational Studies, University of Hull, Cottingham Road, Hull, HU6 7RX. Email: <u>J.Lison@hull.ac.uk</u> tel. 01482-465988.

Letter to teachers

Dear

Cooperative Learning Research

As you may be aware I have for the last three years been working with your Cooperative Learning Facilitator in order to support the development of cooperative learning in your school. I am researching key factors in the implementation of cooperative learning for my PhD and taking the schools in the Bransholme network as a case study.

I would be most grateful if you could find time to fill in the attached questionnaire which should take no longer than 10 minutes of your time. If you can leave the completed questionnaires in the envelope provided in your school office, I will collect them. I would also like to opportunity to talk to any teachers for a short time in order to explore your views further. Please indicate whether you are prepared to do this on the questionnaire.

I would like to stress that all information obtained will remain anonymous and no school or member of staff will be identified. Many thanks for your time.

Yours sincerely

For gaining consent with focus groups of pupils in Key Stages 2 and 3, the following statement will be made:

Please confirm that you are happy to talk about your views on working together in pairs and groups to support each other's learning. The discussion will take place with small groups and you are free at any time to refuse to take part.

I will be collecting information from different schools and pupils, as part of my work at the University, but I will make sure that nobody will be named, nor any school.

If you are not happy to take part, please let me know.

Thank you for listening.



THE UNIVERSITY OF HULL

Questionnaire: Implementing Cooperative Learning in the Classroom

(This is an anonymous questionnaire. Please ensure that you do not write your name or any other comments on it that will make you identifiable. By completing the questionnaire you are consenting to take part in this research. You are advised to read the enclosed letter carefully as it explains fully the intention of this project.)

- 1. Contextual information. Please indicate:
- a) How long you have been working at this school:
- b) What year group (primary) or subject (secondary) you teach:
- 2. Do you make use of cooperative learning when teaching?



Yes

If yes, how long have you been using Cooperative Learning? If no, please go to question 6.

Please tick as appropriate:

Less than 1 year	Up to 2 years	2-3 years	Over 3 years

3. Please tick any of the following cooperative learning structures you have used: think/pair/share

active listening	
numbered heads	
twos to fours	
graphic organisers	
group roles	
jigsaw	
three step interview	
other (Please indicate which)	

4. How confident do you feel about using co-operative learning techniques? Please circle the appropriate number, (1 = very confident and 4 = not confident)

Very confident 1 2 3 4 Not confident

5. Extent of use

Please indicate the extent to which you use cooperative learning:

In most lessons	
In over half of lessons on average	
On average about once each day	
About once or twice a week	
Rarely	

- 6. To what extent do you agree that cooperative learning improves:
- a) pupils' academic skills?

Please mark on the scale below:

1 Strongly Agree	2 Agree	3 Unsure	4 Disagree	5 Strongly Disagree

b) pupils' social skills?

1 Strongly Agree	2 Agree	3 Unsure	4 Disagree	5 Strongly Disagree

c) pupils' attitudes to learning?

1 Strongly Agree	2 Agree	3 Unsure	4 Disagree	5 Strongly Disagree

7. Have you received training in using cooperative learning?

Yes

No

If yes, please indicate the length/type of training you have already received:

Brief introduction	A series of twilight sessions	1 full day	2 full days	More than 2 days	Other

8. Are you currently being provided with any school-based support for cooperative learning?

Yes	No
-----	----

If yes, please describe this briefly.

9. What factors, if any, prevent you from using cooperative learning more extensively?

10. What further support, if any, do you feel you need?

Thank you for taking the time to answer this questionnaire. If you would be prepared to discuss your views on cooperative learning in greater depth, please indicate to your Facilitator.



Questionnaire: Implementing Cooperative Learning in the Classroom

(This is an anonymous questionnaire. Please ensure that you do not write your name or any other comments on it that will make you identifiable. By completing the questionnaire you are consenting to take part in this research. You are advised to read the enclosed letter carefully as it explains fully the intention of this project.)

- 1. Contextual information. Please indicate:
- a) How long you have been working at this school:
- b) What year group (primary) or subject (secondary) you teach:
- 2. Do you make use of cooperative learning when teaching?

No	
----	--

Yes

If yes, how long have you been using Cooperative Learning? If no, please go to question 6.

Please tick as appropriate:

Less than 1 year	Up to 2 years	2-3 years	Over 3 years

3. Please tick any of the following cooperative learning structures you have used: think/pair/share

active listening		
numbered heads		
twos to fours		
graphic organisers		
doughnut		
line-up		
group roles		
envoying		
jigsaw		
class presentations		
talking chips		
three step interview		

other (Please indicate which)

4. How confident do you feel about using co-operative learning techniques? Please circle the appropriate number, (1 = very confident and 4 = not confident)

Very confident 1 2 3 4 Not confident

5. Extent of use

Please indicate the extent to which you use cooperative learning:

In most lessons	
In over half of lessons on average	
On average about once each day	
About once or twice a week	
Rarely	

6. To what extent do you agree that cooperative learning improves:

a) pupils' academic skills?

Please mark on the scale below:

1 Strongly Agree	2 Agree	3 Unsure	4 Disagree	5 Strongly Disagree

b) pupils' social skills?

1 Strongly Agree	2 Agree	3 Unsure	4 Disagree	5 Strongly Disagree

c) pupils' attitudes to learning?

1 Strongly Agree	2 Agree	3 Unsure	4 Disagree	5 Strongly Disagree

7. Have you received training in using cooperative learning?

Yes

No

If yes, please indicate the length/type of training you have already received:
Brief introduction	A series of twilight sessions	1 full day	2 full days	More than 2 days	Other

8. Are you currently being provided with any school-based support for cooperative learning?

No

If yes, please describe this briefly.

9. What factors, if any, prevent you from using cooperative learning more extensively?

10. What further support, if any, do you feel you need?

Thank you for taking the time to answer this questionnaire. If you would be prepared to discuss your views on cooperative learning in greater depth, please indicate to your Facilitator.

Interviews Headteachers - Cooperative Learning in the Bransholme Networked Learning Community

Date:

Interview No:

Thank you for agreeing to be interviewed. Are you also happy to have this recorded on tape in order that I may be able to get an accurate picture of your views?

The purpose of this interview is to ascertain information about the implementation of cooperative learning within the context of the Bransholme EIC/NLC. All information will be treated in confidence, and no school or person will be named. You will also have the opportunity to read a transcript in order to verify it is a true record.

A. The Network

1. Can you tell me how long you have been Headteacher at this school?

2. Can you describe your involvement in what was the Bransholme Networked Learning Community, later the EIC? Prompts:

- Steering committee?
- Attending meetings?
- Other?

3. Can you give me an overview of some significant features of the network and how this has supported your school? Prompts:

- Relationsl
 - Relationships? Activities?
 - Activities
 Other?
- 4. To what extent do you think that the network has helped to offset the pressures that schools are under from outside agencies and supported you to focus on self-determined initiatives such as cooperative learning? Prompts:
 - Ofsted?
 - Other government/National Strategies initiatives?
 - Local Authorities?

B. Cooperative Learning

Following on from the questionnaire, I would like to explore a little more fully your views on the implementation of CL. As you know I have been working with your Facilitator for the past three years to support this.

1. To what extent do you feel pupils working together cooperatively to support their learning has become embedded in your school? Prompts:

- Used widely?
- Partially in some subjects?
- Not much?

2. What are your views on the use of cooperative learning in promoting effective teaching and learning?

- Prompts:
 - Supports communication skills?
 - Helps motivation/engagement of pupils?
 - Helps their learning through discussion with others?
 - Other?

3. What methods of support for teacher have been most successful to enable CL to be used?

Prompts:

- Outside training/support
- In house training
- Resources produced by the Facilitators' group
- Other

4. Do you see any barriers in developing the use of cooperative learning? Prompts:

- Other pressures/initiatives?
- Staff turnover?
- More training?
- Other?

5. Can you tell me about the future development of cooperative learning in your school?

Prompts:

- Continued commitment?
- In School Improvement plan?
- Specific plans?

Thank you for your time. I will ensure you have a copy of this transcript and key findings from the research will be shared in order to support your work in school. Wendy Jolliffe

Interviews Facilitators - Cooperative Learning in the Bransholme Networked Learning Community

Date: Interview No:

Thank you for agreeing to be interviewed. Are you also happy to have this recorded on tape in order that I may be able to get an accurate picture of your views?

The purpose of this interview is to ascertain information about the implementation of cooperative learning within the context of the Bransholme EIC/NLC. All information will be treated in confidence, and no school or person will be named. You will also have the opportunity to read a transcript in order to verify it is a true record.

A. Context and Network

- 1. How long have you been at this school?
- 2. Have you worked in a school that used CL previously?

3. Can you tell me how long you have been Cooperative Learning Facilitator at this school?

4. To what extent do you think that having a network of schools working together has helped to offset the pressures that schools are under from outside agencies and supported you to focus on self-determined initiatives such as cooperative learning? Prompts:

- Ofsted?
- Other government/National Strategies initiatives?
- Local Authorities?

B. Cooperative Learning

1. To what extent do you feel pupils working together cooperatively to support their learning has become embedded in your school? Prompts:

- Used widely?
- Partially in some subjects?
- Not much?

2. What are your views on the use of cooperative learning in promoting effective teaching and learning?

Prompts:

- Supports communication skills?
- Helps motivation/engagement of pupils?
- Helps their learning through discussion with others?
- Other?

3. What methods of support for teacher have been most successful to enable CL to be used?

Prompts:

- Outside training/support
- In house training
- Facilitators network
- Resources produced by the Facilitators' group
- Other

4. What barriers, if any do you foresee in further developing the use of cooperative learning?

Prompts:

- Other pressures/initiatives?
- Staff turnover?
- Time?
- Support from other staff?
- Other?

5. Can you tell me about the future development of cooperative learning in your school?

Prompts:

- Continued commitment?
- In School Improvement plan?
- Specific plans?

6. From my review of research into cooperative learning, 10 key factors emerge. Can you comment on each in relation to your school?

1. The level of interdependence in a group is related to the success of CL and specifically goal interdependence is particularly important, Teachers should therefore:

- Structure tasks to incorporate goal interdependence (pupils can only achieve the goal jointly)
- Include, where appropriate resource interdependence (sharing of resources in groups)
- Consider the use of group roles

2. The nature of talk or interaction is related to the level of skill in giving explanations. It is therefore necessary to provide:

- Clear teaching in structuring and giving explanations
- Provide opportunities for discussion of differing viewpoints

3. The nature of the task impacts on the success of CL and more open-ended tasks are more appropriate together with the sharing of resources. It is thus important to:

- Structure tasks appropriately
- Include open-ended tasks where possible

4. The nature and structure of a group impacts on the success including the mix of ability, gender, race and status, with the teacher needing to ensure that low-status pupils are supported and pupil diversity celebrated. Teachers should therefore consider:

- The nature of groupings
- Provide heterogeneous groups where possible

5. The need for sufficient teaching of teamwork and communication skills to pupils. Teachers should ensure:

A clear programme of explicit teaching of small group and interpersonal skills

6. The use of group rewards alone is unproven in supporting pupil motivation. Teachers should thus:

- Avoid exclusive use of group rewards
- Provide positive interdependence to promote intrinsic motivation
- Ensure team cohesion

7. The role of the teacher in managing the class for CL groups requires delegating authority to the groups with careful monitoring. Teachers therefore provide:

- Clear guidance to groups on tasks and behaviours provided
- Monitoring to ensure on task and cooperative group skills displayed

8. Beginning the use of CL with young children is beneficial. It is therefore important to:

- Begin training in group skills in the early years
- Progress from paired work and gradually develop to small group work

9. Physical layout of the classroom needs careful consideration. Thus teachers should ensure:

• Seating for group work needs to facilitate talk.

10. Provision of clear success criteria for cooperative group work. Therefore teachers need to:

• Share success criteria for cooperative group work in addition to academic tasks.

Thank you for your time. I will ensure you have a copy of this transcript and key findings from the research will be shared in order to support your work in school. Wendy Jolliffe

Pupils Focus Group Discussions

Date: Number of Pupils: Year Group:

Thank you for agreeing to be interviewed. Are you also happy to have this recorded on tape so that I can have a record of everything you say?

The purpose of this interview is to find out your view on working with a partner or a group.

- 1. (Ask each member) Can you introduce yourself: give your name and how long you have been at this school?
- 2. (Ask each member) How often do you do partner or group work in lessons?
- 3. (Open question to group) How does the teacher help you?
- 4. (Open question to group) What are the good things about working together with a partner or in a group?

- 5. (Open question to group) Is there anything that you don't like about working together with a partner or in a group?
- 6. (Ask each member) How could you make group work better?

Thank you. Is there anything else you would like to say?

Pupils Focus Group Discussions

Date: Number of Pupils: Year Group:

Thank you for agreeing to be interviewed. Are you also happy to have this recorded on tape so that I can have a record of everything you say?

The purpose of this interview is to find out your view on working with a partner or a group.

- 1. (Ask each member) Can you introduce yourself: give your name and how long you have been at this school?
- 2. (Ask each member) How often do you do partner or group work in lessons?
- 3. (Open question to group) How does the teacher help you?
- 4. (Open question to group) What are the good things about working together with a partner or in a group?
- 5. (Open question to group) Is there anything that you don't like about working together with a partner or in a group?
- 6. (Ask each member) How could you make group work better?

Thank you. Is there anything else you would like to say?

Pupils Observation Procedure

Before the lesson

- Select groups
- Be able to identify the pupils
- Have a seating plan of the classroom
- Preliminary discussion re format of lesson with teacher

During the lesson

- Notes to be made on pupils' interaction in groups during group tasks
- Observer to be present for the full lesson
- Observer to focus on two groups per lesson
- Observer to use tally system to note frequency of pupil behaviours.
- Observer to note context, activity etc.
- Observation to be ongoing throughout group work rather than at timed intervals
- Where appropriate, note pupil to pupil interaction during whole class work

After the lesson

- Feedback to the teacher related to level of cooperation and any specific issues
- Any notes on the quality of pupil talk and level of cooperation during the lesson to be written as soon as possible following the lesson

Pupils Observation Proforma

Group:

School:	Date: Observer:					
	Pupil 1	Pupil 2	Pupil 3	Pupil 4	Pupil 5	
On task						
Contributing ideas						
Participating						
Helping and supporting						
Other						

Group:

School:	Date: Observer:				
	Pupil 1	Pupil 2	Pupil 3	Pupil 4	Pupil 5
On task					
Contributing ideas					
Participating					
Helping and supporting					
Other					

Context for activity				