

**Is Cooperative Learning an Appropriate Pedagogy to
Support the Four Capacities of *Curriculum for
Excellence*?**

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Abstract

Cooperative learning is a widely researched pedagogy that has received very positive research results in the USA and Canada. In the last few years this pedagogy has been adopted by a number of schools in Scotland and by one Local Authority as a major area of investment in training. At the same time, a new curriculum, called *Curriculum for Excellence*, is being introduced in Scotland that will bring significant changes to current practice. Underpinning this new curriculum is the development of the ‘four capacities’ of successful learners, confident individuals, effective contributors and responsible citizens. To achieve the aims of *Curriculum for Excellence* there will need to be a change in how schools are organised and in the approaches to learning and teaching that take place in our classrooms. This has implications for the continuing professional development (CPD) of teachers as there is a requirement, in the new curriculum, to provide more active learning in the classroom. This thesis has developed from a personal interest in the capacity of cooperative learning to include and engage learners and, therefore, its ability to promote active learning. This thesis argues, through the literature and research data reviewed, and the evidence of the research undertaken as part of this project, that cooperative learning is an effective way to support, and therefore develop, the four capacities of *Curriculum for Excellence*.

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List of Abbreviations Used in the Text

CPD	Continuing Professional Development
HMIe	Her Majesty's Inspectorate of Education
LA1	Local Authority 1
LA2	Local Authority 2
LTS	Learning and Teaching Scotland
Ofsted	The Office for Standards in Education
SPSS	Statistical Package for the Social Subjects

Chapter 1 - Introduction

Jerome Bruner wrote “*The single most characteristic thing about human beings is that they learn*” (1967: 113). How learning takes place has been of interest to educational and psychological theorists and practitioners since the birth of their disciplines. This thesis will explore how effective a learning and teaching approach is in supporting the four capacities of the new curriculum in Scotland the *Curriculum for Excellence*. Chapter one of this thesis provides the rationale and justification for focussing this research on cooperative learning. The rest of this introduction Chapter provides a guide to the thesis.

1.1 – Rationale and Justification

The topic of this thesis is timely and has the potential to alter how learning and teaching takes place in schools. In the Chapters that follow it will become clear that cooperative learning is a well researched pedagogy that has been shown to have a positive impact in a number of areas. In Scotland the education system is in transition as we move towards a curriculum that requires more pupil engagement and interaction. This research attempts to clarify in what ways a pedagogy can support our new curriculum. Although, to some, the links between *Curriculum for Excellence* and cooperative learning may seem obvious, this is not the general case and many practitioners are unaware of this pedagogy. There has been no formal research completed in Scotland about that relationship and this thesis aims to bridge the gap. This thesis provides evidence that cooperative learning does support the four capacities of *Curriculum for Excellence*.

1.2 - Background

This thesis is the result of a period of transition and learning in my own career that began over five years ago. In 2003, after 10 years of teaching and 5 years running a department, I

became seriously disillusioned with education. This disillusionment was the result of my changing perspective on what the role of education, the learner and the teacher should be. Having now been exposed to literature on educational research and theory (Brookfield, 1995; McNiff with Whitehead, 2002; Pollard *et al*, 2002; Schon, 2006 edition), I regard this as a time when I was engaging with reflection on my practice and with education in the broader sense. Reflection had always been a part of my practice however the difference now was that my reflection was linking the theories that underpinned my practice and provided greater depth to my reflection.

Significantly, at this point in my career, I secured a two year secondment to the University of Glasgow, Faculty of Education, where I had the opportunity to engage with alternative ideas and challenge my own perceptions of what the purpose of education should be.

During the secondment I was exposed to literature on active learning pedagogies. Through reviewing relevant literature, I became aware that the purpose of education should always include learning that enables young people to participate fully and actively in society. Today we require workers who are adaptable, flexible and can work in teams and the education we provide should support this.

Schools are complex organisations and it is understandable why so many are rule governed and traditional in approach. The term traditional approach to education refers to didactic, teacher led lessons. Traditional approaches to learning and teaching and rule governed behaviour, was the personal school experience of many of today's practitioners. This has an impact on how practitioners regard and facilitate learning and teaching in the classroom. Education in schools is unique due to the demands that are constantly placed on teachers and a system that is regarded as supporting those demands is valued. Traditions in schools are strong and teachers value the confidence they experience in tried and tested methods.

Practice based expertise is respected. One of the main personal benefits of secondment was the opportunity to explore the theoretical perspectives that supported my practice and to question the benefits to learning that these could offer.

The two years at the University promoted a period of rapid personal professional development and growth. I realised quickly that I had crossed a boundary in that I had moved from teacher to teacher educator. This highlighted the fluidity of teaching as the skills and techniques of a teacher can be translated to different situations and this stimulated my own development. I was forced to challenge my own perceptions of professionalism and what that entailed (Forde *et al*: 2006). Teachers in the 21st Century are required to enhance their professionalism through continuing professional development (CPD) and I now had a role in delivering CPD to qualified teachers and teaching students whilst ensuring my own professional development. My own CPD through this period evolved to a position of teacher as researcher as I became increasingly interested in an alternative learning and teaching approach.

One of my roles in the University was as an associate tutor to students in their second year of study on the Bachelor of Education degree programme. It was while undertaking placement visits that I saw a new (to me) approach to learning and teaching in operation. I was impressed by the ease and ability of pupils to take on different 'roles' in the classroom, the quality of the interaction taking place and the collaboration in group tasks. This was not a pedagogy I was familiar with, I learned this was 'cooperative learning' and I was fortunate enough to receive training in it myself at that time. The students I had visited were on placement in a Local Authority that was offering training to all staff in this pedagogy and many students were supported in this by the classroom teacher. At this time I received one day's training in cooperative learning at the University of Glasgow and later I was able to attend full training with that Local Authority.

In cooperative learning pedagogies I could see the seeds of something I thought so desperately missing in education: here was a pedagogy that would enhance learning through engagement with peers, provide active learning strategies that could be easily implemented in the classroom, develop teamwork and enhance social skills (Johnson & Johnson, 1994; Johnson *et al*, 1990; Johnson *et al*, 1994). Albert Bandura (1963) would support teaching social skills in schools rather than hoping that these would simply develop in young people. Cooperative learning appeared to support a more rounded education than did traditional classroom practice and provide the opportunity to develop essential life skills.

Spencer Kagan (1994) would argue it takes some time to become skilled in cooperative learning pedagogies and through my experience I would agree. However, as I was assisting in the training of Geography teaching students on the Post Graduate Diploma in Education programme some basic training on cooperative learning was presented to them. On observed visits following this training the use of 'roles' in group tasks and the shared responsibility (Johnson & Johnson, 1994; Kagan, *ibid*; Slavin, 1995) of producing a final result seemed to work well. Cooperative learning strategies were putting the learner at the centre, a practice many teachers employ, but with a more direct focus. The focus shifted from what the teacher said to what the learners were engaged in. For some young people learning can be very passive when traditional learning and teaching approaches are engaged. I have however been impressed at the potential means of engaging young people in a classroom through cooperative learning strategies.

Through my research and training in cooperative learning pedagogies it became apparent that this would blend well with formative assessment techniques which are a significant feature of learning and teaching approaches in our schools (Black *et al*, 2006; Black *et al*,

2002; Black & Wiliam, 1998). Cooperative learning pedagogies and assessment for learning approaches enable young people to engage with and be more responsible for their own learning and promote active learning. I planned that on my return to the classroom I would implement both as a means of developing my practice.

My return to the classroom did not end my engagement with educational theory but was a driver in taking this further. This thesis is the result of my research into implementing cooperative learning on my return to the classroom and in assessing how effective it is in supporting the four capacities. The following chapters in this thesis show, through my review of relevant literature and my own research, that cooperative learning is very effective in supporting the four capacities of *Curriculum for Excellence*.

1.3 Chapter Introductions

1.3.1 Chapter 2

Chapter 2 of this thesis is a literature review that explores the dominant thinking in education over the last century (through the work of Skinner, Piaget, Vygotsky and Bruner) and how that has developed the learning and teaching in our classrooms.

Cooperative learning will be reviewed in relation to this as will the ideas and theory that support this pedagogy. This Chapter will then explore research literature on cooperative learning which provides evidence for the success already experienced through the use of this learning and teaching approach. Cooperative learning will then be assessed to establish if there is any evidence currently available that has shown the ways that this pedagogy has, or has not, been shown to support the four capacities of *Curriculum for Excellence*.

1.3.2 Chapter 3

Chapter 3 will explore the new curriculum in Scotland, *Curriculum for Excellence*. This can be regarded as the culmination of years of research and exploration into education and its purpose in Scotland. It will trace the history of curricular change and the recent 2002 National Debate on education where the views of all stakeholders (employers, education authorities, teachers, pupils and the general public) were taken into account. The findings from this debate and previous studies on what constitutes 'good practice' in schools has resulted in the development, by the Curriculum Review Group in 2003, of 'A *Curriculum for Excellence*' in 2004 published by the Scottish Executive (now Scottish Government).

In Chapter 3 I have traced the background to *Curriculum for Excellence* and the thinking and research that can validate its implementation. There is an explanation of what constitutes 'good practice' in learning and teaching with respect to research into this area and the input of inspectors of schools in Scotland and England. This Chapter will then explore the links between cooperative learning and what is regarded to be 'good practice' in schools.

1.3.3 Chapter 4

This section of the thesis aims to highlight the rationale for the choice of research methodologies used in this study. This thesis will contribute to our knowledge on cooperative learning using an interpretive paradigm and explore individual perceptions of how effective this pedagogy can be. In addition, due to my role as classroom teacher, this thesis has the benefit of action research principles (McNiff, 2002) embedded within it. As a researcher utilising an interpretive paradigm (Cohen *et al*, 2004) I am able to explore in depth the impact cooperative learning has been found to have, gauge the responses from

participants in this research and analyse the findings with traditional methodologies. I am fortunate as this research has been completed from two perspectives; that of the traditional objective researcher, and, from the fully involved participant responsible for implementing and analysing the findings. This provides a unique perspective although it also presents some ideological and methodological challenges.

This Chapter outlines the data gathering techniques used and the rationale for this. Here I have drawn out the strengths and weaknesses inherent in different research paradigms and the complexity of relationships I experienced as a practitioner undertaking research. I provide an explanation for my chosen research paradigm in this study.

1.3.4 Chapter 5

Chapter 5 of this thesis is the analysis of my own research in this project. This Chapter explores the findings from my research and the implications of this for learning and teaching. The data presented here has been gathered from two Local Authorities in Scotland and the rationale for this is explained. The evidence from the research data focuses on the four key research questions identified below and the results from participants are blended in the analysis to enable the contrasting perceptions of participant groups to be explored. Data has been gathered through questionnaires, interviews and tally sheets and each of these is discussed and the findings interpreted. The quantitative statistics gathered have been analysed using the Statistical Package for the Social Subjects (SPSS) and all data provided from this is represented. The key research questions in this thesis are presented in Table 1 below.

Table 1 – Research questions

What are the perceptions of teachers and pupils in relation to the ability of cooperative learning strategies to:
• develop confident individuals?
• develop responsible citizens?
• develop effective contributors?
• develop successful learners?

1.3.5 Chapter 6

In Chapter 6 overall conclusions of this thesis are presented. The conclusions presented summarise the findings from all chapters and present a clear understanding that cooperative learning is a highly effective pedagogy that is well researched and grounded in theory. Some of the challenges of the research project are summarised through the dual position of teacher and researcher. The impact this pedagogy can have is clarified and there is an indication of what this might mean for teachers in relation to professional development, and for education in the wider sense. Suggestions for what may need to be done next in relation to cooperative learning are offered.

The final chapter presents conclusions based on the research undertaken and evidence gained that, in this instance, cooperative learning is a very effectively pedagogy that fully supports the four capacities of *Curriculum for Excellence*.

Chapter 2 Approaches to Pedagogy

2.1 Background

This literature review will highlight the key developments in thinking about learning and education over the 20th Century and 21st Century and establish where cooperative learning fits in relation to these developments. It will review relevant literature on cooperative learning to establish what evidence there is that cooperative learning can support the four capacities of *Curriculum for Excellence*.

2.1.1 Dominant influences in the 20th and 21st centuries

Educational research has developed as a dominant field of study since early in the 20th century. As the scope and access of education has widened so has interest in how learning occurs and what pedagogies can be utilised in a classroom to assist that. In essence, as understanding of ‘how people learn’ has developed so have the pedagogies employed in education. There is growing evidence that people learn in different ways and some of these ways are identified in the text below with an explanation of what that means for learning and teaching. This literature review will now explore these different theories about how we learn.

The dominant teaching approach in education from the turn of the 20th Century was behaviourist. Behaviourist approaches to learning and teaching involve the transmission model where a teacher provides relevant subject matter to learners. To ensure learners engage with this learning, behaviourist approaches advocate the use of rewards for desired responses and punishments for others. This uses an approach where learners will be trained to conform to required behaviours or outcomes. When a learner has experienced a change in behaviour it is assumed they have learned something and should be rewarded for

it. In this approach skills or knowledge can be built on as learners respond to the desire for rewards. The assumption is that all learners will respond to positive reinforcement (TES, 2008). Schools support the use of rewards and punishments as a means of assisting organisation and to motivate young people. Behaviourist approaches to learning have come under criticism for the limitations of some of the methods used, however it should be noted that transmission approaches to learning and teaching have provided a means of transmitting learning to large numbers of children.

Burrhus Skinner (1974) attempts to challenge some of the negative press or misunderstanding in relation to behaviourism and argues there is validity and effectiveness in behaviourist methods. Indeed he states that “*Rule-following behaviour is said to be the veneer of civilization...*” (1974: 126). It could be argued that Scotland’s education system is supported by such rule following where reinforcement of behaviour that is desired in the learner and learning behaviours are promoted. Our early education systems used this style of teaching, which included rote learning approaches, as a dominant feature of classrooms. For some pupils and some learning this worked well, however, the role of the learner here is very passive and the teacher is in the role of the transmitter of education and expert. The implication of this is that learners have no responsibility for their own learning and the opportunities for creativity and exploration are reduced.

Today the role of the teacher may have moved on from simply transmitting information but there are still aspects of this. The teacher’s role has evolved to one where teachers are expected to engage with pupils in different ways and aim to support learning. In the classroom and the wider school there are attempts to engage with pupils in this way, however, the focus on rewards in schools suggests there is still a strongly held belief that behaviourist approaches work. Teachers can be reluctant to challenge this despite evidence that other approaches to learning can be effective (Johnston, 1993; Johnson &

Johnson, 1994). The behaviour and achievement of some pupils suggests they do not respond to the learning and teaching approaches employed nor to the organisation of the school. It is interesting and worrying that the school system has changed so little over a period of time, even in the light of research into theories and evidence that alternative approaches to school organisation can work (Sergiovanni, 1994).

Today we talk of citizenship, pupil voice and learning communities but in reality schools are very ordered systems that are not sufficiently adaptive, enabling them to relate to, nor engage with these ideas for the majority. When behaviourist approaches are a feature of a school the opportunity for young people to fully participate is limited. Schools are providing aspects of community but true community would involve learners being responsible for their learning in conjunction with teachers, guardians and with the organisation of the school. An alternative organisational approach such as that suggested by Sergiovanni (1994) where learners are engaged in this way would provide the space for pupils to be fully responsible within the system.

The behaviourist approach is still dominant today, particularly in secondary school, where there remains a strong emphasis on didactic teaching (Pollard, 2002). Didactic teaching is when the teacher transmits information to the whole class with the intention that learners retain the learning. Evidence from Howard Gardner (1993) makes a significant challenge to the transmission model of teaching. Gardner (ibid) shows that individuals learn in very different ways and only a few people can learn well in this way. This means that if transmission approaches are being used in a classroom many young people are not learning as they should. To question why this is raises issues about teacher CPD, to the challenges of delivering today's curriculum on time and the pressure over examination results.

Many teachers feel a sense of security in knowing that they have 'taught' a particular element of a course, there is a sense of spoon feeding learners so that they are ready for the big day of the examination. This is supported by behaviourist approaches to learning. As already noted Gardner (ibid) argues that very few people learn in this way. Similarly, this approach to learning and teaching does not assist in the development of the four capacities of *Curriculum for Excellence*.

One of the concerns of classroom teacher is that alternative teaching methods may not deliver hoped for exam results. Teachers are subjected to statistical analysis based on the performance of individual pupils and a competitive approach is instilled not only in individual classrooms but with teacher against teacher, school against school and authority against authority. The statistics do not take many relevant variables into account.

Despite being aware of the limitations of these statistics, they cause anxiety, and it is no surprise that teachers may think their tried and trusted methods of instructions should not be challenged or tampered with. As such, many teachers will predominantly use the traditional lecture style lesson to ensure their courses are covered. Although didactic teaching enables a lot of information to be transmitted quickly it does not take any note of the benefit and learning that can take place through social interaction and individual motivation.

Behaviourist approaches to learning and teaching identify the teacher as the 'expert' in the classroom. Although pupils can be relatively passive within this James Hartley (1998), cited in Infed, states that "*Learning is better when the learner is active rather than passive*" suggesting learners gain from this. The degree of activity that traditional approaches can provide is low. Teachers may be reluctant to change due to concerns already noted and may enjoy their traditional role in a class. The idea of passing some of

this responsibility back to learners may cause concern that required standards are not going to be met; this would involve a change in classroom dynamics that many teachers are not yet convinced to take.

M Lee Manning (1991) stresses that active learning practices would require a change in role for a teacher and for many that may be unsettling. If rote learning is required or some detailed learning this may be appropriate but the teacher needs to be cautious of this as Andrew Pollard (2002: 138) states, “*The responsibility of teachers is to interact with children so that they actually learn not simply to expose them to subject matter and drill.*” The limitations inherent within behaviourist approaches to learning have been challenged and developed through research. The role of learner and teacher can also be developed as a result of this.

Educational theory has been enhanced by the work of Jean Piaget and Lev Vygotsky. The work of both has helped to shift thinking about learning, the teacher, the role of learning and the way that learning takes place. This shift is from a transmission model to an active model. Some practitioners are unconvinced of this however, and there may be various reasons for this including the challenge that active learning can present. David Galloway *et al* (1998) identify the fact that interactive learning is more difficult for the teacher to implement due to the development of materials, the complex organisation required and the alternative classroom management skills that are necessary. On a more positive note, however, they state that interactive learning may give teachers a greater sense of job satisfaction.

Piaget and Vygotsky were born in the same year (1896) and were psychologists focussing on child development. Piaget was a dominant thinker in relation to constructivist approaches to learning. Piaget’s theory was that individuals learn through the interaction

they have with the experiences around them, and with this they will develop more “...*complex cognitive structures*” (Pollard, *ibid*). Piaget was particularly interested in child development and he charted the progress of the child through four key stages in cognitive growth. What became clear from Piaget’s theory was that the interaction with surroundings was paramount and that only in the fourth stage of development was abstract thinking possible. Therefore the strict, didactic approach of behaviourism was challenged as there was a notion that children should engage with their learning and experiences to facilitate their growth. This required teachers to present opportunities within a classroom for learners to experience varied environments.

Piaget was clear that the function of education was to ensure understanding of what was being learnt and he stressed this could be achieved through “...*understanding and inventing...*” (1969: 27). This involves the learner being involved actively in the learning process. Piaget states that a lot of the education we provide displays “... *an almost total lack of interest in developing the experimental attitude of mind in our students*” (Piaget, *ibid*: 37). This suggests that our classroom practices do not help to develop a questioning and creative mind.

The changes in the curriculum today suggest a need to nurture the creative element in young people and the didactic approaches, that had been a feature of our education system, serve to prohibit that. Piaget was advocating active learning to aid the learning process and this was taken on board, particularly at the primary stage, in the 1960s and 1970s (Pollard: *ibid*). The reasons why they were not taken on to such a level in the upper primary, and (indeed active learning practices can be limited) in the secondary sector, are, as already noted partly due to the demands and constraints of the curriculum. Piaget would also argue, however, that “... *the active methods are more difficult to employ than our current receptive methods*” (Piaget, 1969: 69).

Although Piaget has clearly deepened our understanding of how learning takes place criticisms are levelled against him. These are based on the stages he has identified for learning, as some would argue, this may limit learners as it is possible to pass through the stages at different speeds with some young children progressing through the stages more rapidly than others (Donaldson and Tizard & Hughes, in Pollard, 2002). A further criticism is presented by Walkerdine (in Pollard, 2002) who argues that the social context of learning is underestimated in Piaget's theories. Piaget has had an enormous impact on our understanding of how young people learn by highlighting the importance of play and the engagement that comes with that. What becomes apparent is that we learn in different ways and limiting ourselves to one approach limits learning. It seems naïve to embrace only one approach in education as there is evidence that one theory of learning can support and add to another.

Michael Beveridge (1997) argues that education can embrace the ideas of Piaget and Vygotsky to assist learning for all in schools and that no division is necessary. He states that the division between their theories has been simplified and the understanding Piaget gives to cognitive development can be complementary to the theory of Vygotsky.

Vygotsky's theories of education, although written in the early part of the 20th Century are relevant today. Vygotsky argued that social interaction in learning is very important and that a more able individual can help a learner to move onto the next stage. This can happen in a variety of ways and Beveridge (1997) cites an example of using a new term in a science class that can be later used in everyday language. Managing the use of the term in the science classroom would be regarded as "... *creating a zone of proximal development for the child*" (ibid: 30). This term is key to Vygotsky's work where the interaction between adult and child, child and child or any mechanism that enables support

or 'scaffolding' for the learner will help them move to the next stage of understanding (Pollard: 2002). The interaction that takes place is the zone of proximal development (ZPD). The ZPD is identified by Marianne Hedegaard (1992) as the difference between the level that a child can function at independently and the level they can perform at with adult assistance. Here interaction and support in learning are implicit.

Current practice in schools today highlights the positive aspects of active learning. The involvement and engagement of pupils in their own learning is an area that cooperative learning can assist with. One of the different dimensions to this is the impact that peer assistance can have. Johnathan Tudge (1990) focuses attention on the interaction of peer work and collaboration and gives evidence that pupils' learning is enhanced through working with a more able peer. Some have questioned whether a more able peer can also gain from such an interaction and this will be addressed in the review of cooperative learning literature that follows. There is evidence that all can gain from cooperative learning.

Vygotsky's ideas of social cognition are very relevant in today's classrooms as they require social interaction to assist learning and the learner is at the centre of this approach while supported by peers. With the learner at the centre, the role of the teacher alters to one that assists and supports active learning rather than transmitting ideas as is the case with didactic teaching. This is relevant to the philosophy of cooperative learning as this pedagogy aims to assist learning through working with and being supported by peers.

Evidence from research undertaken as part of this thesis supports this. Pupils said (Chapter 5) that working with peers was positive as it allowed them to engage using their own language and shared understanding. This reflects the impact that shared cultural understanding can have on learning. We all learn within our cultural norms and whether

that is through scaffolding by a peer or adult there needs to be some shared understanding of terms and language used. Bruner (1971) would argue that culture plays an important role in educational and cognitive development. Indeed Gerard Duveen (1997) talks about an ‘apprenticeship’ model that “...*assumes a community of interest between novice and expert ...*” (ibid: 81) and states that one reason for disaffection in learning can be due to this being missing between learner and teacher. Bruner (1971) argues that a youth culture that is removed from the mainstream, means overtaking skills can be difficult as there is no sense of shared understanding and “... *the process of education becomes, in fact, unrewarding*” (ibid: 125). Some pupils have identified the rewards of working with peers. This is an important reason for education to help build relationships in schools and establish a community of learners.

Bruner (1996: 84) also states the importance of creating a “...*community of learners.*” This community of learners treats pupils in a respectful way where they are given a role to play and take responsibility for their learning. He argues that human learning is best when it is, “... *participatory, proactive, communal, collaborative...*” (ibid: 84). This could be a description of the activities that take place in cooperative learning classrooms. One point that is not addressed however is how to engage pupils who are culturally removed from the school system and this is an area that requires broader analysis than is possible here. It is possible that changing the culture in schools would have a direct impact on such pupils and *Curriculum for Excellence* may facilitate this change. Current practice in our schools aims to include all but some of the pedagogical approaches in the classroom do not address the needs of all learners. The use of different methods to help with learning styles of pupils is promoted but is not necessarily taken far enough. The role of the teacher has evolved to one where the teacher must attend to the learning needs of pupils. The focus in education has shifted from one where the teacher was at the centre of the educational process to one where the learner is at the centre.

2.1.2 Multiple Intelligences

Howard Gardner (1993) identified intelligence as coming in many forms. Individual have different abilities and intelligences and learn in different ways. Some learners function well with visual or auditory stimulus for example and others engage with music, emotions and action. The combinations of how we learn are broad. This is significant in education as it challenges the traditional transmission model of teaching already discussed. Gardener (1993) has shown that for learning to be effective for all learners many different approaches to learning and teaching must be engaged. As a means of addressing learning needs, schools can turn to the work of Gardner and his theory of multiple intelligences. Gardner's theory suggests learning and teaching approaches in classrooms must develop to provide an opportunity for all pupils' needs to be addressed. The notion that we have strengths and capacities may not be supported or engaged through traditional classroom practice suggests a need for enhanced learning and teaching. Gardner does not advocate a multiple intelligence school but suggests that if "... *we take these differences seriously, each person may be able to develop his or her intellectual and social potential much more fully*" (Gardner, 1999: 92). Schools should provide the opportunity for all learners to thrive.

Gardner's theories on intelligence emanate from his background in cognitive developmental psychology (1999) and his understanding that people excel in different areas. He has refined his original definition of multiple intelligences to embrace the notion that what we have is the potential to do, achieve or understand the world in particular ways. Gardner (ibid: 34) states:

"...intelligences are not things that can be counted. Instead, they are potentials- presumably neural ones- that will or will not be activated, depending upon the values of a particular culture, the opportunities available in that culture, and the

personal decisions made by individuals and/or their families, schoolteachers and others”.

It rationally follows from here that we all have the potential to excel, learn and develop in particular ways and often the limits we experience are as a result of our culture, home, school and peer environment. If the accepted norm is for a particular form of testing, rewarding only certain learning styles or forms of intelligence those who do not conform to the norm will suffer. Whether that is through failed grades, employment issues or lack of self fulfilment is again subject to the particular limitations and potentials we all have. It is a fact that most of us are an amalgam of different potentials and intelligences. Although we may be aware of areas in which we feel more comfortable or excel at, there may be others that we can still develop. Our education system in Scotland is embracing new ideas and reflecting on how we may engage learners more. Traditional approaches to learning and teaching have their value but the integration of alternative pedagogies in the classroom will enhance learning for all. Engaging learners is at the heart of *Curriculum for Excellence*.

2.1.3 Intrinsic and Extrinsic Motivation

A key to learning in any aspect of life is the motivation one experiences to do so. In classrooms today many means of engaging learners in activities take place and there is often a focus on extrinsic rewards to do this. Extrinsic rewards are thought to act as a motivating force in many aspects of life from athletics, to musical skill and even to the job that we do. In schools extrinsic rewards come in the shape of awards, merits, grading systems, trips, stamps and stickers. In opposition to this there are arguments that extrinsic rewards are not beneficial to learning (McLean; 2003). Indeed there is a growing awareness of the limitations that rewards can provide through stimulating a “... *culture of indulgence*” (ibid: 4) that does not motivate but actually de-motivates.

Bruner (1967) argues against extrinsic motivation saying it does not help the learning process over the longer term. A similar view is held by Albert Bandura who states that “... *incentive practices ... diminish inherent interest in activities*” (1986: 240). Incentives and awards breed competition among individuals and groups and this can lead to unhealthy attitudes to our neighbours, colleagues and to other pupils in the classroom. Alfie Kohn (1992) argues that the competitive nature of our classrooms has a negative impact on motivation. Alan McLean (2003) adds to this by acknowledging that the will to ‘beat’ another can overtake the motivation to learn for many and the fun is quickly removed from an activity.

Motivation to complete an activity may be based around external factors but when motivation is intrinsic to the individual there is a greater sense of fulfilment and reward from activities undertaken. Bandura (1986) argues that intrinsic motivation is difficult to quantify, however, he does state that “... *the most valued rewards ... are in the satisfaction derived from fulfilling personal standards...*” (1986: 231). Intrinsic rewards are regarded as the best driver for individuals and these do not require any form of external reward but a sense within the individual that something is worthwhile.

Kohn (1992, 1999) argues that rewards can indeed limit the quality and effort that an individual puts into any activity. Kohn (1992:130) is able to argue that competition stifles creativity. This can happen in classrooms where learners may achieve ‘just enough’. Pupils are limited by competition or afraid of truly experimenting with their learning, and constrained by the social networks and hierarchies that can prevail in classrooms.

Intrinsic motivation is essential to truly embrace an activity. The young people in our classrooms need to feel motivated when completing any activity. Bandura (1986) states that rewards become devalued by pupils and thus meaningless. This means they are of

limited benefit in motivating learners. Kohn stresses that he would tell teachers “... *they shouldn't care how motivated their students are.... What matters is not how motivated someone is, but how someone is motivated*” (1999: 257). Kohn shows from various scientific studies on the impact of rewards on motivation, that rewards are negative. When someone is offered incentives to do something the person is shown to lose interest in it (Kohn, 1999). The focus in our classrooms needs to be on motivating young people rather than rewarding them.

There are issues of inclusion in classrooms because of rewards and the competitive situations these can create. The demands of competition in classrooms mean that only some can win and this can serve to reduce the motivation of a number of pupils (Kohn, 1992). To engage learners the focus should be on enabling intrinsic rewards to take over. This will involve giving young people more responsibility for their learning and a more active approach in learning and teaching activities. The review that follows on cooperative learning will hopefully address some of the issues noted above.

2.2 Background – Cooperative Learning

Cooperative learning is a learning methodology that has stimulated a great deal of interest in the United States and Canada over the past 20-30 years, although interest in active, cooperative learning predates this (Dewey, 1991). In both locations a great deal of research has taken place into cooperative learning and the aim here is to review this research. Some of the research literature dates from the 1980s and 1990s and this is relevant: this particular research reviewed the early introduction of cooperative learning strategies in the United States and Canada; this approximates to the current participation and awareness levels in this country which in many areas is in its infancy. Research into cooperative learning has been less extensive and limited in the United Kingdom but relevant recent research is part of this literature review.

The possible benefits arising from cooperative learning are now being explored more broadly in the United Kingdom. As more teachers and researchers engage with this pedagogy, the information and evidence on the possible impact of cooperative learning should also increase and hopefully more detailed and extensive studies can be completed. The possible reason for the lack of uptake of cooperative learning methodologies could be due to the training input required and length of time it takes to become skilled in its implementation; it is also due to teachers' perceptions of the pupils they engage with and the possible limitations that are regarded as being evident in an exam driven education system. For teachers there is often a dichotomy between what is perceived as good practice and what teachers feel is required to 'get pupils through exams'.

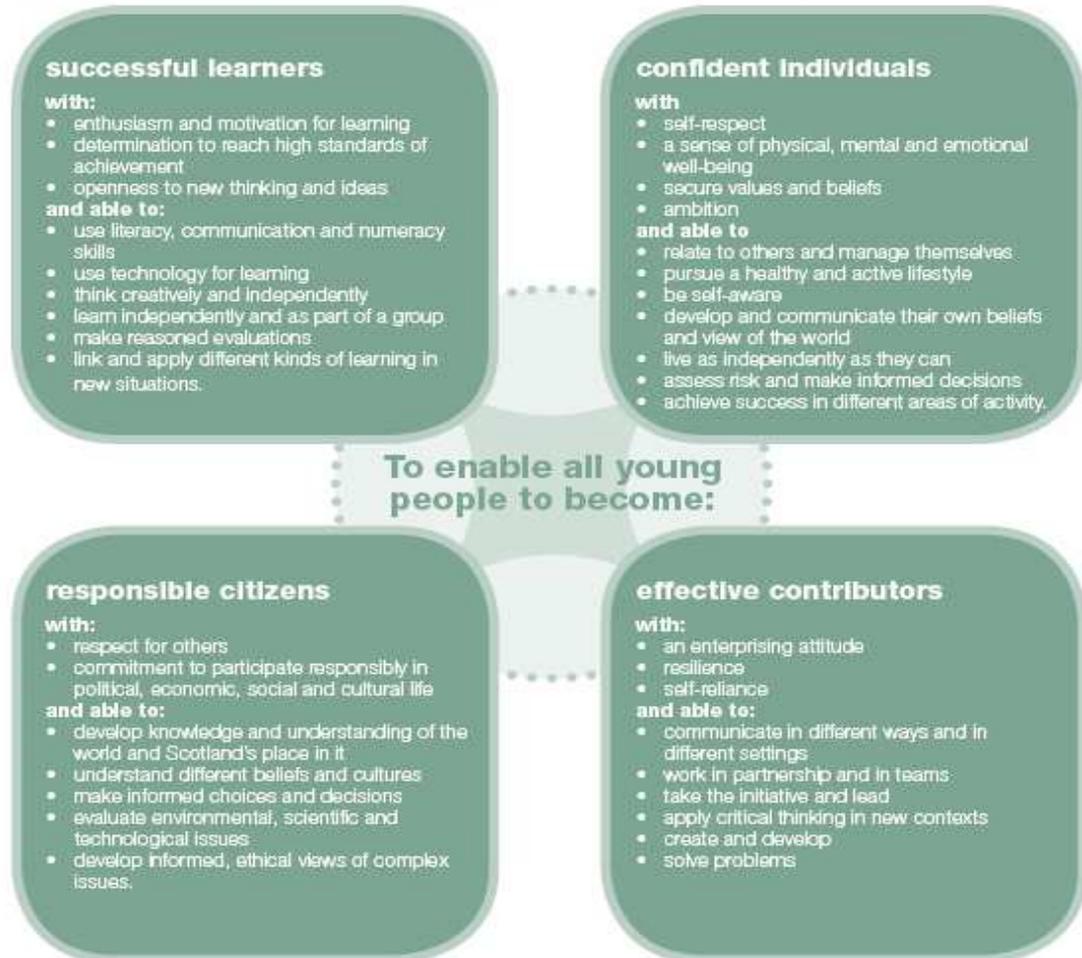
2.3 Cooperative Learning: Review of Literature and Research

In the United States and Canada there has been extensive research into cooperative learning that has attempted to establish how effective it is in promoting achievement, improving exam results, establishing positive relationships between different groups of young people including different cultural groups, levels of ability and indeed in integrating sections of society who have previously been challenged in mainstream education. Stuart Yager (1986) looks at the benefits and limitations of different theoretical perspectives of cooperative learning. A great deal of this research is relevant to this particular thesis as it addresses some of the central themes that are a feature of *Curriculum for Excellence* where the aim is to produce students who are successful learners, effective contributors, responsible citizens and confident individuals. The question this literature review hopes to establish is in what ways the current available research can show whether cooperative learning can assist in the development of these four capacities.

For the purposes of this literature review and this research it is important to be clear about what is meant by the four capacities of *Curriculum for Excellence*. The four capacities are available for review as shown below:

Table 2 – Purposes of the 3-18 Curriculum

Purposes of the curriculum 3-18



Source – *Curriculum for Excellence* website (online)

As can be seen from the diagram there is a degree of overlap in the four capacities where the ideas and skills from one capacity blend into another. For example successful learners should be able to ‘learn independently and as part of a group’, confident individuals should be able to ‘live as independently as they can’ and effective contributors should be able to ‘work in partnership and in teams’. All of these are essential life skills and the hope is that the new curriculum will assist in the development of these. With the knowledge that there are areas of overlap within the four capacities, it is important to provide some sort of

definition of each capacity and what will be looked for in the literature review. The aim is further to give a broad overview of the findings of cooperative learning research and to establish what further research, if any, it is necessary to undertake in this area.

To clarify whether the cooperative learning literature is able to identify areas where pupils have been shown to be successful learners one would expect to find evidence of achievement and enthusiasm for learning. Confident individuals should have self-respect, a sense of well being and feel secure in their beliefs. Responsible citizens should be able to show respect for others and have a commitment to participate responsibly; effective contributors should be able to communicate in different ways and in different settings and be able to show resilience and keep with it. There are, obviously, many other foci in each of the capacities but again through overlap it is hoped that the essential themes are covered here. If other ideas are encapsulated in the research this will become evident.

In general terms there has been a significant amount of research conducted into cooperative learning. There is research that focuses on the different methods used in cooperative learning (Gillies, 2007; Hauserman, 1991; Jolliffe, 2007; Manning, 1991) and some that will directly support a particular approach to cooperative learning (Johnson *et al*, 1990; Kagan, 1994; Slavin, 1995). Indeed there is a degree of controversy in the different philosophies of David Johnson *et al* and Robert Slavin. Slavin (1984) insists the inclusion of incentives is essential for cooperative learning to be effective and ensure achievement whereas Johnson *et al* (1990) would disagree. Competition and rewards are not a predominant feature of other theoretical approaches to cooperative learning (Johnson *et al*, 1994) where competition is at times regarded as divisive and unhelpful to progress and achievement, indeed they argue “*When students are required to **compete** with each other for grades, they work against each other to achieve a goal that only one or a few students can attain*” (Johnson *et al*, 1990: 3). Slavin (1999) would argue for the use of

average scores for group tasks therefore making all pupils in the group dependant on one another, whereas Johnson *et al* (1990) identify five essential components of cooperative learning which are:

- Positive interdependence
- Face to face interaction
- Individual accountability
- Social skills
- Group processing

It is argued that when each of these is in place pupils will work together towards a shared goal and increase achievement, whereas Slavin would argue that achievement is only improved if there is a reward motivating the group to do so (Johnson & Johnson, 1990).

The debate regarding whether it is beneficial to use competition in a classroom is an important one as so many of our classrooms today are driven by exam results, statistics and league tables. At all times pupils and teachers are aware that there is a hierarchy in education and that only a few will be noted as ‘top’ of the class; we celebrate this but at the expense of so many others.

The key concept of cooperative learning is that, in a classroom, young people will work together. This sends a cautionary note to many involved in education as traditional ‘working together’ or ‘group work’ has been viewed as chaotic and ineffective.

Cooperative learning is not a return to the older style of group work when there could be situations where one pupil would complete a task and the rest of the group are carried along with it, claiming credit for work they did not produce, nor is it an opportunity to divide and conquer a task where every pupil will complete some small section of the work.

Johnson *et al* (1990) discuss the issues around traditional groups and the many hazards and limitations found within them. In cooperative learning the aim is to allow all pupils to enhance their learning through working together and to assist one another in their personal

learning. The idea that ‘we’ becomes important in the classroom rather than ‘me’ is an important feature of cooperative learning classrooms. Learners focus on a joint target rather than competing to be number one. As a team they will “*..sink or swim together...*” (Johnson & Johnson, 1994: 81) and thus a greater regard is given to peers. Johnson *et al* (1990) stress that the difference between the activities in traditional style classrooms and the world young people will encounter beyond school is very significant. Others would agree that learning to work together is a very important element of managing a career and life after school (Johnson *et al*,1990; Gillies, 2007; Kagan,1994; Kohn,1992; Slavin, 1995). Indeed Johnson *et al* (1990b:17) state:

“Much of what students learn in school is worthless in the real world. Schools teach that performing tasks means largely working by oneself, helping and assisting others is cheating, technical competencies are the other thing that matters, attendance and punctuality are secondary to test scores, motivation is up to the teacher, success depends on performance on individual tests, and promotions are received no matter how little one works. In the real world of work, things are altogether different.”

It is evident from this, and the various authors noted above who make similar points, that young people are given the opportunity to be better prepared for our rapidly changing world and the challenges and complexities that this will bring to them. The aims of the *Curriculum for Excellence* hope to address this.

The idea that competition can have a negative effect on many individuals is growing and this raises the case for challenging the competitive nature of our post-industrial societies. Kohn (1992: 1) discusses these issues at length and stresses that competition “*... requires that some people fail in order that others can succeed*”. Johnson *et al* (1990: 3) argue that the whole process of competition puts learners in negative relationships where pupils “*...recognise their negatively linked fate (the more you gain, the less for me; the more I gain, the less for you)...*”.

This does not breed a healthy learning environment but one, in which, each student is pitted against the other. The aim of cooperative learning is that all pupils should gain in

their learning rather than only the ones who have a chance of achieving a positive outcome at the start. Kohn (1992) identifies only those who have a chance of winning – in any area – as being willing to take part. In school situations only those in the class with a chance of ‘winning’ will take part and ‘the rest’ (basically the majority) may sit back and put in limited effort. Competition therefore does not motivate all pupils and people to achieve and succeed to their full potential. Cooperative learning aims to address this by ensuring that all learners are included and able to progress and achieve. The theoretical argument as to whether there should be any competition or external reward system is ongoing.

External competition provides an extrinsic reward that only some can achieve whereas a greater sense of participation, awareness, building of knowledge and the freedom to interact has the potential to enhance a young person’s learning experience. Indeed, Johnson *et al* (1990: 5) would argue, “...*cooperative learning should be used when we want students to learn more, like school better, like each other better, like themselves better and learn more effective social skills.*”

With a view to further exploring the impact that cooperative learning activities can have this literature review will now assess whether using cooperative learning methodologies can support the four capacities of the new Scottish Curriculum based on existing published research.

2.4 Successful Learners

Successful learners are classified above as individuals who, among other things, have shown achievement, motivation and enthusiasm for learning. In completing this literature review, there is a wealth of evidence that supports this point; the challenge was to locate literature that did not support the notion that cooperative learning could produce successful learners. There is, however, some research that suggests all students do not benefit to the same degree and this includes the work of Hannah Shacker. Shacker (2003) reviews a number of studies into cooperative learning and reports on the evidence of achievement

between low, middle and high achieving students following cooperative learning lessons. Shacker (2003) is able to show an increase in achievement at all levels; the biggest increases, however, were found with low and middle achieving pupils. Shacker suggests that the reason for the more able not achieving an increase comparable with lower and middle ability groups could be due to their previous success with traditional systems, preference for this, and wish to maintain the status quo.

Douglas Wiegmann (1992) looked at the ways that may be more successful for learners of different abilities in raising attainment and concluded that the lower achievers were successful when in the role of the teacher – one they traditionally would not be given whereas the high achievers learned more in the role of a learner – again not the positional norm for them. The evidence here, however, did show improvements for all pupils included.

There are concerns among some researchers that cooperative learning strategies do not fully address the needs of high achievers and the more able. Thomas Logan's (1986) research used an ethnographic approach and he said that pupils themselves decided on a hierarchy of what individuals could and could not do and even used terms such as 'slow' when describing one another. He stressed that all pupils did not participate to the same degree but arguably this could be altered by effective management of lessons and appropriate group organising and role allocation. Logan does state that the situation could be assisted by clear instruction by teachers themselves, which in some ways suggests the issue is not so much with cooperative learning but with how it is implemented and that the teaching of social skills would be advantageous. Slavin and Hill, cited in Barbara Gabbert *et al* (1986), say the more able do not benefit unless appropriately challenged, again arguing for the use of incentives to promote achievement.

There is anecdotal evidence from one high achiever that they had been 'held back' by cooperative activities (Panitz: 2000). This self starter and independent learner believed

their progress was slowed and stifled by the ability of others. There is evidence in this research of pupils perceiving the behaviour of others as limiting their progress, not ability, and this is discussed in Chapter 5. Independent learning is a valuable skill that we should all be able to embrace and, indeed, even prefer; but this does not imply that learning together is second to this. Liz Seagreaves *et al* (2007) on evaluating the implementation of cooperative learning strategies in a Local Authority in Scotland have a fairly modest assessment of improvements in academic achievement. The Local Authority in question, however, views its strategy as a long term solution and not an overnight response to raising standards and achievement.

Although some research highlights different degrees of improvement through cooperative learning I could find no indication that any pupil lost through this. This may be an area that will benefit from further detailed and large scale study in Scotland as greater use of cooperative learning is made in our schools. For the purposes of this review, however, there is overwhelming evidence from positivist and interpretive paradigms that cooperative learning methodologies have shown benefits to pupils of all abilities.

Rigorous studies by Johnson (1993), Slavin (1984) and Yager (1986) all focussed on the impact that cooperative learning could have in raising achievement. Slavin (1984) focussed on the impact of achievement with and without rewards and concludes that cooperative learning does improve achievement but only with awards tied in. This is still controversial and many would argue with this stating that group processing is much more important for higher achievement (Yager, 1986).

Yager would also argue from this research that the use of heterogeneous groups, as suggested through the Johnson and Johnson model (1994), is the most effective way to raise attainment for all. In Scottish schools setting takes place and this prohibits a heterogeneous population in a classroom. The process of setting does not go unnoticed by pupils however and although teachers may perceive this as an 'easier' option to manage,

and would argue its benefits to pupils, it may not be the best for all. Johnson & Johnson (1994) have shown that lower and middle ability students benefit more from being in mixed groupings.

Johnson & Johnson (1993) advocate the use of heterogeneous groups reflecting the different abilities, gender and ethnic mix if appropriate. This study reviewed the impact on 34 high achieving pupils, some of whom were exposed to cooperative learning and some to traditional teaching methods. The results showed that the high achievers who had been exposed to cooperative learning achieved higher results with recall and a higher level overall. Some of the additional benefits included improved self esteem with this group. This could also be linked to their higher achievement but also through the improved interaction they had with their peers.

Arthur Clark's study (1998) compares the results of pupils participating in cooperative learning with those in traditional settings and shows academic achievement is improved.

Angela O'Donnell (1993) shows how listening skills and uptake of information from lectures can be enhanced through discussion in cooperative groups through cooperative review where students were seen to show greater understanding of the lecture content.

Again, this highlights the fact that students can become switched off during some activities and this forces attention and engagement. Gabbert *et al* (1986) investigated the notion that groups can limit creativity and challenged the evidence from Slavin and Hill (*ibid*) that higher ability students do not benefit. Indeed they found that overall high achievers were not hurt by cooperative learning activities but that their responses may have been improved by it.

Robyn Gillies (2000) supports the notion that pupils' responses can be enhanced by cooperative learning through research results that showed cooperative learning in pupils provided more cooperative behaviour, more explanations, used higher cognitive strategies such as "*...providing specific concrete facts and reasons...*" and obtained higher scores

than their untrained peers (2000: 98). Cal Hauserman (1992) was able to show that students involved in cooperative learning were able to achieve superior achievement in higher order thinking which is backed up by the work of Gillies (2000). Neber *et al* (2001) confirm this with an analysis of 12 studies, and although they say some of the studies were not as rigorous as possible, there was evidence that cooperative learning could enhance the instruction given to gifted and high achieving students.

Spencer Kagan (1994) has offered an excellent resource for teachers to assist in the implementation of some cooperative learning strategies and his evidence for raising achievement is prevalent throughout it. Each of the studies noted, although some employing alternative theoretical approaches, provides evidence that cooperative learning helps to produce successful learners through raised achievement. In relation to enthusiasm for learning achievement is a reflection of this: as pupils engage more actively in their learning and support one another, the potential to increase their own personal success grows.

2.5 Confident Individuals

In all the literature reviewed I could find no evidence that cooperative learning had a negative impact on confidence or self esteem. This is probably due to the supportive nature of cooperative learning activities that are specifically designed to assist in the confidence of individuals. Indeed the social skills taught through the Johnson & Johnson (1994, 1990) approach may be of benefit in this. It should be stressed that this is in relation to cooperative learning activities and not to traditional group work when pupils could feel overwhelmed, undervalued, socially threatened and unsupported.

In the new curriculum in Scotland, which aims to help produce confident individuals, there should be some relief that there are ways of operating in a classroom that will promote this and build confidence in learners. Johnson & Johnson (1994) and Johnson *et al* (1990) stress that the whole approach of working together and learning together should improve

confidence. Jim Craigen & Chris Ward (2006) highlight the fact that the actual activity of working as a team helps to build confidence as individuals are answering for a group rather than themselves; they thus have support and are not exposed as they could be when asked individually by a teacher for an answer. Whether every young person will feel secure in their beliefs, a sense of well being and self respect is yet to be proven, however there has been positive research evidence that shows pupils have gained in confidence and with that one would hope self respect and belief will be enhanced. Although all the research did not necessarily aim to assess the confidence of the individuals involved, there is clear evidence that this is the case.

Clark (1988) was very positive in relation to individual confidence and identified pupil self worth as improving along with a sense of equality in the classroom. Johnson (1993) identified cooperative learning activities as having raised self esteem among participants. Vena Jules (1992) said that student believed cooperative learning had enhanced their self esteem and that a sense of equality developed through all working together. Manning (1991) backs this up and again stressed the need for the inclusion of social skills in cooperative learning activities, indeed it is suggested one of the reasons cooperative learning has such an impact on self esteem and confidence is the regular input of social skills teaching into lessons. Even Slavin (1984) who is such a strong supporter of incentives to improve achievement states that self esteem is improved through the use of cooperative learning techniques and there is no need for incentives for this to happen. This review shows that even though none of the studies has at their centre the impact cooperative learning can have on confidence, there is evidence that this is a helpful by product of the pedagogy.

2.6 Responsible Citizens

This is an area that is harder to quantify through the current available research. With increasing interest in Citizenship in our schools and lives, as our cultures continue to

diversify, and the needs in our communities change and develop, the ability to engage fully in our society is an essential skill. Responsible citizens should be able to show respect for others and contribute fully in society. A school is not a replica of society but the scope is there for students to learn to engage in various ways and many subject areas offer the opportunity to do so: through, for example, mock elections in Modern Studies, and the general curriculum and awareness-raising that is offered in all Social Subjects in the Secondary sector.

Other means of showing responsible citizenship include being involved in charity work and enterprise activities within the school and the inclusion of projects such as the Eco Schools (online) and the corresponding awareness that comes from that. The other hope that comes from this is that students may be able to engage more effectively and fruitfully with individuals whom they may not initially have associated. Setting up teams and including social skills in lessons helps pupils to be more respectful to one another, and eases interaction, where pupils may have found it difficult before. The inclusion of small group skills (Gillies, 2007) helps to ensure young people are aware of the importance of taking turns, listening to and supporting one another.

Among the research into cooperative learning, there has been explicit research that has looked at the relationships between different groups of young people. Johnson (1982) conducted a study looking at the impact on cross ethnic interaction and friendship following the implementation of cooperative learning and found that greater ethnic interaction took place during instruction time and, importantly, more spontaneous interaction in the students' free time. This is a positive outcome that can support the changing citizenship across Scotland where social and cultural diversity increases. The opportunity to have ethnic groups interacting breeds tolerance and understanding.

Johnson (1985) built on the previous study by looking at the impact socially over time on different groups and found the more cooperative learning activities that were perceived by pupils the greater the social support. The longer cooperative learning took place the greater the social support among students. Gillies (2000) looked at the long term impact of cooperative learning activities on social support and found that young people trained in cooperative learning activities showed more supportive behaviour over a period of time to those not trained in the strategies. It was also found that “*Young children who have been trained to cooperate and help each other are able to demonstrate these behaviours in reconstituted groups without additional training a year later*” (ibid: 97). This shows the skills developed through cooperative learning can be maintained over a period of time, leading to greater respect for other individuals.

Margaret Martin (2007) advocates the use of cooperative learning to build a learning community in the classroom and this supports citizenship among young learners. Clark (1988) indicates the importance of schools in helping to develop children’s ability to cooperate with one another, as this may not be a feature of their family life. Gabbert *et al* (1986) identify the ability of cooperative learning methods in ensuring social support among groups and in allowing for social and personal development over time.

It is hard to find opposing views here and this may be due to a lack of focus on this area. The process of teaching young people how to interact with one another, an area that many are unskilled in, may be having a positive effect. In cooperative learning situations any behaviours that are deemed to be unacceptable to the group, and the class, are dealt with directly and moved through. Kagan (1994) offers guidance on how to manage any difficult situations or bedding them down.

There may still be issues at times where students do not want to take part, contribute or take a turn. As individual teachers skills evolve they will develop strategies for this or find ways to manage the situations. Johnson (1985) does state that the more cooperative learning activities that are included and used over a period of time, the more positive the climate of the classroom is and the conditions are for social support. Tony Pell *et al* (2007) recently completed research looking at the attitudes of pupils in Key Stage 3 in England and focussed on pupils with a very negative attitude to school. They found teachers unhappy to complete group work of any kind due to the behavioural issues and attitudes of some young people. Following the input of cooperative learning activities at this stage the researchers found that the actual curriculum, and way it was being taught, was possibly part of the problem with irresponsible behaviour. They report the comments of one participating practitioner, *“I used to think that group work was the problem in dealing with these difficult pupils, now I think it’s the solution”* (ibid: 329).

2.7 Effective Contributors

Effective contributors should be able to communicate in various ways and have resilience to stick with a project and see it through to the end. The four capacities of Curriculum for Excellence give a detailed list of the skills that an effective contributor would hopefully possess. Contributors may be skilled in some areas and have developing skills in others. This is not isolated to this capacity but there are elements here that some may not want to contribute to, for example, leading a team or contributing some specific idea; this would not preclude an individual from being an effective contributor in other areas. In the research there has been no specific study looking at how effectively different individuals may contribute through cooperative learning activities, but there will be evidence of this, through outcomes and different means of presenting and organising learning and participation that has taken place. In the same way that current research may highlight issues with different strategies, or the manner in which some young people may respond,

this is an area for investigation. In this research there will be an analysis of how participants may or may not have shown themselves to be effective contributors.

In the literature there is a lot of evidence of cooperation and support which is linked to being responsible citizens. Part of the mechanism within cooperative learning is to ensure that all learners take part and it is hoped that this research will be able to shed light on how effective that is. Of the published research there is evidence of very positive attitudes from students to cooperative learning. Hauserman (1992), with his notes on the positive attitudes in the classroom, supports the notion that pupils are contributing to their groups and that students, in receiving academic help and encouragement from their peers, contribute to their mutual learning. Johnson (1985) noted in his study that students engaged with cooperative learning more effectively over time and were less motivated by extrinsic factors and were happy to engage more.

2.8 Conclusion

The research that has been completed on cooperative learning has aimed to show the contribution it can make to raising achievement and in the development of positive social interactions. The nature of cooperative learning requires that learners work together and engage with one another. The evidence from the studies noted here is very positive and will be further supported in the next Chapter, when the new curriculum is discussed and in Chapter 5 in relation to this research project. Chapter 3 will now explore the background to the new curriculum, identify what ‘good practice’ is considered to be in relation to the curriculum and inspectors. It will then clarify where cooperative learning can be regarded as good practice in relation to this.

Chapter 3 *Curriculum for Excellence and Good Practice*

Curriculum for Excellence is the new curriculum in Scotland. School curricula are developed to suit the needs of a particular time. Curricula are the result of preparing young people for the needs of society (Gatherer, 1989), and appropriate content and skills that are required to be developed, or enhanced, in young people. The philosophy of *Curriculum for Excellence* is that education should cover a broad range of skills and be concerned with more than content. The curriculum should develop individuals who can take a full part in society and be prepared for the changes that are found within it. This chapter will focus on the influences guiding *Curriculum for Excellence* and what the curriculum involves; the change and developments that are required in learning and teaching in our schools and on what is regarded to be ‘good practice’ today.

3.1 Drivers

The influences on our curriculum throughout the 20th Century were the needs of society, a focus on the individual and a developing awareness of what was required to produce rounded individuals. It is evident when reviewing the Scottish curriculum and its developments since early in the 20th Century that there has always been an awareness of the need for active learning. This need was realised as one where young people learn more effectively when actively engaged in learning. Comments from teachers, particularly those with a great deal of experience, that active learning is not new can be supported.

Gatherer states that “*The Scottish education system is one of the oldest in the world, and it is still changing*” (1989: ix). Scottish education has developed into a system where it is mandatory that all pupils are engaged in formal education until the age of 16. Within this every effort is made to ensure that all learners experience an inclusive curriculum that aims to address individual needs (Standards in Scotland’s Schools etc. Act 2000 – online; Additional Support for Learning Act 2004 - online).

All of this can be regarded as developments in thinking about our education system.

Gatherer (1989: 5) identifies this education system as one that would merge with the needs of society at that time. From its introduction in the 16th and 17th Centuries education was regarded as a means of, “...*erecting Christ’s kingdom on earth*” to the 1970s and 1980s where “... *the inculcation and preservation of the ‘democratic virtues’ of tolerance, industriousness and good citizenship*” were required (ibid: 5). Today young people need to build on previous requirements and be involved in a society and economy that is rapidly changing. The purpose of *Curriculum for Excellence* is that it should help to develop the “...*attributes and capabilities which contribute to the capacities*” (The Scottish Government, 2008: 22). The four capacities that are identified within that are successful learners, confident individuals, responsible citizens and effective contributors. This Chapter will now explore how these ideas relating to curriculum development have evolved.

3.2 Curriculum Development

The curriculum is not stagnant and is supported by broad principles that can be altered or developed. Throughout successive governments there have been changes in emphasis on what schools should be doing to assist young people with their learning and what is required in education. There has, however, been a theme that has permeated European curricula over the last half of the 20th Century. This theme has been that young people learn through activity. In the literature review it has been established that education is supported by research into how we learn through the work of educational theorists (Bruner, 1967; Dewey, 1991; Gardner, 1993; Moll, 1990; Piaget, 1950 and Skinner, 1974). The expertise of theorists influences practice in schools. As previously discussed there has been a significant focus in classrooms, particularly in the secondary sector, of teacher led

activities. What is evident from the continual focus on the need for active learning is that this approach needs to be balanced with more pupil directed experiences.

Lindsay Paterson (2003) reviews the changes and developments in Scottish education over the 20th Century and identifies our developing awareness of research into education and understanding of what constitutes good practice within this. Paterson (ibid: 110) identifies significant thinking in education including that by the Scottish Education Department (1946) who argue that the organisation of the classroom and the curriculum were not appropriate. It is quoted from as early as 1946 that,

“...the hard division between “subjects” is a logical and adult conception that is justified neither by life experience nor a natural way of learning’ (see p.20). The atmosphere of school was too ‘academic’, too ‘verbal rather than real’, too passive: ‘children are required to sit still, listen, accept, and reproduce either orally or on paper (see p.20)”.

Therefore active learning was required, as had been identified by a number of theorists, from the early part of the 20th Century.

Although related in the main to primary education the above is supported in 1947 by the curriculum constructed by the Advisory Council (Gatherer, 1989: 109). This council stated that the *“...good school is to be assessed not by any tale of examination successes, however impressive, but by the extent to which it filled the years of youth with security, graciousness and ordered freedom”*. Exam success was still regarded to be important by the then Secretary of State however they were in agreement with most of the recommendations and produced exemplars, and a series of circulars, to assist the implementation of the recommendations into schools. Active learning was embedded within the Advisory Council’s guidance where, not only did they request pupils engaging in their learning, but, in working together, *“... substituting for competition, individual rivalry, and the familiar machinery of marks and merit lists’ to create ‘a truly cooperative spirit’ where’ youngsters are not merely allowed but encouraged to help one another”*

(ibid: 110). The comments from teachers that active learning has been introduced before is clearly true as in 1947 active learning was regarded as being an important means of assisting learning.

3.3 Curriculum for Excellence

The *Curriculum for Excellence* in Scotland is based not only on the research of educational theorists but includes the views of parents, pupils, teachers, HMIE and the SQA. From all groups it was believed that the current education system was not adequately preparing young people across a spectrum of needs and a change would better aid the development of “... *skills for learning, skills for life and skills for work*” (Scottish Government, 2008: 8). It was further believed that the new curriculum would aid in the development of “...*the competencies, capabilities and values which are vital for the future success and wellbeing both of themselves and Scotland as a whole*” (ibid: 8). This reflects the changing demands of our economy and the need for a flexible and adaptable workforce who are equipped for the challenges of today. As W. A. Gatherer (1989: 79) states schools do reflect the changing needs of society and during the 1960s and 1970s the recognition of the changing demands then resulted in, “...*the recognition that society was changing its character and its requirements of schooling caused the appearance ... of new subjects and new courses comprising different elements of different subjects*”. This included the development of subjects such as Modern Studies and Guidance into the curriculum, both of which are now strong and relevant in schools.

Today we have moved from a traditional economy based on a manufacturing industry to one that requires a different sort of worker. Our main economy is based around the tertiary (service sector) and quaternary sector (including areas such as research and development and information systems) and consequently new skills are required. Today we need young people who can function effectively within a ‘knowledge economy’ that requires change,

development and creative thinking. Today we are required to use our knowledge to transform situations and help ourselves and our institutions move forward. Knowledge is not stagnant and must be used as a means of change, we have to use our knowledge and young people must be educated to do so rather than merely retain the knowledge. Schon (1973: 78) quoted on (infed - online) states:

“We cannot expect new stable states that will endure for our own lifetimes. We must learn to understand, guide, influence and manage these transformations.”

It is no longer appropriate to simply teach content to young people when they will be required to exist in a society and economy that values interaction, team working, responding to others' needs and using creative and inventive strategies in their day to day lives. *Curriculum for Excellence* aims to address these needs in pupils and the question for teachers is how best to implement these.

In this respect, the relevance of this new curriculum to our society is without doubt. As to its validity in the eyes of practitioners this is more open to question. One of the key elements of education is that change occurs, in much the same way as our economy, and we are required to embrace new ideas. In opposition to *Curriculum for Excellence* there is a sense in some sectors that it lacks direction and substance. The current curriculum is very content driven and although active learning practices are advised they are not, to a large extent, embedded in the curriculum. In some areas there is a sense of coherence in the curriculum but with any change it takes time for the ideas and expectations to become the norm, and periods of change can be both exciting and challenging.

Where *Curriculum for Excellence* differs from some previous curricular developments is that it focuses on outcomes and provides a high degree of flexibility in content. This enables teachers to be responsible, to a large extent, for what is actually taught. This acknowledges the professionalism of teachers by using a bottom up approach to curriculum development. Gatherer (1989: 125) discusses previous curricular changes where teachers

were not included in the process and were subject to ‘top-down’ approaches and ‘cascade’ models of curricular development. This has a negative impact on teachers’ autonomy and professionalism and the new curriculum provides an opportunity for teachers to redress that balance. *Curriculum for Excellence* comes in the wake of the 2001 Teachers’ Agreement which aimed to ensure teachers could deliver “...a world class education service which will fit well for the 21st century” (2001: 1). Embedded within this document is the notion that collegiality is important for teachers as is the opportunity for continuing professional development (CPD).

The present curriculum in Scotland is divided into three sections that address the needs of different age groups from 3-5, 5-14 and 14 and above. Within this it is anticipated that pupils will experience a broad curriculum that prepares them well for life. In the Structure and Balance of the Curriculum: 5-14 National Guidelines (LTS, online) it is stated within the aims that children on entering school already are ‘successful learners’ and acknowledges the need for active citizens and confidence in individuals. There is breadth and balance shown within the curriculum, all of which are elements of *Curriculum for Excellence*.

Where the 5-14 curriculum is found to be lacking is in the quantity of content that is required to be covered and the failure of young people to progress as effectively as is hoped during the transition to secondary school. The curriculum is regarded as ‘cluttered’ in that it covers too many areas in detail and is too prescriptive in what must be taught. Regarding the transition into the secondary sector the challenge is in ensuring progress for all at this stage. Despite the link into the secondary sector in the lower school years, with this curriculum, this is an area that has been identified as requiring more challenge. The aim of the new curriculum is to ensure there is real coherence and depth in pupils’ learning and that previous learning experience can be built on. A further issue with 5-14 has been

the focus on subject areas at the expense of themes. Thematic education has been a feature in the past and it is hoped through the new curriculum that learners will be able to see the links between their learning and skills. The new curriculum is from 3-18 with the aim of a progressive and supportive learning experience throughout all formal education.

3.4 Development of Curriculum for Excellence

The development of the new curriculum is ongoing. At the present stage of development there is the opportunity to engage with the draft 'Experiences and Outcomes' on the website at LTS (online). This provides the opportunity for teachers and other professionals within education to respond to the outcomes and also to pilot these within individual schools and departments. The state of engagement is different across schools and authorities and the ways in which the new curriculum is being approached shows great variety.

In some authorities there is a high degree of organisation in implementing *Curriculum for Excellence* such as that in Local Authority 2 discussed in Chapter 5. This Authority has provided CPD for all staff to assist in the development of pedagogies and skills in effectively managing active learning for pupils. There is no sense that a cascade model of developing the skills for this pedagogy is sufficient but awareness that full experiential learning is necessary for teachers. There is an understanding that the active learning involved is not the traditional approach to group work that many teachers have experienced and found wanting. This could be an important reason in why teachers can be reticent in employing group activities currently and in the past. This may also be why the use of active learning is continually identified as a necessity to aid learning in young people when curriculum outlines are provided, with the aim of increasing its use. Group learning has consistently been identified as an important means of assisting learning in young people and many experienced teachers still do not engage in this. Providing training and CPD that

enables group activities to be well and effectively managed so that all pupils are involved must, surely, be a means of addressing this.

There can be concerns by teachers in relation to how this may affect progress and as a consequence receive negative reports from inspectors. In Scotland 'inspectors' have been involved in curriculum development for some time. In the 1960s inspectors from HMIe gave guidance to subject teachers on their curriculum (Gatherer, 1989: 20). Their role lessened during the 1970s in relation to curriculum development but they have always had a part to play in supporting and identifying what constitutes good practice. The HMIe are now in a position where they guide schools towards what is regarded as good practice and they promote the use of active and interactive learning. Any concerns teachers have about active learning should be alleviated by this statement in support.

Curriculum for Excellence is supported by various documents including Building the Curriculum 1, 2 and 3. Building the Curriculum 1 was issued by the Scottish Executive in 2006. This gave guidelines on where particular curriculum areas may be located within the new curriculum and some examples of where each subject area may help the development of the four capacities in young people. In Building the Curriculum 2 (Scottish Executive, 2007) the focus was on active learning in the early years of education with a focus on where this would fit with the four capacities. The Scottish Government (2008) then produced Building the Curriculum 3 which provides a framework for learning and teaching. The aims of this document are varied but it establishes some of the key ideas within *Curriculum for Excellence* that include relaxing the degree of assessment in the secondary sector with a strong statement to the effect that no formal external examinations should take place, unless in exceptional circumstances, before the end of S3 in secondary. This is an area that may come into conflict with the organisation of some schools at present where pupils can be entered for formal qualifications at the end of S3.

The examinations planned to correlate with the new curriculum are still under review and development at present. Indeed recent debates about the appropriateness of the system proposed have resulted in the Government providing more time for the development of the exams and the implementation of the new curriculum. In a press release (31/10/2008, online) the Scottish Government highlighted this ‘grace’ period for schools where an additional year has been given for preparation.

This concession by the government was broadly welcomed by stakeholders as it is believed teachers require time for “... *professional reflection and development work on the new innovative teaching and learning programmes required*” (ibid). The delay in the exams was highlighted in the media as being as a result of concern from teachers that they would not be ready in time and that some concerns with the new curriculum had still to be addressed (Herald, 2008; BBC news, 2008).

The original consultation document presented an examination system that would maintain the current Higher level exam (University entry level exam certificates in Scotland) as a ‘gold standard’. This would suggest that young people have achieved to a high level in their secondary education. Prior to this, pupils have the opportunity to achieve at the new General and Advanced General Level in S4. This alters the focus of the early years of secondary as it removes the perceived need to ‘teach to exams’ and provides the opportunity for ‘*more imaginative teaching that can capitalise on approaches which make learning relevant, lively and motivating*’ (Scottish Government, 2008 :9).

It is possible to reflect on the positive attributes of other education systems and how that may also have influenced current thinking in Scotland. An example of this is from Finland where the best results in Europe have been identified from the Programme for International

Assessment (PISA, 2006: online). Finland has been found to have a successful education system where pupils work as groups using an enquiry based approach. There are positive relationships with staff and a less authoritarian management system than the one that operates in our schools. In this education system children learn by doing where, *“The lesson is by no means spent in silent memorization; the children walk around, gather information, ask for advice from their teacher, cooperate with other pupils, and occasionally even rest on the sofa”* (The Finnish School, online).

Building the Curriculum 3 (Scottish Government, 2008) provides schools and organisations with a means of reflecting on what is current within the education system and scope to think about how teachers can take the new curriculum forward. There is within the document guidance on the need for collegiality among teachers and it fosters the opportunity for teachers to be proactive in developing the curriculum as suited to their particular local needs. Sachs’s (2003) argument for an activist teaching profession would support this approach. The new curriculum provides an opportunity for schools to radically alter their organisation and focus, and promote a more collegiate and integrated approach in education. The opportunity for this approach has been provided through the Teachers’ Agreement as already noted. In support of the importance of teacher interaction the Scottish Consultative Council on the Curriculum (1995) stated that *“The biggest and most undervalued resource teachers have is each other”*.

Curriculum for Excellence puts the learner at the centre of the curriculum (Scottish Government, 2008: 11). There are several key elements to this curriculum. Themes that should permeate the curriculum are: enterprise, citizenship, sustainable development, international education and creativity. There is a sense that progression through the stages and content of the curriculum should fit with the learner. Rather than jumping through a series of staging posts the learner should be able to move through at their own pace, for

some, before sign posted stages, and for some, after. The educational experience of young people should be coherent and continually build on prior expertise and learning. The curriculum should be ‘rich’ (ibid: 35). The principles of this curriculum are that it should provide breadth, challenge and enjoyment, progression, depth, coherence, relevance and personalisation and choice (ibid). Many of these principles are embedded within our current curriculum but schools are called upon to audit and reflect on areas that are not included to ensure young people access the education they have a right to expect.

Significantly the purpose of the curriculum is defined as one that “...enables the child or young person to develop the ‘four capacities’ (ibid: 22). The four capacities of *Curriculum for Excellence* should be developed in every young person through the curriculum content and good practice that is undertaken in schools. The role of the teacher has moved to one where an appreciation that learning and the development of skills in young people is essential, rather than maintaining a focus towards exams.

As teachers are required to employ ‘good practice’ this is a term that requires definition. One area that has been consistently defined as good practice is with the active engagement of learners and this is an area where cooperative learning has been found, through research, to work very well. This chapter will now explore the issues around good practice and identify where *Curriculum for Excellence* can be regarded as supporting good practice. Cooperative learning will then be assessed to clarify where it sits in relation to what is accepted good practice in schools.

3.5 Good Practice

Good practice in schools aims to ensure that the best possible learning conditions are created to enable effective learning to take place. Although written in 1995 the document ‘Teaching for Effective Learning’ by the Scottish Consultative Council on the Curriculum provided an excellent analysis of what good practice is. This document supports the current actions of many classroom teachers where good questioning techniques, classroom management and an understanding of how we learn are regarded as essential features (Scottish CCC, 1995: 4).

How we learn has previously been discussed in the literature review but it is worth noting here that how we learn as individuals can have an impact on how we teach. Currently in Scotland most of the teachers in our school are the product of our education system. For many this will have involved a system that was behaviourist in approach. For individuals to be successful in an education system that supports this learning style, they must be able to function well within this system, and as such, will value the learning and teaching pedagogies that such a system provides.

Today we are aware that we do not learn in the same way (Gardner, 1993) and consequently as teachers it is necessary to adjust our practice to accommodate this and ensure that all pupils are included. Traditional approaches are still a strong feature of our classrooms, however, and this could be the result of our current teachers working well within that system. What is recognised today is that a much more flexible and adaptable approach to learning in the classroom is required if all young people are to benefit equally from our education system.

It is important that pupils are able to engage confidently in independent learning and this is a feature of good practice. However, it is essential to be aware that “*Most learning*

involves other people” (Scottish CCC, 1995: 9). Within this document it is clearly identified that learners need time to engage fully by interacting with others. This belief has its roots in social constructivism where individuals learn from one another (Bandura, Infed – online) and can be seen to permeate thinking about effective learning today. This does not mean a setting of group work where some may feel uncomfortable or lack confidence to participate but one where “... *learners have specific opportunities to work cooperatively as groups rather than simply in groups and are encouraged to do so*” (ibid: 9). This may involve working on the same task or through taking on roles such as “...*providing an opportunity for learners to share responsibility for both their own and other people’s learning; to take on different roles such as team-mate, coach and teacher*” (ibid: 9). The use of roles in active learning and the opportunity to work cooperatively are all aspects of cooperative learning. This pedagogy further supports working as groups rather than in groups and as such can clearly be defined as good practice.

Good practice is further defined as involving the ability of the teacher to interact with learners (ibid: 14) to help develop their skills in assessing their own progress and these are all areas that most of today’s teachers felt confident in. Where some teachers currently lack belief (as this research has shown from the case study school) is in the ability of some young people to learn effectively from one another. This is reflected in the reticence of some teachers to regularly include active learning practices in their classrooms. The key differences between traditional group work and cooperative learning work is that traditional group work does not normally issue roles, there is no sense of team identity, some pupils do not feel supported in the process and social skills are not developed in the class but may even be damaged during the process. These are issues in traditional group settings and this presents a valid explanation of why teachers may feel this is not an effective strategy within their classrooms.

In contrast the effective implementation of cooperative learning pedagogies aims to support all learners, and enhance the learning of all. It has the capacity to engage all learners and through the process of peer support and the development of social skills can enhance the relationships that many young people have with one another.

Good practice is further supported by the teacher's own personality and how they interact with pupils. The ability to see the links in the curriculum while being knowledgeable about what we are teaching is identified (ibid: 22) and this will increasingly be a skill that is developed as teachers are provided with the opportunity to engage more fully with one another. The detail of what is good practice is supported by the Hay McBer report (2000, online) where the characteristics of an effective teacher are identified. This report is the culmination of research into the actions of teachers using interviews, questionnaires and observations that were able to establish exactly what it is that effective teachers do.

Among the qualities identified was the ability to manage resources and classes well, and having a well developed toolkit of teaching skills. Among the areas that were identified as strengths was the ability to encourage pupils to value one another (ibid). This is a key element of cooperative learning and a significant area of *Curriculum for Excellence* where pupils should be able to show responsibility and contribute effectively.

3.5.1 Good Practice and HMIE

The new curriculum engages with what is now regarded to be good practice. As previously discussed in the literature review, there is presently a drive in education for learning that enables young people to be active and engaged in the process. One of the tenets of reviewing how well pupils are learning is gauged through the impact of comparative exam results in Scotland.

The exam results serve to establish how well pupils have progressed in general, although progress can be viewed from many perspectives. Is progress defined in relation to a particular view of learning, and whether learners have passed signposted stages within that, or is this more holistic? One's view of learning can have a significant effect on what is regarded as progress. Christie & Boyd (online) argue that focussing on progress:

“... tends to drive thinking about the curriculum into a linear mode, which fails to reflect the true complexity and multi-dimensional nature of learning”.

They state in fact that it is not 'what and when' learning takes place that is important but 'how' that learning takes place (ibid). This theme resonates within *Curriculum for Excellence* and relates to all the evidence that has been established in this chapter with respect to what constitutes good practice.

In Scotland the impact of individual schools, the facilities and the experience of learners is evaluated by Her Majesty's Inspectorate of Education (HMIe). HMIe drive developments and changes in schools by setting criteria for what can be constituted as good practice and what needs to be done to enable organisations to progress. HMIe have broadly been involved in curriculum development in Scotland for some time and are now drivers in some of the developments taking place.

HMIe offer guidance in their document 'How good is our School?' (HMIe, 2007) on the ways that educational institutions can, through a rigorous appraisal of current practice, find ways to move the organisation forward, ensure effective learning and the maintenance of good practice. HMIe provide examples of what they consider to be good practice on their website and these are available for schools and authorities to draw on (ibid). HMIe identify six key questions that can be used in the process of self evaluation for an institution and these range from looking at the impact on individual learners to the role of

leadership in moving forward and developing the organisation. Thus the effectiveness of schools is broadly examined.

The area of particular focus in relation to good practice is on the question 'How good is the education we provide?' This is established by looking at practice in schools to identify any areas of weakness. HMIe are very practice based and their evidence for good practice reflects research findings. HMIe undertake their own practice based research in schools through looking at various measures of success and establishing what promotes that success. The evidence being gathered by inspectors clearly links to active learning practices as benefitting and engaging learners. In their document 'Improving Scottish Education', HMIe (2006) identified the need for more active learning in some areas of the secondary curriculum enabling pupils to have more responsibility in what they do. This practice, as already discussed in the literature review, is validated by previous educational research that supports the benefits of active learning. Good practice in today's schools features a model of teaching where pupils are not regarded as passive learners.

A similar appreciation of active learning practices is current in England. The Office for Standards in Education (Ofsted, online) complete school inspections in a similar way, although the grading is different their aim of is also to improve standards in education. Ofsted promote the use of engaging active learning and this is supported by the proposed developments in their education system (The Children's Plan, online) which focuses on the need to produce young people who are life-long learners and fit to take part in our modern and changing society and economy. They state they need to "*... give young people the knowledge and skills that employers and the economy needs to prosper in the 21st Century*" (The Children's Plan, online: 6)". There is awareness that teacher effectiveness is an essential component to ensure standards are raised in schools (Hay McBer, online). Good practice in schools is identified, as shown above, to involve effective teachers, with well

organised classes and the implementation of effective active learning practices that enable young people to learn together. Cooperative learning is an effective means of implementing organised, inclusive, active learning in a classroom.

3.6 Perceptions of Learning and Teaching

The perceptions of what good learning and teaching are has changed and evolved over time. The demands on today's teachers are very different to those of 30, 50 or 100 years ago. Early formal education in Scotland was very much within the transmission model where pupils were the passive recipients of learning and young people were trained to fit into a society and economy that needed an industrial workforce. Gatherer (1989: 6) identifies the fact that in the early 20th century there was a need to "...*'equip' the pupil for 'social service as workman and citizen'*". The demands on today's young people are altogether different as there is a need for competencies and abilities that change as our technology develops.

The aim of education now must be to develop in learners the desire to continually update personal skills and enhance their opportunities in the workplace. A theme that runs through curriculum developments in Scotland and in England (Campaign for Learning, 2005) is that education should provide individuals with the skills, enthusiasm and motivation that will enable each to be a life-long learner. Skills required today are broad, with a need for a creative and adaptable workforce and this has a knock-on effect in our education systems.

We require young people who can communicate, plan, organise, take a full part in society, be flexible and play their role as citizens. The demands on the young people of today are different to those of even a generation ago and as such the roles and demands made of teachers have also changed.

The role of the teacher today should also be one of a learner. Sachs (2003) argues that teachers should be proactive in promoting change that they are experiencing in relation to their professional context. She cites Hargreaves (1994) as stating that teachers must move "... away from the teacher's traditional authority and autonomy towards new forms of relationship with colleagues, with students, and with parents" (Sachs, 2003: 137).

Teachers' roles must move away from one of the 'transmission' model of teaching with broad use of didactic learning and teaching methodologies to engage more effectively with young people and better mirror the more active role they will experience in their work lives.

HMIe in 'Improving the odds, improving life chances' (18/06/2008) looked at how some schools had been successful in improving literacy and numeracy for the lowest achieving 20% of pupils and they include a list of characteristics that constituted very effective practice. They cite active learning and the opportunity to work collaboratively as important within this (HMIe, 18/06/2008). As previously discussed in this thesis cooperative learning has been shown to improve achievement at all levels with particular improvements in the middle and lower ability pupils. The skills developed within cooperative learning assist young people in maintaining more positive interactions with peers and help them adapt to different roles. The curriculum changes in Scotland require that young people are prepared for a more flexible future than was the case in the past and that they can be fully engaged in society in a variety of ways (Forde *et al*, 2006).

3.7 The Role of Subject Teaching in Developing the Four Capacities

Building the Curriculum 1 aimed to highlight the areas where subjects could begin to engage with the four capacities as a means of helping develop these in young people. As

an example, Geography will be used as it was the subject area of this research and has the benefit of engaging directly with some of the themes of the new curriculum. Sustainable development constantly permeates what is taught and issues around citizenship and international education are frequently raised.

Linking the Geography curriculum to where it can support the four capacities is not difficult. HMIE used examples of practice from Geography departments in schools to find out where the course content supported these. In relation to being ‘responsible citizens’ areas across the secondary curriculum were found to be supported. In the early years of secondary young people are encouraged to have “...*responsible attitudes to the environment...*” (ibid: 2). In S3 and beyond pupils develop “...*tolerance and respect by developing ... understanding of the reasons for social, economic and cultural differences*” (ibid).

Geography is fortunate that the themes that permeate our curriculum blend well with the criteria for *Curriculum for Excellence* but there are many areas identified in this document where this can be further enhanced. As will be discussed in the research analysis, cooperative learning pedagogies in the Geography classroom provide a practical application of developing the ways that young people can be identified as responsible citizens.

The capacity of ‘successful learners’ is an area that all schools have always aspired to deliver. In the practice analysed here by HMIE, in relation to Geography pupils are identified as engaging effectively in independent and collaborative work, particularly in relation to investigation tasks. This view of successful learners depicts motivated and enthusiastic individuals who are able to seek out and explore areas adding to their own learning. Across all stages, however, this is not believed to be the case and departments

are asked to question whether there is “...*too much time spent, especially at the upper stages, on the didactic delivery of large amounts of information*” (ibid: 4).

In relation to the development of ‘confident individuals’ there is awareness that this must be grounded in practice. Confidence based on superficial comments does not have a positive impact on young people. Confidence comes from feeling safe in an environment and knowing that you are able to try new things and take chances. This aids the development of independent learning and the learners’ strength of conviction on what they can actually do. Geography departments are regarded as contributing to this development not through content in the curriculum but through the ethos and opportunities the subject can provide.

The development of informed views and ideas, are regarded as aiding confidence in this literature, as is the opportunity to work collaboratively. Pupils benefit from having their views heard, from being involved in decision making and by contributing to discussions. In this respect it is important to reflect on the evidence that shows not all pupils are confident engaging in this way and may feel threatened in doing so. Teachers therefore need to question whether pupils are adequately supported in this context.

Guidance from HMIe asks that teachers reflect on the ways that they enable confidence to be built by assessing whether all pupils, “...*develop skills in independent and collaborative learning? Are pupils working in groups to develop skills such as respecting the views of others*” (ibid: 5). Collaborative learning assumes that all pupils will function well together, and this is the ideal, many young people however need to develop the skills that enable this to take place. This is where cooperative learning is effective in any subject area as it teaches the social skills necessary to enable a group to work collaboratively.

The final area that the Geography departments are asked to reflect on is in relation to 'effective contributors'. The Geography departments that formed this analysis were seen to assist this through the opportunity for pupils to take part in activities, show responsibility for their own learning through exercising choice, presenting their work to the class, role play and at higher levels, through extended pieces of writing (HMIe, 10/06/08).

To improve Geography, departments are asked to provide sufficient opportunity for "...discussion and debate about contemporary issues" (ibid: 5). Discussion would give pupils the opportunity to contribute to the whole class. When pupils engage in class discussion there can be pupils who 'fly under the teacher's radar' and are able to avoid this activity and let others 'do the talking'. To engage all learners successfully in an activity such as this, the use of small group skills that require everyone to take part, is a good starting point. This would then result in agreed group responses ensuring all pupils are fully contributing on a regular basis.

When reflecting on the above data from HMIe, who as already noted play an important role in assisting the developing of the curriculum, it is evident that there are areas where the curriculum can be found to support the four capacities of *Curriculum for Excellence*. Similar links will doubtless be found across curriculum areas. The links, however, can be tenuous and sporadic. It is more effective, and straightforward, to introduce an appropriate pedagogy into classrooms, such as cooperative learning, as a means of effectively supporting and enhancing the four capacities on a day by day basis.

Below, Table 3 attempts to briefly outline some examples of recognised good practice in relation to the four capacities of *Curriculum for Excellence*. Although not exhaustive, the brief examples given provide information on where current good practice in schools can

help to deliver the four capacities. In association with this, a brief explanation of where this can be provided by cooperative learning is given.

Table 3 – Good Practice

<i>Curriculum for Excellence – the Four Capacities</i>	Examples of Good Practice by HMIE	Cooperative Learning
<i>Successful Learners</i>	Evidence of young people being successful learners can be gained through examination results and statistics. Effective teachers have been found to include all pupils in lessons, give opportunities to learn together and discuss progress individually and with peers.	Cooperative learning has been shown to improve learning for pupils of all abilities. The opportunities to learn with peers whether mixed ability or in expert groups has been shown to enhance the learning of all.
<i>Confident Individuals</i>	Building confidence in young people has been identified through their involvement in group activities, the opportunities provided for them to be heard, show self respect and develop skills to enable them to achieve success in a variety of different areas.	Previous research has shown young people feel more confident when working with their peers in a supportive environment. This thesis will show the security this can provide in aiding the development of a sense of physical, mental and emotional wellbeing.
<i>Responsible Citizens</i>	Good practice has been shown to include involving young people in a variety of activities that promote responsibility (including pupil councils, eco schools and charity activities). These activities develop respect for others and their beliefs. The opportunity to develop informed and ethical views of complex issues are developed through interaction with the teacher and effective discussion in the classroom.	Increases responsible approaches to others through the social skills developed within small groups. Through the social skills developed pupils learn to take turns, respect one another's views and to make informed choices and decisions. Pupils are required to assess their own part in group activities and this involves an awareness of their responsibility to the group.
<i>Effective Contributors</i>	The use of ICT, working in teams and creative activities are some of the ways that teachers can assist the development of effective contributors. This gives pupils the chance to take on different roles and be more enterprising in their approach.	Cooperative learning requires that all pupils take part and contribute effectively. This is supported and managed by the distribution of roles within the group and the processing of how effective the group and individuals have been within that

3.8 HMIE Examples of Good Curriculum Practice

HMIE are the regulated body that systematically inspects the effectiveness of schools across Scotland as a means of identifying excellent practice and areas where schools can

further develop. As previously noted HMIE published Part 3 of 'How good is our school' (2007) as a means of assisting schools on this journey. This thesis will now review a number of reports by HMIE that identify good practice and establish where this relates to the four capacities of *Curriculum for Excellence*. As a further dimension it will be established where cooperative learning can be regarded as having a positive impact in each.

HMIE provide schools with feedback based on six levels. These levels are:

Level 6 - excellent	-	outstanding, sector leading
Level 5 - very good	-	major strengths
Level 4 - good	-	important strengths with areas for improvement
Level 3 - adequate	-	strengths just outweigh weaknesses
Level 2 - weak	-	important weaknesses
Level 1 - unsatisfactory	-	major weaknesses

(HMIE, *ibid*: 5)

The focus here is with Quality Indicator 5.2 teaching for effective learning (HMIE, *ibid*: 28). The key features of this indicator are that active learning should be encouraged, teachers should be able to effectively implement a variety of pedagogies in the classroom to ensure all pupils are engaged, and that learning should be in relation to learners' needs (*ibid*).

A review of HMIE reports was completed on a total of 24 school reports in Scotland with 11 of those in the primary sector. Four return visits reports are included along with 2 Local Authority inspections and their return visits. As a comparison to assess what Ofsted regard as being excellent practice 3 school reports have been reviewed.

The Local Authority reports cover the entire area of responsibility each holds and highlights the particular challenges that they face. The two Authority reports date from early this decade but stress the need for sharing good practice between staff. HMIE (30/05/2002) identified the need for one Authority to "*Extend approaches to identifying*

and disseminating good practice to contribute to raising pupils' attainment". One way this Authority has taken steps to address this through the introduction of a good practice website through the Glasgow Schools Network (online). In the follow-up report however, despite many developments and evidence of good practice being implemented (including the sharing of good practice), it was noted that initiatives aimed at improving learning, teaching and attainment had yet to make an impact (HMIe, 23/09/04). The reasons for this are not clear but possibly the delivery of enhanced practice needs to be more systematically introduced.

In relation to the second Local Authority report (HMIe, 11/02/2003) the Authority were noted for taking a "*Proactive stance to staff development as a means of support...*" included within this was the "*roll out, over five years, of the Canadian model of cooperative learning*" (ibid: 46). In the follow-up inspection continuous improvement was identified as were the comments from schools that "*... the inclusion of cooperative learning techniques was having a positive effect on young people*" (HMIe, 01/11/2005).

Within schools, as well as Authorities, there are differences in practice. Some of the challenges that schools experience include variations in staff expertise, opportunities for appropriate continuing professional development, pupil attendance, parental support, staff stability and absence. All of these can have an effect on the overall success of a school and on the development of good practice within it. There are issues with teacher confidence in embracing new technologies and alternative pedagogies and these are areas where staff can be supported. Management in schools can have a positive or negative impact on the ethos within the school on the ability of a school to face the challenges of the 21st Century.

In the school reports reviewed, a sample of which came from the Local Authorities noted above and a sample from other Authorities, the aim was to establish what was regarded as good and excellent practice by HMIe.

The areas examined in the reports were in relation to ‘the teaching process’ and ‘pupils’ learning experience’. Of all the schools included in this study only one school had two Level 6 comments for both the areas of teaching processes and pupils’ learning experience (HMIe, 20/03/2007). Amongst key strengths identified within the school was the “*outstanding quality of teaching and pupils’ learning experiences*” (ibid). In relation to what constituted such an outstanding report the HMIe advised:

“Across the school, pupils were actively involved in all aspects of their learning, regularly working together in groups to investigate and develop their work further” (ibid: 2).

In this school the Head Teacher was commended for the relationships that have developed within the school and the teamwork found there.

Amongst the schools identified as having very good or good pupil experiences and teaching for effective learning the strength of interactive learning was identified or was regarded to be an area that was developing well. Among this group there was evidence that pupils worked well together cooperatively and were engaged and motivated by the activities in the classroom. (HMIe, 07/10/2008; HMIe, 02/09/2008; HMIe, 06/05/2008; HMIe, 04/09/2007; HMIe, 19/06/2007 and HMIe, 24/01/2006).

HMIe also define areas where schools are lacking and have significant room for development in both areas. Schools were identified as not fully supporting active learning practices (HMIe, 08/05/2007; HMIe, (a) 20/03/2007; HMIe, (a) 05/09/2006; HMIe (a), 13/06/2006 and HMIe, 02/05/2006) and it is interesting to note that all the schools who achieved either an adequate or weak in this sample are all from the secondary sector. The

absence of primary schools in this sample is possibly due to the more active learning approaches that are traditionally applied in this sector.

Traditional teaching pedagogies can hold firm in the secondary sector as staff are concerned that using alternative approaches will not allow time for all curriculum content to be covered. The Inspectors' comments related to lack of active involvement by pupils. *"Teachers did not always involve pupils actively enough in learning, or give them sufficiently useful feedback about their work"* (HMIe, 28/02/2006). Providing feedback on learning and sharing learning intentions are areas that have been identified as good practice (HMIe, 20/03/07 a).

Sharing learning intentions is a feature of *Curriculum for Excellence*. This is also a feature of formative assessment that should be included in classroom practice. The lack of this would suggest that pupils' learning experiences are affected (Learning Teaching Scotland (online)). Cooperative learning also requires learning intentions to be shared.

The inclusion of cooperative learning in a classroom will help teachers to address the negative comments on pupils' learning experiences that occur when active learning is not a feature of the classroom. In this sample the comments from the HMIe followed a similar tone in relation to 'adequate' learning experiences for pupils. One school was identified as lacking in this area as *"...only a few teachers gave pupils tasks that allowed them to be independent in their learning, or to work together ..."* (08/05/2007).

In a further school the HMIe wrote, *"pupils were more responsive when actively engaged in their learning but they were, on a number of occasions, passive and the pace too slow"* (05/09/2006). In all the examples of pupils' learning experience being regarded as adequate the lack of active learning and engagement was identified as an important factor.

In all of the schools where learning experiences were seen to be excellent, very good or good in this sample active learning and engagement has been identified. Where schools have been rated below this there has been a lack or absence of active learning practices. Active learning has been shown to have a positive effect on pupils' learning experiences and is supported by research into education as an effective means of enhancing learning in schools.

3.9 Ofsted Inspections

As a contrast to the evidence from Scotland, and to highlight the changing philosophy in education occurring in a wider sense, brief reference is made here to the findings of some recent Ofsted reports.

Ofsted is the authority in England that identifies areas of strength and weakness in schools. Ofsted will support schools in moving forward and when the inspectors believe it to be necessary a notice to improve is given to the schools.

The criteria employed by Ofsted is as follows:

Grade 1 -	Outstanding
Grade 2 -	Good
Grade 3 -	Satisfactory
Grade 4 -	Inadequate

Ofsted (online) also supplies on its website a number of schools that have been categorised as outstanding as examples of good practice. In one school identified as outstanding the criteria identified for this status was due to the overall effectiveness of the school along with the “...*calm, well ordered school... students collaborate and work together and ... lessons interesting and exciting*” (Ofsted, 25/09/2008). The areas of outstanding practice are similar to those identified in Scotland. This is supported by the general understanding

now in education that young people must be prepared for life in the 21st Century that is complex and requires the ability to engage in society.

In one school given a 'notice to improve' the reasons for lack of quality in learning was given as "*...teachers talk too much...*" (Ofsted, 06-07/02/2008). In a second school learning experiences were described as variable with the best lessons described as ones where students were able to share thoughts and ideas with one another and "*...to ask for help or support so they became more self-confident and expect to do well. This is important because many students are not yet effective learners*" (Ofsted, 09-10/05/2007). The follow-up to this report showed an improvement with pupils saying they appreciated "*...the strategies used by teachers to engage them in their learning*" (Ofsted, 19/09/2008).

In England the focus of the new and developing curriculum for 4-19 year olds is to ensure that young people are able to learn. In the Campaign-for-Learning (online) pupils are expected to learn how to learn and examples of how this might be engaged are presented through studies on peer assessment, understanding how they learn, providing creativity in the classroom and cooperative learning. As has been discussed in this thesis what is increasingly being identified as an essential factor in effective learning is 'how' learning takes place. This is reflected in the reports from HMIE and Ofsted and much of both their evidence is based in research data.

3.10 Conclusion

What is evident from this Chapter is the need to ensure young people are ready to, and capable of, functioning in a positive manner within today's society. The term 'good practice' has been clarified in relation to what is regarded as good learning and teaching from research and reflection on practice and how this might relate to the new curriculum.

This chapter shows that there is a growing awareness that our education system must evolve to meet the needs to today's young people and prepare them for our complex and frequently changing working environments.

The pedagogies required of our teachers are similar to those identified over half a century ago and require the implementation of active learning. To ensure teachers feel able and ready to embrace these challenges and ensure good practice there must be support through appropriate CPD.

This thesis will now explore how the research for this project has been gathered and provide an explanation for the chosen methodology.

Chapter 4 Research Methods

Cooperative learning is a widely researched learning and teaching approach as the literature review in Chapter 2 highlights. A significant degree of this research has focussed on the achievement gains that can be experienced through the implementation of cooperative learning strategies in the classroom. In previous research there has been broad use of positive research paradigms (Johnston, 1993; Johnson, 1985; Neber *et al*, 2001 and Slavin, 1987) as a means of assessing the impact of cooperative learning and there have also been interpretive approaches (Jules, 1992 and Logan, 1986) although these are fewer in number. Each has attempted to ascertain whether cooperative learning can have a positive impact on individuals; their achievement and how they perceive their progress and personal development in a number of areas as a result of engaging in cooperative learning strategies in the classroom. There may also be critical theory and specifically action research studies similar to these but I have not located any published examples. What follows is an explanation for the chosen paradigm in this research but I will first outline how the research data was gathered.

4.1 Data Gathering

When completing this research I aimed to give an account of the experience of the participants who were exposed to cooperative learning lessons. I thought this would be possible through engaging a number of different data gathering techniques within the interpretive paradigm. I have outlined in the table below (Table 4) what I did to gather the data and in the rest of this chapter explain my rationale for the chosen interpretive approach to research and why I think the paradigm and data gathering techniques were appropriate in this project. Qualitative and quantitative data was gathered through interviews, questionnaires and tally sheets and the organisation and timescale of that is outlined in the table below.

Table 4 – Data Gathering

Data Gathering Technique	Date(s)	Action
Pilot	15 th February 2008	I issued questionnaires to pupils and group interview questions were also provided with time for reflection. Tally sheets were used during timed observation of cooperative learning activities.
Pilot analysed	16 th – 26 th February 2008	The results of the pilot were analysed where I looked for areas of misunderstanding and refined the research instruments. As a result adjustments were made in the questionnaire.
Pupil questionnaires	1 st March 2008 – 2nd May 2008	Plain language statements and consent forms were issued to pupils willing to take part in this project and when returned pupils were asked to complete a questionnaire. These were completed over a period of time due to the different rates at which they were returned. These were completed in class time.
Tally sheets	31 st March 2008 – 30 th May 2008	Observations of pupils with the tally sheets occurred after they had completed a questionnaire. I moved around pupils in their groups at one minute intervals and observed their activity and interaction during this time. Pupil engagement with any of the criteria on the tally sheet was recorded.
Interview with the Development Officer	1 st April 2008	This interview was conducted at a time and place convenient to the participant. Interview questions were provided prior to the meeting. The interview was recorded with consent. I transcribed the interview and returned it for verification on 8 th April 2008.
Group interviews – pupils	S1 – 4 th April 2008 S2 – 24 th April 2008 S3 – 21 st April 2008 S4 – 2 nd April 2008	The group interviews for pupils took place in my classroom and were recorded with consent. When required I requested the permission of classroom teachers to remove pupils from their class. The pupils were provided with the questions to review and offered the opportunity to review the interview transcripts.
Group interview - staff	6 th May 2008	This interview took place in my classroom on an in-service training day and was recorded with consent. The teachers taking part had agreed to this beforehand. All of the participants were provided with the questions a week before. Transcripts of the interview were forwarded to the participants on 6 th June 2008 for verification.

4.2 Background

In this research I was originally clear that I wanted to engage with an interpretive paradigm. I have been challenged, however, by my awareness of action research principles and my position in this research as teacher.

Early in this research I planned for a valid approach using an interpretive paradigm where I gathered qualitative and quantitative data as a means of ensuring a rigorous and detailed study (Table 4). Interpretive paradigms, like positive paradigms, aim to deepen our knowledge on a subject area. I aimed to add to the work of previous interpretive approaches. Action research is a development from the more recent critical theory approach to research that aims to challenge and change systems at a macro level (Cohen *et al.*, 2004). Action research aims for localised change and development where a practitioner can reflect on their practice and ask “*How can I...*” questions (McNiff, 2002: 97). In this approach an individual is researching themselves and the impact their actions can have on others “*...you are researching yourself, but that involves how you are influencing others*” (ibid). This presented an issue as I was researching how the introduction of a learning and teaching approach might assist in the development of the four capacities of the new curriculum while constantly revising what I was doing in the classroom in the light of experience. This thesis will therefore draw on both schools of thought.

A feature of this chapter will be to explore the tensions of teacher as researcher. This research is clearly not a ‘how can I’ question, as would be expected with action research, as I was researching a pedagogy and how that impacted on others, rather than looking at my own practice. It has, however, involved constant professional reflection and action as a result of the findings, and in this way the process of this research, and the actual implementation of it, can be directly linked to action research. The opportunities and

scope for engaging with action research principles while still respecting the validity, benefit, and indeed use, of the more established traditional approaches to research will be analysed below.

The reason this research has taken an interpretive approach was because it was essential to be aware of the intricacies of cooperative learning and the impact it can have on an individual. The aim of this research was to explore in what ways, if any, cooperative learning can assist in the development of the four capacities of *Curriculum for Excellence*. To fully appreciate the subtleties of this it was important to explore the attitudes and behaviours of participants in a manner that allowed the themes to be identified. These findings should help to further inform future practitioner practice, and in this respect, embrace the methodology of action research.

The four capacities of *Curriculum for Excellence* were used as a measure to assess in what ways young people perceive they may, or may not, have benefitted through cooperative learning in their development as successful learners, confident individuals, responsible citizens and effective contributors. This research is supported by evidence gathered through observations, questionnaires and interviews. The evidence gathered was analysed to assess whether cooperative learning could support the four capacities of the new curriculum. Quantitative and qualitative data gathering techniques were used to ensure balance within this research and to present detailed findings. The aim was to ensure that the full impact of cooperative learning could be gauged and that all possible variables were taken into account, in this research, within the context of the classroom.

4.3 Methodology

The traditional paradigms of research, positivist and interpretive, have evolved within a continuum. At one extreme we have a subjectivist approach, where interpretive research is

located, and at the other the objective approach where positivism exists. Louis Cohen *et al* (2004: 8) stress that the chosen approach will have “... *profound implications for research in classrooms and schools*” due to the manner in which research is carried out. The third paradigm emanates from a belief that interpretive and positivist approaches to research do not always get the full picture. Critical theory and critical educational research aim to alter situations for the better by addressing “...*the political and ideological contexts of much educational research*” (Cohen *et al*, 2004: 28). It is argued that all research is subject to this.

This research aimed for a balanced approach that took a broad perspective and gathered information from various sources using qualitative and quantitative methods. The overall research paradigm engaged however presented something of a challenge as I was constrained by elements of each paradigm. The notion that I would take a stance from one point of view and work with that seems limiting and at times challenged the notion of taking a broad perspective. This critique explores that tension and extracts the essential methodologies of a positivist, interpretive and critical theory paradigm that ensured I was at ease with the process, while respecting and validating the experience of all participants.

The practicalities of having to take ‘a stand’ or approach to research presented a tension. There was a sense that the divergence in thinking about philosophical paradigms could limit the overall outcome. The other side of this however, was an awareness of the strength in a didactic approach that focuses in one direction and provides the ability to move some way towards certainty when we look in detail at a particular issue. Within this I could see benefits, and indeed relevant points to be explored from each paradigm, this needs to be discussed in greater detail.

The nature of any research is limited as only a small area can be realistically and effectively explored. This does not invalidate the processes and findings from research. What follows is an understanding and analysis of the paradigms that could be used in this research. The aim is to move towards a deeper perception of why a particular paradigm or a sharing of paradigms came to the fore.

4.4 The Impact of Paradigms

Cohen *et al* (2004: 4) make a detailed study of two views of social science, that of the positivist or scientific paradigm and the anti-positive or interpretive paradigm. The authors begin by stressing that where one locates oneself in relation to these approaches “...*profoundly affects how one will go about uncovering knowledge of social behaviour*” (ibid). Not only do the two approaches have a different view of reality but this also implies “... *different ways of interpreting it*” (ibid). The work of Burrell and Morgan (1979) in Cohen *et al* (2004) is cited as an excellent explanation of the assumptions that underpin each theoretical approach. To paraphrase the authors’ assumptions about the theoretical approaches is to decide whether social reality is personal to an individual or something that is ‘out there’; whether knowledge is something that is ‘tangible’ or more ‘subjective’ and whether human beings control their environment or are they reacting to it (ibid). Cohen *et al* (2004: 6) advise that these ideas are important because the view taken in each of these assumptions will affect the research paradigm used. As such, if knowledge is seen to be “... *hard, objective and tangible...*” and researchers’ have “...*an observer role ... with an allegiance to the methods of natural science...*” a positivist paradigm will be appropriate. In contrast, if knowledge is understood to be “...*personal, subjective and unique ... imposing on researchers an involvement with their subjects...*” this will relate to an interpretive paradigm where the researcher is not removed from, or disengaged with, participants* (McAlister, 2008).

**The ideas in this paragraph were briefly explored in an assignment submission for the Theory of Educational Research module in 2008.*

As the above comments show it is the essential understanding one has, as to what knowledge is, that will influence and indeed determine how that research is conducted. This research aimed to explore and interpret individual experience in relation to a pedagogy. The aim was to extract the themes that emerged from the experience of individuals. Data was quantified to try and establish these themes and elicit a clearer, detailed picture of the sample. The aim was to ensure depth of understanding on how individuals interpreted their experiences. As this research looked at experiences this implied the research was interpretive in approach. The nature of research is not always straightforward however and the fact that the teacher as researcher aimed to explore the implementation of a pedagogy resonates with critical educational research.

It is clear that there are benefits in utilising a positivist approach to the study of cooperative learning as much previous research has shown. The scale of this research however challenged this and the fact that I was involved with the participants meant that an interpretive paradigm was fitting. However, the fact that this thesis was the result of a journey of exploration and engagement for me, looking at improvements in learning for young people, reflects a theoretical paradigm such as critical educational research.

This presented a challenge to me as an interpretive approach seemed appropriate to this study. Indeed, the rigour and validity that can be established to different degrees, in positivist and interpretive paradigms was desired here. The challenge came from awareness that critical educational research, in the form of action research, was also appropriate. How could I ensure the validity possible through engaging with long held traditions in research with an action research approach? This study aimed to do so by being completed in a rigorous manner with respect shown to traditional paradigms in research. However, there may be concerns, from some traditional schools of research, that the study

could lack validity due to its completion by a practitioner. Jean McNiff (2002: 20) identifies what she terms the “...*high priesthood*...” of research where “...*practitioners are not viewed as legitimate knowers, either by the high priesthood or by themselves...their form of theory tends to be regarded as practical problem solving rather than research.*” I believe there may have been validity in this comment in the past, however, as more practitioners have engaged with research this notion has been challenged. The challenge in this research was to present this thesis within a well formulated interpretive paradigm that could be regarded as relevant, reliable research produced by a practitioner.

This research was more than practical problem solving in a classroom and I have aimed to ensure that this is evident in the final analysis. The desire to explore this area using traditional paradigms shows my bias for different forms of knowing. The knowledge that can be gained from previous research was regarded as a benefit to the completion of this project. McNiff (ibid) would say that a literature review is not necessary for action research however I believe it is essential to ground understanding of the previous studies that show the impact of this pedagogy and further to validate the work here. As a result of these factors this thesis is neither fully interpretive nor fully action research based. It is, in essence, an interpretive research study completed by a practitioner.

4.5 Positivist Approaches to Research

Positivist approaches have brought many benefits to educational research. Our knowledge and understanding of the impact of various learning and teaching strategies, including cooperative learning, and on the success and academic achievement these can bring is impressive as a result of positivist research. There have been gains looking at measures such as integration in different ethnic groups, improvements in self-esteem and in motivation and all of these have related to cooperative learning (Clark, 1988; Hauserman, 1992; Johnson, 1982). This research shows that there are obvious benefits to the clear cut

analysis that the positivist scientific approach offers and that the data gathered does not only need to be statistical data. There are limitations to using the positivist approach in this particular research project however, due to its scale. A case study approach will be used to gather data on one particular school and this will not merge with the broad perspective that positivist approaches to research normally take. Further, the impact of the teacher as researcher presents a relationship between researcher and participants and any sense that the researcher is in an observer role only, is therefore not possible.

4.5.1 Positivism as Science

Positivism is a scientific approach to research. Positivism was born of an experimental tradition that identified causal links between two events (Cohen *et al*, 2004: 4). The scientific approach aims to be “...*systematic and controlled...empirical...self-correcting*” (ibid: 5). Here there is a system for completing any kind of scientific research and this allows for validation of any findings. This means that any findings made through this paradigm can be reviewed, and checked, by other researchers. The process acts as a self regulating body to ensure that research findings are accurate, give a true representation of the data collected, and the manner in which the research takes place.

This approach is based on the idea that social research, as takes place in schools, is basically the same as research in the scientific world, where the subjects of research can be controlled and possibly manipulated by the researcher to extract information or establish relationships. When looking at social science however, we are dealing with individual human beings who may not respond to the methods in straightforward ways and results can be open to interpretation. Human subjects cannot be expected to respond in a similar way to stringent scientific experiments, but data can be gathered from possible outcomes or activities that take place with human subjects. The use of a very broad group of

participants should enable generalisations to be made and allow for the development of hypothesis on the topic.

The true scientific method would require that as many variables in the research can be controlled as possible. One of the key points that should be considered in this, is the population to be studied and what the sample of that population might be. Cohen *et al* (2004) discuss this by stressing that the means of establishing a sample should be decided early on in the research. A scientific approach would want to control as many variables in the research as possible but in some situations this may not be possible due to the organisation within establishments. Schools are an example of this. In an interpretive paradigm this control may not be possible, or desirable, as the complexity of relationships and findings will be analysed.

One of the many benefits that positivist approaches to research has, is the sense of detachment from the participants. The researcher's task is to gather data and analyse it from the sample and the more controlled this can be, the more reliable and powerful the data is. In this style of experimental research time will be given to set a hypothesis and control variables. The researcher will have the sample defined and this may be through experimental or quasi-experimental methods. Cohen *et al* (2004) define the difference between these two approaches as being one where the researcher has some control over the sample selection and one where this is not possible.

An experimental approach has a high degree of validity as it is a truly random sample from a population, whereas, a quasi-experimental approach does not use random sampling. Here the group is established by some other means, such as the actual make up of a class group. This can be the case in schools when classes are set prior to any research being undertaken. Both experimental and quasi-experimental approaches involve the use of a

control group and/or the use of data gathering/testing before and after the research. This provides the opportunity for the researcher to test hypothesis as to the effectiveness of the input provided or the data gathered. By using such an experimental approach a comparison is possible between different sets of data and it is possible to gauge the impact of any input given.

Experimental research studies have been completed when looking at the impact of cooperative learning in the classroom (Johnson, 1993; Johnson, 1985; Slavin, 1984) and show the impact that particular cooperative learning strategies can have. Studies such as these are, however, focussed on the results that have been achieved and how this might impact on individual pupils. The data shows the benefits that cooperative learning has produced in different controlled situations, and has benefited from the validity that controlling different variables presents. The positivist research has been effective in gathering data that supports the use of cooperative learning as a means of raising attainment and achievement in young people.

Within the tools of the positivist researcher are a variety of data gathering techniques that enable a large sample area to be covered. Research, whether positivist or interpretive can make use of qualitative or quantitative methods for gathering data and this study used both methods when gathering evidence. In this research qualitative data should help to gather information on 'why' certain results are found and the quantitative data should help to gather the 'what' information (Theories of Education Research Course, 2007). The rationale behind this strategy is that it allows a broad perspective to be gathered through the use of questionnaires, with interviews enabling individual perspectives to be taken into account, and gives more depth to the research.

One method used in a positivist approach to gathering data by the researcher is that of non-participant observation. As the researcher is the classroom teacher of the pupils participating in the research, this is not possible. The normal practice involves setting up an observation schedule for gathering data and this technique was used, however, as I was involved with the pupils this had an impact on the data gathered. An observation schedule (tally sheet) was used to gauge the activity of participants while completing various cooperative learning tasks. It was hoped that by using a questionnaire this would balance and support the results gained from observations and group interviews. Using different data gathering techniques provides a broad perspective. From this a sense of how this pedagogy could be used to support the four capacities of new curriculum was established.

4.5.2 Issues with the Positivist Approach

Where this approach has been lacking is when the aim of the research is to get a sense of how individuals have experienced the process. The aim of interpretive research is to gain an understanding of the issue and this can be more readily understood by actively seeking the finer points. Positivism as a scientific approach is excellent at establishing the effect that cooperative learning can have on a broad spectrum of people over time but may not be as good at establishing the subtleties of that. Generalisations can be established from a rigorous scientific approach but they do not always give a sense of the actual experience of participants. As cooperative learning is about interaction, there needs to be an awareness of how this affects different individuals.

Cohen *et al* (2004: 19) state that to interpret the experience of individuals involved and to understand fully what has taken place “... *we need to examine situations through the eyes of participants rather than the researcher*” (ibid: 22). This research was exploring the link between the new curriculum and a pedagogy, it was looking at more than exam results and an interpretive paradigm enabled the experience of individuals to be explored. Indeed

Cohen *et al* (ibid: 26) state that the very nature of this form of research, “...*fit naturally to the kind of concentrated action found in classrooms and schools*”. Daniel Muijs (2004: 9) takes this further and states “*Qualitative research is good at providing information from a large number of units. But when we want to explore a problem or concept in depth quantitative methods are too shallow*”. It was necessary to ensure depth in this research through the use of interviews and to challenge a scientific approach that “...*excludes notions of choice, freedom, individuality and moral responsibility*” (Cohen *et al*, 2004: 17). This research can confidently give an understanding of the perceived impact cooperative learning can have in supporting the four capacities of *Curriculum for Excellence*.

This study is not a large positivist study that can make generalisations relating to a wide population but it can give a detailed and valid understanding of the situation within this case study school. Although this research made use of qualitative and quantitative data in its analysis the overall paradigm in which this research took place was through an interpretive approach which was “...*more concerned to understand the individuals’ perceptions of the world*” (Bell, 2005: 7). McNiff (2002) would argue that there is also a case for moving beyond ideas of the researcher producing information on individuals to one where the researcher is exploring their own practice and in what ways they have improved situations for other participants.

4.6 Interpretive Approaches to Research

This research focussed on a case study school and this is an essential element of the interpretive approach to research. Case studies allow the intricacies of a situation to emerge where themes, ideas and patterns emanate from the participants themselves. This was a case study due to the limits within this research. Sharan Merriam (1998) identifies the case study as a study with limits such as in this research project which focussed on one

case study school. Here the use of the case study approach allowed me to focus in depth on a particular location and the impact this pedagogy had.

This interpretive approach focussed on the perceptions of the participants, their voices and comments. I believed it was important to explore individual experiences. This was possible as the questionnaire used feedback from the pilot, and individuals could voice opinions through the interviews.

Validity in this research was through the rigorous approach used and the implementation of different qualitative and quantitative methods in gathering data. Participants were given the opportunity to feedback on findings and check for validity of their statements in interviews. The elements being researched were made explicit to the participants and there was participant involvement as a result. This should help to remove the notion that individuals were being researched and present a situation where the participants were helping to gather evidence on the subject area.

This research project aimed to establish if a pedagogy could assist in the development of the four capacities and was not intended to be invasive or to minimise the rights of participants, it aimed through the interpretive approach to gauge understanding and add to our knowledge base. It was hoped the feedback from this research would inform future learning and teaching and in this way the interpretive approach was supported by action research principles. Whether participants felt they have engaged with their learning was a feature of this research as was the adaption of my own practice.

Interpretive research aims to engage with the individual. The aim is to understand the world “... *from the standpoint of the individuals who are part of the ongoing action being investigated...*” (Cohen *et al*: 2004: 19). The notion that individuals have choices, make

those choices and are often motivated by a variety of factors (ibid) means that individual voices should be heard. I believed it was important to question how participants perceived the actions in the classroom had affected them and, in what ways they would regard themselves as having achieved all or some elements of the four capacities of the new curriculum. The use of quantitative data gathered through the analysis of the questionnaires aimed to give an objective understanding of the perceptions of the participants. The qualitative data collected was holistic in that it looked at the values, opinions and points of view of the participants. It is acknowledged that this could be subjective at times but any focus or areas where this was identified were highlighted and clarified.

4.6.1 Issues of an Interpretive Approach

Interpretive research cannot make the same assertions that are made in positivist research but is rigorous in gathering and analysing data. There is a degree of bias in any interpretive research and this has an impact on what the researcher chooses to study and to how it is interpreted. It is inevitable that a relationship builds up in interpretive research and the quality of this can have an impact on the findings, in the respect that participants may be more comfortable to expand their comments, if a positive rapport is established.

My enthusiasm for the topic studied in this research was evident and I aimed to balance this by first acknowledging it and then ensuring that all questionnaires, interviews and observations were completed in an objective way. Bias may be perceived through this and that was addressed in the research that is reported in this thesis. The questionnaires and interview questions were constructed to try and balance this by not leading questions or the participants. A very controlled observation schedule was established to ensure that accurate details were collected. The pilot study aimed to identify any areas of bias or inappropriate direction and address these before gathering the detailed research. The aim

was to ensure not only the validity of the research undertaken but that should this activity be repeated by a different researcher results would be comparable.

It was important to be aware that being involved in research can result in a sense of the participants 'being special'. This is simply the result of being involved in the project and by agreeing to take part. This was balanced by the various methods used to gather the research data that aimed to give a broad analysis that enabled the participants to explore their experiences.

As a research paradigm an interpretive approach offers an opportunity for participants to respond to their experiences in a constantly evolving situation. The day-to-day experiences of individuals can be interpreted and explored. Within the classroom situation pupils will experience different methodologies and practice depending on who is teaching the class and this effectively makes them aware of the impact different learning and teaching approaches can have, even if they would not choose to learn in this way.

The interpretive approach aims to go beyond that and give the participants the opportunity to explore what this means to them. As they are experiencing a particular learning and teaching approach they will interpret that in a manner peculiar to themselves. The context in which this occurs however is very important and Cohen *et al* (2004: 22) say where "*...events and behaviour...are richly affected by context – they are 'situated activities'*" as is the case here. It is also important to note that this research was focussing on the interaction that takes place between individuals and how they perceived this. As a result of this study it is hoped that clear opinions have developed on what ways, if any, cooperative learning can assist in interactions through the capacities as inherent in every one of these capacities are the seeds of positive interaction. Indeed Cohen *et al* (ibid: 26) state that "*Individuals interact...Interaction implies human beings acting in relation to each other,*

taking each other into account, acting, perceiving, interpreting...” and this is an essential theme of interpretive research. This description could also be related to action research in that evidence is gathered and fed back to the researcher as a means to assist them in developing their practice (McNiff, 2002).

Interpretive research paradigms aim to take account of the participants’ views and experiences and this can be regarded as a ground up approach. Some of the benefits and limitations of case studies are discussed by Cohen *et al* (2004: 184) where the strengths include accessible language and an ability to provide insight and limitations such as potential bias, subjectivity and the difficulty of generalisations. The limitations and potential for bias will be discussed further. One of the issues around this is that I have had an impact on what is being researched and the choice of area of study and interpretations of that can be very subjective.

To understand the subtleties in this study, there needed to be a degree of exploration with participants on areas that they believed to be relevant. However, an awareness of the very impartial results that can be established by positivist research was also required in this research. To embrace both approaches qualitative and quantitative data was gathered in an effort to maintain rigour and ensure depth of understanding. It has been possible to make generalisations within the case study area, explore the impact that cooperative learning had and interpret the views of the participants involved by looking at the ways they found this to be a positive experience.

4.7 Critical Theory and Critical Educational Research

Critical educational research is a recent paradigm in educational research. This paradigm is relatively new compared to the 300 year old tradition that supports the positive paradigm or the evolution of interpretive approaches in the last century. Critical educational research

or critical theory is literally being formed by those who practice it. This approach involves looking at the bigger picture and has developed from a dissatisfaction with the other two paradigms which it is argued fail to take into account the “...*political and ideological contexts of much educational research*” (Cohen *et al*, 2004: 28). Critical educational research aims to “...*not only understand situations and phenomena but to change them... to emancipate the disempowered...redress inequality and to promote individual freedoms...*” (ibid). In this study critical educational research would focus on the impact that the school and education system have in maintaining the current system and how this might be changed. In a small scale action research based approach the focus would be on what the practitioner could change for the benefit of learners.

McNiff (2002: 58) identifies three forms of critical educational research which are “...*an interpretive approach, a critical theoretic approach and a living theory approach.*” This last approach is constantly evolving where the researcher is researching their practice and how this impacts on others (McNiff, 2002). Critical educational research would be beneficial as a critique of the education system as it stands. Notions may be posed which could question why there is a need to change the curriculum, what is it within this system and ideology that maintains the status quo.

Critical educational research would establish in what ways the education system prohibits the development of individual freedoms and whether the new curriculum will offer a different approach. An action research approach here would assess how the researcher, through reviewing their own practice, could enhance or improve the learning experience for the participants involved. The findings may result in a change in practice for the researcher.

In this study the critical approach would add an awareness of the philosophy supporting the new curriculum (previously discussed in Chapter 3) and through its critical approach may serve to assist in the implementation of the new curriculum for the benefit of all young people or possibly establish “...*whether power is produced and reproduced through education...*” (Cohen *et al*, 2004). The aim would then be to transform the situation if that was found to be the case and to improve it for all involved. As young people in schools are subject to the demands of the curriculum, their parents, guardians and teachers they could be perceived in some ways as being disempowered. To establish whether the new curriculum could assist in challenging this would be a positive outcome of critical educational research.

This study however aimed to explore and interpret the parameters of the new curriculum and how a pedagogy could be a means of creating a transforming learning situation for participants. It was, as such, exploring and interpreting the individual response of participants to cooperative learning in relation to the four capacities. On a large scale this is important as it relates to the changes taking place in our education system and what impact that has on school development and teacher professionalism. Due to the need to attend to individual experience a critical educational research paradigm would not be able to provide all of that information here although it will be able to support this research.

4.7.1 Criticism of Critical Educational Research

Critical educational research is an evolving research methodology that aims to transform situations where it is found that a system, or particular practice, presents a disservice to those involved. This is difficult to disagree with as it is logical and constructive to wish to improve conditions for different groups in society and to redress any discrimination that may exist. It was important in this research, however, that the participants were given the opportunity to describe and explain the learning process as they experience it rather than

this coming from outside. It could be argued however that the claims from critical educational research may be stronger than the reality may prove to be (Cohen *et al*, 2004: 31) and no transformational change may be possible other than the large scale changes it is hoped *Curriculum for Excellence* might bring. The change this may require of teachers in relation to their current practice, however, brings issues relating to continuing professional development.

Action research methodologies have evolved from critical research paradigms as a means of giving a voice to various groups who may not have previously had the opportunity to contribute. In action research the voice of the practitioner is heard as they make a claim for additions to knowledge and use the process as a means of improving their practice for the greater good. An example of this would be to implement a new strategy in a classroom and to assess how effective it has been on a cyclical process. The researcher would then modify and develop their practice as a result of reflection (McNiff, 2002).

Critical educational research can also benefit from looking at the findings of interpretive and positivist approaches in research and should use some of this data to develop its own position. A further criticism of the critical paradigm is that “...*critical theory has a deliberative political agenda...*” whereas the researcher should be “...*dispassionate, disinterested and objective*” (Morrison in Cohen *et al*; 2004: 32). Although this presents a clear case of bias it would be argued that much of research already comes from the position of bias and it is important that this is always noted.

4.7.2 Action Research

Action research or practitioner research is a means by which professionals can reflect on the activities undertaken in the classroom to enhance the learning of pupils. Through this process of reflection change can also be made to practice. Cohen *et al* (2004: 226) state

“*Action research is a powerful tool for change and improvement at the local level.*” As this research was based on a case study school and aimed to review the possible benefits of a pedagogy in assisting the implementation of *Curriculum for Excellence* this was a very appropriate methodology here.

The aim of this research was to examine and explore the impact that cooperative learning could have in a school, and the perceptions of participants, with regard to what was successful for them. As previously noted McNiff (2002) has highlighted the extent to which knowledge is deemed to be held in the hands of external researchers on a hierarchy and the teacher in the classroom is perceived to be low in this scale. The notion that action research is a form of reflection undertaken by teachers challenges its validity. Anne Campbell *et al* (2004: 24) introduce the concept of ‘teacher researchers’. Some of the key ideas of this are described as being where teachers can reflect on practice and use this as a means of improving what is taking place in their classrooms, however comments such as “...*the imprecise nature of teacher research*” (ibid: 25) do not extend the view that this form of research has a high degree of validity.

Teachers in the role of researcher are regarded as requiring “...*robust processes of self-monitoring...*” (ibid) which suggests that teachers are not regarded as researchers nor as professional. Generalisations are made with respect to teachers’ potential difficulty in engaging with the theory underpinning their practice with teachers valuing “... ‘*craft knowledge*’ above the theories underpinning teaching practices” (ibid: 26). The notion that teachers who engage in research cannot acknowledge their bias or critically reflect on their classroom practice in relation to educational theory is incorrect.

This research project was undertaken in a rigorous manner having been passed through an ethics committee, including a pilot project and being supported by broad relevant reading

on the topic under investigation. In a similar way a rigorous approach to action research must produce valid findings.

McNiff (2002: 21) stresses that there are different theories in education and that amongst these there are “*E-theories and I-theories*”. Essentially the E-theories are the ones that come from outside of us through external language and the I-theories are internalised. Through the process of critical reflection individual researchers can come to understand their own internal theories that they can implement in their research and validity can be established from this. McNiff (ibid) would stress that these are evolving, individual and personal to the researcher. In this research there is great validity in all of the external (E-theories) that are available and the methodologies that can enhance this. The process and introduction of I-theory and learning in this study however potentially present a situation where a detailed understanding of how this pedagogy, and the learning taking place for the researcher, can benefit participants. The development of I-theories can be connected to the expertise gained from evidence based practice. Here a practitioner will develop their own I-theories within the broader perspective of E-theories. In this research an I-theory evolved that necessitated the implementation of an interpretive paradigm which was supported by evidence based action research.

The nature of this research required a unique approach. The research aimed to ensure validity, reliability and that all ethical considerations were taken into account and that this was a rigorous project. Although McNiff (2002) would state that it may not be necessary to include a literature review, this thesis does so as there is respect for the understanding and previous expertise already established in this area. This research project aimed to ensure the validity of arguments made and the rationale for any action within it. Reflection has been a feature of this research, however, the emerging I-theory is embedded within the current excellent research that has been conducted by others. The theoretical base

supporting this thesis is interpretive in approach while being undertaken by a reflective professional.

This is detailed research and all areas of bias have been disclosed as a challenge to any notion that this research may be less legitimate than research undertaken by someone who does not work in a school. McNiff (2002: 20) notes that this can be the case “...(*because ‘ordinary’ people are systematically taught to devalue their own contributions*), *their form of theory tends to be regarded as practical problem-solving rather than proper research.*”

I had a concern that, in some circles, there have been credibility issues with practitioner research such as that previously noted by Campbell *et al* (2004). It was hoped that the validity of this research, through the implementation of an interpretive paradigm, would be supported by methodologies that aimed to ensure rigour through triangulation. Key among my aims was the desire for this work to add to the current knowledge base and be accepted as legitimate theoretical based research.

The principles and philosophy of action research are empowering and have the potential to transform situations but there are limitations to this and there is a sound argument for a balanced approach in research that is inclusive and allows for the strengths of different methodologies to be included. As identified early in this section there was tension in this as the validity of traditional approaches to research were desired while embracing methodologies that are, or can be, transforming.

Cohen *et al* (2004) provide broad definitions of what action research is and they give several examples (ibid: 228) of where it is collaborative. This collaboration is identified as “...*everyone’s view is taken as a contribution to understanding the situation...*” and as “...*it involves those responsible for action in improving it*” (ibid: 229). Other key points

are identified by Cohen *et al* (ibid) such as starting with one person that may show changes and developments that may lead to broader changes. In this way action research can not only help an individual teacher's classroom practice but they also may, through their research, aid the professional development of others.

As action research can engage in various methodological approaches this allows for an interpretive approach to the research that can explore not only the researcher's critical reflections but the process and experience of the participants. When gathering data the various methodologies enable the action researcher to move beyond any negative connotations of a teacher doing research to a rigorous and demanding schedule that looks for validity and balance. As action research aims to evaluate practice with a view to improving it, this research hoped it would be able to assess whether the introduction of cooperative learning could add in a positive way to the tools of a classroom teacher.

Cohen *et al* (2004: 231) identify the notion that action research is split into two camps where one argues that action research can only be empowering if it is a collective process. The argument here is that individuals do not operate alone. However, this research is exploring that very notion. During the process of this research it was hoped that some indication of whether it was preferable to have large scale training rather than individual interest would become apparent. At the other extreme of action research as being collective, it is identified here as being, "... *'reflection-on-action' ... a hermeneutic activity of understanding and interpreting social situations with a view to improvement*" Grundy (cited in Cohen *et al*, 2004: 231).

With action research as a process McNiff (2002) gives several examples of possible models to support the research and offers her own developing strategies for completing action research projects. She identifies her practice as being "... *a spontaneous, self-*

recreating system of enquiry.... a systematic process of observe, describe, plan, act, reflect, evaluate, modify but...(not) sequential or necessarily rational” (ibid, 2002: 56). This is a process I as a researcher have already experienced in my day to day planning and organisation. I regard this process as one of flux and shifting ideas. Notions that I started this project with have evolved and with this so has the research. The balance of this learning has taken place within me (my I-theory) however this is reflected in my classroom practice and the developments that have taken place there. I have experienced reflection as an ongoing process and Cohen *et al* (2004: 239) state that reflection occurs “...at every stage of action research.”

As a result of the analysis of research paradigms I wished to explore the area further. The aim was to build on and enhance my learning with a blend of action research tools that linked comfortably within the interpretive paradigm. I was trying to establish evidence of whether there was a link between a learning experience and the new curriculum and whether this pedagogy was appropriate for broader training if found to be of benefit to young people. The outcomes of this research may lead to a larger action research project undertaken with colleagues who may wish to enhance, develop or add to their practice by increasing their toolkit.

4.8 Validity and Reliability

The validity and reliability of this research is found within the process and methodologies employed. Both are considered important in ensuring that this research could be replicated in a similar situation and to address any issues of credibility that have previously been discussed in relation to the role of teacher as researcher. Cohen *et al* (2004: 105) state that “*Validity is an important key to effective research.*” This thesis, as already noted, acknowledges any bias of my own and through a process that is ethical aims to remove any impact this bias may have.

As an individual involved in the situation where the research is taking place it was not possible to be totally objective but the aim was to balance this position by allowing the voices and opinions of participants to be heard. Participants, through the pilot study, have also informed the questionnaire in its final form.

In an effort to gain a rounded holistic understanding from the case study school triangulation was used when gathering data (Cohen *et al*: *ibid*). To ensure validity through triangulation different methodologies for collecting data have been used as this has been argued to be the most effective means of doing so “...*methodological triangulation is the one used most frequently and the one that possibly has the most to offer*” (*ibid*: 115). Through the use of questionnaires, tally sheets and interviews it was hoped that validity in this research had been established.

Every effort was made early in the research process to ensure that the sample, methods and research area were appropriate. During the data gathering, within the constraints of being the classroom teacher, objectivity was maintained in relation to responses from participants. When analysing the data all materials were included and there was no attempt to ignore data and use it “... *very selectively and unrepresentatively...*” (*ibid*: 177). The processes engaged in this research aimed to produce reliable responses and the possibility of replication over time in a similar situation.

The aims of the group interviews were to establish a dynamic where discussion on different areas was possible. The aim here was to make the participants the focus of the research rather than me. To ensure the reliability of the interview questions these were asked in the pilot study to assess whether the same understanding of the questions was evident before presenting these to the group interviews.

When questionnaire data was gathered this was done so within class time. Participants were offered the opportunity to take part which raised issues discussed in the ethics section. It was relatively straightforward for pupils to complete questionnaires once consent had been established.

An area of challenge was in establishing time to complete the tally sheets effectively. This was due to the demands of being the classroom teacher, responsible for managing the class and gathering data. In some classes this was easy to organise but not all classes permitted this. Again the constraints of a dual role are exposed. It was, however, possible to gather data in this way although it was more limited than I had hoped.

4.8.1 Ethics

In this research the predominant ethical consideration was that of working with young people. In my role as classroom teacher of the participants there was the potential impact that a power relationship may have had. During the research this factor had to be taken into account and had an impact on the manner in which I engaged with pupils and was able to establish a research population.

This research was validated by the University of Glasgow Ethics Committee and this process provided a framework that ensured all ethical considerations were taken into account. Informed consent was established after participants were given the opportunity to read the plain language statement about the research and decide whether to take part or decline the invitation.

The process of informed consent helped to relieve some of the tension and concern I experienced in relation to the participants as there was an understanding that individuals could withdraw at any time. Cohen *et al* (2004: 51) identify informed consent as being consent that “...*protects and respects the right of self-determination and places some of the responsibility on the participant should anything go wrong with the research.*” This gives the participants some ownership of what they are engaging in. One of the unforeseen benefits of the ethics process was to enhance an awareness of lifelong learning and promote this more effectively to young people.

Despite this there was concern about the ethics of involving young people as participants. My concern was that it was unfair of me to even ask pupils to take part as I felt I was asking pupils to ‘do me a favour’. The reason for this sense of asking for a favour was due to the nature of schools where pupils frequently complete questionnaires, without any consent required, and many did not see the point in completing one form to complete a questionnaire. This ethical challenge led me to question whether I had overcompensated and thus impacted on the number of participants.

The ethical dilemmas I experienced would not be a consideration to an external researcher and can be regarded as a particular challenge with practitioner research. An external researcher would have automatic validity with pupils in collecting information whereas the boundaries were more blurred in respect to my position. As a result of such ethical consideration, and my insistence that there was no need to take part, the numbers of participants are lower in some classes than was hoped for. In retrospect it must have appeared to the pupils that I was suggesting they really should not bother to take part. To compensate for this the research was expanded to other class groups to ensure a broad representational sample was established.

Issues around anonymity in the sample were important. Again ethically, particularly when dealing with minors, it is important to ensure they are not exposed in any way. To ensure pupil trust participants were identified only by a number and all data securely stored.

There was no sense in anything unacceptable and “*At all times, the welfare of subjects...*” (Cohen *et al*, 2004: 58) was considered and paramount.

No participant withdrew from the research and many of those who were involved have enquired about the progress of the research and even asked ‘*when can we do it again?*’ This reflects the fact that pupil participants felt their views were heard and valued in the process. Pupils were aware of the value their contributions had in this research. Staff participants identified the group interview as the best CPD they had experienced in a long time. Thus the reflection this provided to staff was positive and supports the need for teaching staff to work together.

The issue of accessibility to the participants was not a challenge to this research. As the teacher of the pupils participating this presents no difficulty and all appropriate consent was been granted by the relevant school and Local Authorities. Access to the adults who were participating in the research was at a time convenient to them. This research was not ethically sensitive in nature as the study was aiming to establish views and opinions about a pedagogy and the actual practical application of this.

In educational research some teachers have been left feeling betrayed by colleagues, particularly when action research methodologies have been employed (Cohen *et al*, 2004), where individuals have felt they have not been portrayed in a manner that reflected their experience of the situation. To avoid any such concern participants in group interviews were given a transcript to review following the interview to confirm the discussion that

took place. The aim of this research was not to identify teachers as a positive or negative influence on young people and thus no teacher should feel betrayed by this research.

I was further aware of my indebtedness (ibid, 2004) to the participants taking part as without their contributions this research would not have been possible. It was hoped that participants would benefit from the interactions that took place through the opportunity to explore and develop their own practice. As previously noted, feedback from participants identified this as a strength.

In this research the anonymity of all participants has been preserved. All participants were referred to by an ID number in the case study school and the identity of Local Authorities was removed. No participant will be identifiable in this thesis and participants have been informed of this. The purpose of this research was fully explained to the participants and there was no deception within it. The planning before the research was underway and sensitivity to participants during the research should serve to validate the reliability of the data.

4.9 Conclusion

The research methods undertaken in this research aimed for a rigorous approach that acknowledged my position as a practitioner. To conduct research in schools is very complex and this is reflected in the dual approach undertaken. This research has broadly engaged with an interpretive paradigm and has strengthened its validity through the inclusion of qualitative and quantitative data gathering techniques. My position as teacher provides a further layer of complexity and has resulted in this being an interpretive study completed by a practitioner thus embracing the philosophy of action research.

This thesis will now analyse the data gathered in this research project and attempt to establish in what ways, if any, cooperative learning has been perceived by the participants to support the four capacities of *Curriculum for Excellence*.

Chapter 5 Research Data and Analysis

This chapter will explore the results of the research data gathered. The methodology for this research was explained in Chapter 4 and in this chapter the focus is on analysing and summarising the key findings. The findings of this research will provide an indication of what this means for learning and teaching.

5.1 Context

Scotland is divided into 32 Local Authorities and this research was carried out in two of these. Each Authority has financial responsibility for spending in relation to education and in supporting the training of teaching staff. Local Authorities can make decisions they believe are relevant to their needs. The case study school is located in Local Authority 1 and this is the school in which I teach. Local Authority 2 was selected for this research as this Authority is actively engaged in offering training to all staff in cooperative learning. Local Authority 2 is where the Development Officer for cooperative learning, who took part in this research, is based.

5.1.1 Local Authority 1

In Local Authority 1 (LA1) the approach to learning and teaching includes the promotion of active learning strategies, the use of formative assessment and thinking skills activities in the classroom. LA1 provides web pages on its intranet for staff that include various excellent ideas and strategies for developing active learning within the classroom.

Included in this is the promotion of Gardner's (1993) multiple intelligences, aspects of thinking skills activities and suggestions on questioning techniques as developed through formative assessment. Some cooperative learning strategies are included with a page supporting the need to develop social skills in young people. All of these are excellent,

however, on the website, there is no overall strategy for implementation. The pedagogies and strategies outlined within it are valuable, however, the philosophy supporting pedagogies such as cooperative learning are not explicit nor is the full potential of such pedagogies for improving learning.

This Authority promotes the use of critical skills techniques and collaborative work in teams, but it does not currently offer formal training in cooperative learning and does not address the philosophy supporting this pedagogy. A philosophy which it has been argued is essential to ensure effective implementation (Johnson & Johnson, 1994; Currie, 2007). Having been exposed to this website and to full training in cooperative learning, I would agree that to effectively implement structured team activities and individual accountability, it is necessary to have full training. Benefits can be gained from this site but the true power of what cooperative learning has to offer is not evident.

5.1.2 Local Authority 2

Local Authority 2 (LA2) has embraced the philosophy of cooperative learning and offered full training to all staff in this pedagogy where requested. LA2 have six Development Officers in place at all times who act as trainers, supporters and guides for staff implementing cooperative learning in their classrooms. The Development Officers are on a 23 month secondment from their classroom positions and this ensures motivated individuals are always involved in training. This could however result in variations in support due to staff changes and the possible notion that cooperative learning is a temporary measure just like the Development Officers' positions (Currie, 2007). On the other hand, the capacity built through the return of the Development Officers to school must have a positive impact with the reintroduction of such skilled individuals.

In conjunction with the training there is a well established support network. Through this network all staff are kept up to date with regular newsletters. Staff can also access an intranet site which allows them to engage with others. An inclusive and supportive network has been established and the effectiveness of each element of this is under constant review (Development Officer - LA2 1st April 2008 - Interview).

As early as 1998 LA2 invested in this pedagogy following their own research into the impact it had in Canada in an Authority which experienced similar challenges to those in LA2 such as economic deprivation, low attainment levels and engagement. The Canadian Authority had won an award for 'improving the life chances of teachers and pupils' by turning around its results significantly through the implementation of cooperative learning. The pedagogy was identified by LA2 as a means of developing their own pupils and the training for staff has been ongoing for a number of years now. LA2 is now being 'bought in' by other Local Authorities (14 as of October 2008) in Scotland to develop their staff. This means that other Local Authorities have identified the value of cooperative learning and training is being delivered by Local Authority 2. If this is the case, it reflects an understanding of the value of broad training within LA2.

The literature review in Chapter 2 has shown the impact cooperative learning strategies have had in various studies. It has also attempted to show where the literature suggests that cooperative learning can support the four capacities of *Curriculum for Excellence*. The research data gathered in relation to this, in this thesis, will now be explored.

Table 5 - Timescales for gathering research data

<u>Participants</u>	<u>Ethical approval granted</u>	<u>Pilot</u>	<u>Data Collection</u>
Pupils LA1	14 th February 2008	15 th February 2008	1 st March – 31 st May 2008
Teacher LA1	14 th February 2008	20 th February 2008	6 th May 2008
Development Officer LA2	14 th February 2008	No pilot *	1 st April 2008

*please see comments below

5.2 Pilot

The data was gathered over a four month period between February and May 2008. The pilot of the various research instruments was conducted with ten 5th year pupils during the early part of February 2008 and two teachers.

5.2.1 Pupil Questionnaire

Pupil participants completed the draft questionnaire and the results of this were used to identify emerging themes from the open ended questions. As a result of the pilot the original questionnaire was modified. The updated version of the questionnaire was coded and responses used to form multiple choice answers (Appendix 1). From reading the initial pilot results it was decided to identify gender and stage of schooling to build up a demographic profile.

In the modified questionnaire adjustments were necessary as there were contradictory responses from pupils. For example, three pupils identified their preferred way of learning as being teacher led in an early question and then in an open ended question stated their preferred learning style was an interactive one with their peers as it provided them with the opportunity to build their confidence, listen to the opinions of others and develop independence. This suggested that the questionnaire was not clear and headings were put in each section to assist this. Questions were formulaic to ensure the different options in answers included the use of positive and negative questions (both for and against

cooperative learning) for balance. Pupils were not being led to particular responses, and support for and against cooperative learning was acknowledged.

5.2.2 Questionnaire Design

The questionnaire was designed in sections with a heading to focus the participants on the areas being researched. Before Question 11 (Appendix 1) participants were advised they were now answering specifically about cooperative learning to try and establish whether any awareness existed of different learning and teaching approaches. The aim of this was to clarify and assess whether pupils regard all activities as group work or actually differentiate cooperative learning activities. The two questions following this new question refer to cooperative learning and this helped to focus participants and extract their perceptions of their experience.

5.2.3 Group Interview Questions

The group interview questions for the pupil participants were straightforward and not subject to any changes (Appendix 2). The responses given did not indicate that change was necessary to the interview questions, the responses were varied and displayed a variety of perceptions. Due to impracticalities in the school time table and demands on pupils it was not possible to conduct this part of the pilot as a discussion group and pupils were given the opportunity to respond to the questions privately, with time for reflection.

5.2.4 Teacher Group Interview LA1

As with the group interview for the pupils it was not possible to conduct a group interview (Appendix 3) for the pilot with members of staff. The demands on teacher time made it inappropriate to request time for two interviews. The participants in the pilot were invited to read through and reflect on the questions that were prepared for the teacher group

interview. The responses obtained were detailed and thoughtful and no further clarification was required. The participants in the research group were provided with the questions prior to the interview to provide the opportunity to engage with the questions and reflect on them.

5.2.5 Development Officer LA2

The interview questions for LA2 could not be piloted* (Appendix 4). The questions that were used were relevant to LA2 and it was inappropriate and unproductive to pilot these questions with any teacher in LA1 given the focus of the interview. With respect to this the questions were reviewed again prior to the interview and were forwarded to the Development Officer before the interview took place.

5.2.6 Tally Sheets

The final area of the pilot relates to the tally sheets (Appendix 5) used to gauge the action taking place during cooperative learning activities in the classroom with participating pupils. The aim was to use the tally sheets for one minute intervals with participants to assess how they engage with some features of the four capacities of *Curriculum for Excellence*. This worked well with the pilot group, and although it was found that not all of the criteria on the sheets could be viewed in every period, a sense of where cooperative learning did support the four capacities was evident. This was more of a challenge to complete during the formal data gathering period however due to my dual role of teacher and researcher.

5.3 The Sample

In the case study school in LA1 the opportunity to take part in the research was offered to all pupils taught in Geography in S1-S4. In S1 this totalled 58 pupils, in S2 130, although of these pupils 78 were only taught for half of the possible time due to timetable constraints, the S3 class of 24 and the two S4 classes totalling 44 pupils.

The completion of questionnaires was hampered by my ethical considerations and concern, as already noted, and as a result I over compensated in stating to pupils that “*there is no problem, you don’t need to do this, only if you wish...*” and unfortunately a large potential population of pupils decided they did not wish to take home a consent form.

Pupils asked why they needed to fill out a consent form when they already answered questionnaires in school regularly without having to do this. This raises questions about how information is gathered in schools in an ethical and practical sense and whether there may be other means of doing so.

Asking pupils to take part was made more complex by my role of teacher researcher, by explaining to the pupils this was for a degree thesis that I was completing there was a sense that I was asking pupils to do me a favour, this did not sit comfortably with me. As a result there were not as many questionnaires completed as was hoped and this further had an impact on the number of tally sheets that could be completed during the data gathering period.

There were 44 participants in total.

The number of participants in each year groups was:

S1 -	6 participants of 58	= 10.34%
S2 -	16 participants of 130	= 12.31%
S3 -	7 participants of 24	= 29.17%
S4 -	15 participants of 48	= 31.25%

In each case, despite the sample being small there was over a 10% participation level and almost 30% in S3 with over that in S4 so this can be viewed as a representative sample within the school of those exposed to cooperative learning pedagogies.

In this breakdown the gender balance was 17 boys and 27 girls with the following split:

S1 – 4 girls and 2 boys
S2 – 11 girls and 5 boys
S3 – 5 girls and 2 boys
S4 – 7 girls and 8 boys

In relation to there being a greater number of boys than girls in S4, compared to every other year group (where there were more girls), this could be due to the larger complement of boys in the sections.

When reviewing the analysis of the questionnaires it is worth noting that some pupils did not follow the guide on the questions and may have given multiple choices for some answers. This has been accounted for in the analysis and multiple answers have been entered as a category on SPSS (Statistical Package for the Social Subjects).

The data from the pupils who have given multiple answers was analysed in conjunction with other data and this is explicit in the analysis. A further issue with the questionnaires was that some pupils seem unaware of how to complete them. The degree of time taken by pupils to complete the questionnaire varied but each must still be regarded as valid.

There was a sense that pupils could be very automated and may need guidance in how to complete the questionnaire or to have the detail explained in depth to them, but that may have changed the answers given and indeed could have been construed as leading pupils. As such no guidance, other than the instructions written on the questionnaires, was given to pupils regarding their completion. Although not possible to explore here, completing

consent forms prior to the questionnaire may have produced a more serious approach to the task for some pupils.

The six interviews for this research added depth to the analysis. The interviews used “*standardised open-ended questions*” (Cohen *et al*, 2004: 271) in order to be systematic, but also to allow participants to explore areas they regarded as relevant. The interview with the Development Officer for LA2 (Appendix 4) was completed at a time and place of their convenience and the group interview for teachers in Local Authority 1 (Appendix 3) took place during an in-service training day at the Case Study school.

Group interviews took place with each year from S1-S4 (Appendix 2) in April and May 2008. The rationale was to enhance the material obtained from the questionnaires and to give pupils the opportunity to add any information they thought relevant. This enabled pupils to talk with peers and gave each participant in the interview groups the opportunity to raise any issues. All interviews involving pupils took place during the school day with the consent of class teachers. All interviews were recorded and transcribed personally. The selection of participants in group interviews was through offering the opportunity to all and then, if groups were too large, selecting through ‘names from the hat’. The number of pupils wanting to take part was manageable with the exception of S4 where pupils were selected in this way.

Gathering data from the tally sheets (Appendix 5) proved to be problematic and the sample from class lessons is relatively limited. This highlights issues of teacher as researcher as gathering data at one minute intervals from participating pupils would often be interrupted by the needs of other pupils. To undertake this form of data gathering more effectively one would need to be a visiting researcher who observed only. As the teacher of all pupils in

the classroom, it was at times incredibly difficult to gather data due to the demands of the classroom.

A total of 11 tally sheets were fully completed in observed lessons which amounted to 78 separate timed observations of pupils. The data gathered does, however, provide some understanding of what interactions taking place in the classroom and this was used to add a further dimension to the research. Some pupils have been observed more than others in the tally sheets and this reflected the management and support issues of different classes. In classes with high levels of need and support there are fewer tally sheets available.

5.4 Findings and Analysis

The research questions to be addressed in this analysis aim to establish whether cooperative learning can support individuals in the development of the four capacities of *Curriculum for Excellence*.

The key findings from the data show that most pupils in this sample support the use of cooperative learning in the classroom whereas teachers are less positive about active learning. Pupils stressed that they liked to work together, have class discussions and work in teams. The teachers in LA1 could see the value of interactive activities but were concerned that behaviour could be an issue and that some pupils were not being given the opportunity to be independent learners. For the teachers from LA1 no teacher was using cooperative learning in their classroom although interactive lessons were a feature. As a contrast to this, the Development Officer in LA2 was able to identify the positive impact teachers in that Authority had stressed cooperative learning had provided. The findings are presented as a composite analysis that blends the views of all participants. This allowed the different voices and opinions to be heard. As this research is within the interpretive paradigm all opinions and experiences are relevant.

The research data gathered follows an interpretive paradigm and includes evidence established through qualitative and quantitative methods. Data in this research has been gathered from questionnaires, tally sheets and interviews. The tally sheets are presented at the end of this analysis. The rationale for using a composite approach to the analysis is that all views can be represented and analysed together.

The nature of schools and classrooms, where interaction is paramount, supports the use of research questions that are within the interpretive paradigm. The research questions aim to tease out the positive and negative perceptions relating to the impact of cooperative learning in the classroom. The key research questions addressed were, as noted from Chapter 1, page 8:

What are the perceptions of teachers and pupils in relation to the ability of cooperative learning strategies to:
• develop confident individuals?
• develop responsible citizens?
• develop effective contributors?
• develop successful learners?

5.5 Confident Individuals

Confidence is a quality that enables individuals to participate fully and comfortably with the challenges life presents. The literature review identified a wide range of studies that have shown the positive impact that cooperative learning can have on confidence (Clark, 1988; Craigen & Ward, 2006 & 2008; Johnson & Johnson, 1994; Jules, 1992 and Slavin, 1984). This study will now look at the impact cooperative learning was perceived to have by the participants.

This research aimed solely to establish the confidence pupils' experienced as a result of cooperative learning activities, however, through this process another confidence issue was raised. It appeared that teachers had different levels of confidence when implementing active learning. In LA2 the introduction of cooperative learning is broad, and although not all teachers are willing to take part those that have, maintain a positive approach to the pedagogy (Currie, 2007). An interesting point here was the Development Officer in LA2 noted that the degree of confidence that teachers' experienced in delivering cooperative learning varied widely with cooperative learning being more broadly introduced in the primary sector. This may in part be due to the familiarity with more active learning at this stage but was also due to the concern of teaching social skills in lessons. Initially teachers can be reticent to include this for a number of reasons. These include:

“... secondary teachers have this thing about I'm teaching my subject, I don't have the time, it's not my job ... Certainly during the academy it's fairly easy to convince them and talk them round about this”* (Development Officer - LA2 01/04/08 - Interview)

(*The academy is the name given to the training provided by LA2 in cooperative learning).

In LA1 the issue of social skills was also raised in the group interview. No teacher in the Case Study school was actively involved in cooperative learning lessons although a number were engaging with critical skills techniques in their classroom. Critical skills techniques include *“... experiential learning cycles”* that *“aim to engage pupils in collaborative, complex problem-solving”* and that learners should *“... construct individual meaning from their experiences”* (Critical Skills Programme, online). This is active learning and there are links between these approaches however cooperative learning aims to fully engage all learners, by ensuring full inclusion in tasks and individual accountability. Cooperative learning is highly structured and social skills are always taught.

In the group interview there was genuine surprise from one teacher that social skills would be taught, although some had formally included social skills at the start of their courses. No teacher routinely included explicit social skills teaching, however, one teacher did stress “*We are doing it indirectly ...*” (Teacher - LA1 06/05/08 – Group interview) through the manners and general classroom interaction that takes place. Another teacher, having implemented social skills teaching using the methods of Johnson and Johnson (1992), stated:

“I must say that is something that I underestimated how much you would need to, I’d just assumed they would know how to you know, not be unpleasant to each other but it is something you need to keep reinforcing” (Teacher - *ibid*).

What was apparent from this, was that, as teachers we often assume that young people can engage in an appropriate manner and therefore can be trusted to work together, or, we take an alternative stand and stress that some pupils can be so awkward that there can be no opportunity to work together. On being asked whether the teaching of social skills could help one teacher responded:

“Yes I think that would help but if I think sometimes that pupils are going to be picked on its not because the people who are picking on them don’t know how to behave, it can be because they are choosing to be nasty to them ...” (*ibid*).

This was a concern that other teachers in the group voiced, that some pupils could not be trusted to work together. The confidence that teachers have in interactive lessons can be seriously hampered by the behaviour of some of our young people and this must be taken into consideration. In this study the pupil participants who have been exposed to social skills teaching during their cooperative learning lessons are significantly more positive about interactive learning than the teachers in LA1.

The responses from LA2 alone would suggest that teachers can be persuaded of the benefit of teaching social skills and have the confidence to do so with the opportunity and exposure to the relevant training themselves. The Development Officer in LA2 identified

this as an issue that many teachers would bring up, but with evidence and training most teachers could be persuaded of the benefit this would bring.

As teachers become confident teaching social skills the impact this can have on learning in the classroom is significant. Pell *et al* (2007) identified cooperative learning as a solution to lack of learning in poorly behaved pupils.

5.6 Confident Individuals – Pupils

Confidence can be an issue for all individuals when asked to undertake new challenges and ways of being and doing. The question that now needs to be explored is whether pupils feel more confident through their involvement in cooperative learning activities? This section of the analysis is supported by the data gathered from the questionnaires and the comments from all interviews. The data gathered from questionnaires has been analysed with the assistance of a statistical package.

The descriptive statistics here have been produced through the software package SPSS (Statistical Package for the Social Subjects). The aim of using this package was to ensure that the quantitative data that has been gathered through the questionnaires can be analysed efficiently and presented in an accurate graphical representation (Mujis, 2004).

The first research question aimed to establish whether cooperative learning could help to develop confident individuals from the perception of teachers and pupils. The Development Officer in Local Authority 2 states that:

“... pupils start to feel more confident, more relaxed about even getting in the room, never mind getting up to say something” (Development Officer - LA2 01/04/08 - Interview).

The responses from teachers in the case study school in LA1 were more mixed. This appears to relate to the importance of fully implementing cooperative learning strategies

including social skills teaching. Comments that group learning does not benefit all participants may be valid but this is in relation to more traditional group work, or even critical skills and, is identified as a flaw in traditional group work in schools by Johnson & Johnson (1994). Reflected in the comments below is the downside that traditional group work, without consistent social skills teaching, can engender,

“...confident individuals for some pupils very much so, for other pupils I’m sure it makes life more difficult... Other pupils are confident already that’s not their bag...”, and

“The shy ones or the ones that are getting bullied no matter how vigilant you feel you are being it can just be terrible” (Teacher - LA1 06/05/08 – Group interview).

Both comments, from different teachers, suggest that confidence may not be aided by group learning, or it is not appropriate for some as they are already very confident.

However, the pupil perception of how confidence can be enhanced, working in cooperative learning groups, is radically different from that of the teachers in LA1. This resonates with the interview with the Development Officer in LA2 who insisted that pupils were more confident through the process. Again, the difference between some traditional group work practices and those engaged in working together through cooperative learning are evident.

Table 5.1 below gives a breakdown of the responses to the statement ‘I feel confident in class’. In this sample only 6.8% of pupils (3) said they felt confident when questioned by the teacher in the classroom, a frequently used practice in classrooms employing traditional teaching methodologies or used as a means of assessing pupil understanding. Black *et al* (2002) who advocate ‘no hands up’ and ‘thinking time’ to enable young people to collect their thoughts would argue that this would give pupils time to be confident with their answers in such a situation. What is interesting is the number of young people from the sample who say they feel confident when they can discuss their ideas with other members of their group (65.9% - 29 pupils) which is in sharp contrast to the perception of the teachers in LA1.

Table 5.1

I feel confident in class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The teacher asks me questions	3	6.8	6.8	6.8
	I work on my own	11	25.0	25.0	31.8
	I can discuss my ideas with others in my group	29	65.9	65.9	97.7
	More than one answer given	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

Chart 5.1

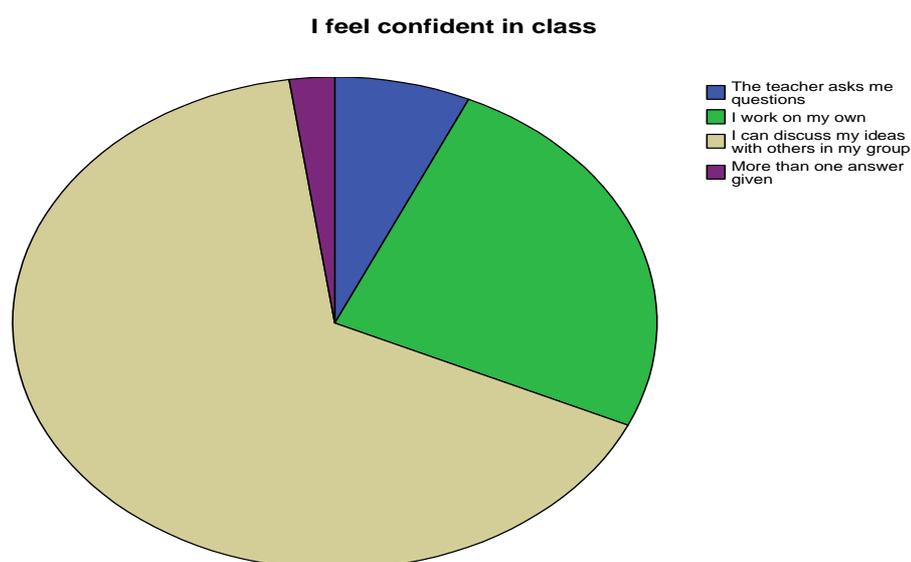


Chart 5.1 above, which gives a very clear picture of the majority of pupils' responses, can be further supported by the evidence from the pupils' group interviews. In relation to the benefits this pedagogy had brought to one S3 pupil when asked to speak to the class they stated:

“The more you talk in the groups the more you get used tae [sic] talking to other people so you feel that confident that you want to talk to other people outside your group... like in English I had my solo talk thing and it kind of builds up confidence to just go out and talk instead of hiding away like you don't really want to dae [sic] this, it just feels normal after talking in groups tae [sic] people” (S3 pupil – LA1 21/04/08 – Group interview).

In S1 a pupil said working in groups gave them “...good confidence...” and another that it helped to “...raise our confidence when it actually comes to maybe doing a class discussion” (S1pupil – LA1 04/04/08 – Group interview).

In S2 the ability to share ideas and answers were highlighted:

“You don’t feel as if it’s just yourself and you can share like what you’re thinking so you feel confident in the group” and,
“You feel like if you mess up they will sort it”, and
“...even if it’s not right then you have added something to it and then you don’t feel as though it’s you who is getting the pure stupid answer”(S2 pupils – LA1 24/04/08 – Group interview).

In the S4 interviews again there was a definite sense that cooperative learning helped support and develop individual confidence as one pupil stated:

“...your no [sic] put on the spot like a teacher asks some answer and you don’t know it and you feel everybody’s looking at me and I don’t know the answer”, and
“... if you get it wrong it’s pure embarrassing” (S4 pupil – LA1 02/04/08 – Group interview).

Other areas that were identified as benefitting individual confidence included the extra information and ideas that could be gathered from others in the groups, some said they felt confident being given the opportunity to help explain to another pupil, that the group would sort things out if you got the answer wrong thereby supporting individuals in their learning and saving on any embarrassment from making mistakes to the whole class. In the interviews it was identified as giving individuals an opportunity to explore their own ideas with others in their groups.

As a balance for this participants were given a similar statement regarding when they lacked confidence and this showed 11.5% (5 pupils) of the sample stating that they lacked confidence when talking in groups although this was not backed up with the interview data. It could be that pupils misread statements or that some pupils did feel negative as classroom teachers had suggested in their group interview.

In retrospect possibly more input and organisation is required from the classroom teacher to ensure pupils are fully engaged in cooperative learning when the classroom learning requires this. Again, there is the question of whether they were relating this directly to the activities they had taken part in the Geography class or whether there were still unresolved

issues from a different class with group arrangements. If it is the former there are issues around seating pupils appropriately and maintaining the need for social skills teaching.

Another noteworthy piece of data from this is that 40.9% of pupils (15) stated they did not like being asked questions by the teacher and a further 22.7% (10) did not feel confident when asked to complete tasks on their own. This may not be around traditional pedagogies but may involve issues around appropriately differentiated tasks which should be considered as this may have an impact on a pupil's confidence in learning.

The areas that have been identified as challenging for pupils are predominantly being questioned by the teacher and completing tasks independently. Given that these are the traditional methods employed in our classrooms for the majority of time they can be seen as not enhancing self confidence for most of our pupils in contrast to the positive response that working and cooperating together has been shown in this research to provide.

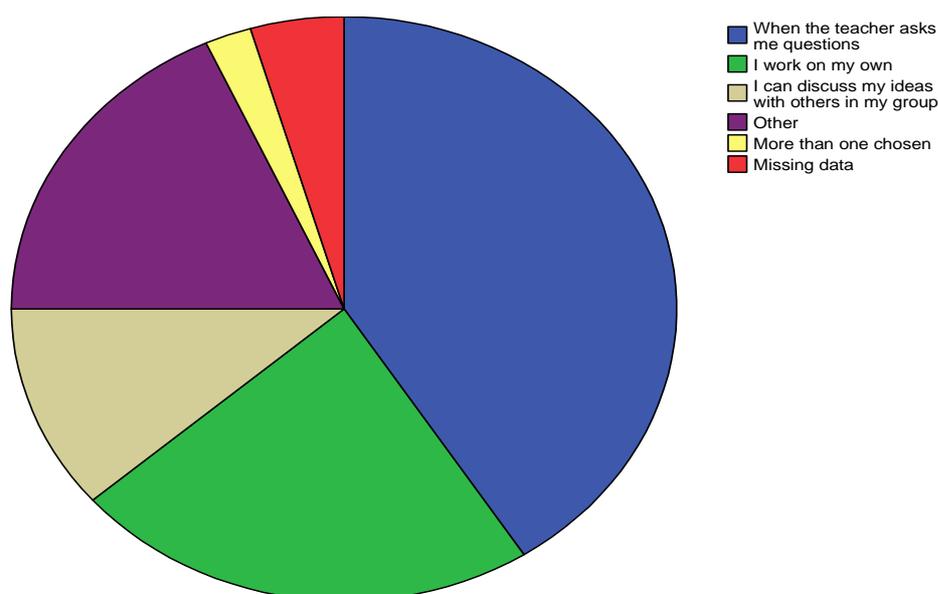
Independent learning is an important skill in the classroom and pupils need the confidence to do this well. At times whole class teaching may be appropriate, but to reach all pupils alternative pedagogies must be used. Cooperative learning has been shown here to positively support building confidence in young people and through this learning.

Table 5.2

I lack confidence in class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	When the teacher asks me questions	18	40.9	40.9	40.9
	I work on my own	10	22.7	22.7	63.6
	I can discuss my ideas with others in my group	5	11.4	11.4	75.0
	Other	8	18.2	18.2	93.2
	More than one chosen	1	2.3	2.3	95.5
	Missing data	2	4.5	4.5	100.0
	Total	44	100.0	100.0	

Chart 5.2

I lack confidence in class

In Chart 5.2 above 18.2% of pupils (8) gave other reasons for their lack of confidence.

Two of the pupils (5%) referred to the poor behaviour of some pupils. One pupil wrote, on their questionnaire, they lacked confidence when “... *working with constantly disruptive pupils*” and another when “... *the neds are in class*”. It is true that unruly pupils cause significant amounts of disruption in schools and classes. Pupils can be grouped together which is a challenge not only for the teacher but obviously for the learning of other pupils. This is an area that requires further detailed examination that there is not the scope to address here. What is heartening within this is that these were the only negative comments

in this respect. What both comments do suggest is that pupils would prefer their peers to act with responsibility and a level of interaction that enables learning. As a means of addressing this social skills teaching should start to raise awareness of what is appropriate in the classroom. Schools could then hopefully move towards a situation similar to that in LA2 where, it has been noted, social skills teaching has been spilling positively into other situations.

In the interviews no participant stated that cooperative learning activities had a negative impact on their confidence. The group interviews did include the two pupils above who stated they lacked confidence when working with unruly pupils and this was not raised at that stage. To link again to the teachers' perception of this in LA1 there is a clear difference to be seen between cooperative learning with social skills explicitly taught in lessons and traditional group work or critical skills techniques that do not incorporate social skills teaching. The pupils felt that their confidence was enhanced by this process and they did not identify issues of distress or bullying in their groups during this study.

The perception by pupils is that cooperative learning activities, reflected through the evidence gathered in the interviews and questionnaires, can support them in developing as confident individuals. The perception of this with teachers involved in cooperative learning in LA2 would appear to agree with that. In LA1 however there is reticence among teachers as to the effectiveness of group learning in building confident individuals. It is important to maintain the focus at this point that teachers in the case study school were not engaging with the cooperative learning philosophy. This form of training has so far not been made easily available to staff. There may also be a desire by teachers to maintain the status quo and it could be that teachers view cooperative learning as another trend in education that may pass in time, irrespective of current educational philosophies.

5.7 Responsible Citizens

The aim of *Curriculum for Excellence* to produce responsible citizens centres on the need to ensure all are able to participate in a civil society and to display citizenship. The ability to treat one another with respect should be evident. The aim of producing active citizens, one would hope, could be supported by modelling such behaviour in a classroom. To support this aim our young people and indeed our teachers need to be able to exhibit the attitudes and behaviours that are responsible and inclusive in a classroom. The teaching of social skills has already been discussed in relation to teacher confidence but the effect of teaching social skills brings with it a sense of responsibility to peers where each individual is forced to consider taking turns, listening to alternative viewpoints, listening and speaking with care and ensuring that all group members are encouraged to take part. Each of these is an indication of individual responsibility.

In LA2 the Development Officer not only identified the broader strengths of teaching social skills but stated that there were reports that the skills were being transferred elsewhere leading to more responsible behaviour.

“Some teachers report that the skills are starting to be transferred into other areas for instance the playground or when they are being taken out” (Development Officer – LA2 01/04/08 - Interview).

It was stressed that working together and thinking through the process of completing tasks in a cooperative manner meant pupils were becoming more responsible.

“As soon as you are getting involved and thinking how groups and teams work you must be getting more responsibility, whether it is your role within the group, feelings and being aware of how other people are” (ibid).

There is an awareness of a developing sensitivity amongst the young people, who are aware of different views and beliefs. This is an area that the new curriculum hopes to develop where pupils are able to see their own actions in a broader context and appreciate the needs of different cultures and beliefs. In today’s society it is essential that young

people can interact with a variety of different groups, and the topics pupils are exposed to in the Geography classroom enhance this. They also create an understanding of Scotland's place in the world. Not every school subject can adhere to this in the same way however, and the use of cooperative learning techniques in LA2 across subject areas has been seen to enhance responsibility.

In LA1 when the group were asked whether they thought cooperative learning could help to develop responsible citizens, the responses were tentatively positive with,

“I think it kind of ticks all the boxes” and *“If it's done well”* (Teacher - LA1 06/05/08 – Group interview).

These were the only references made directly to responsible citizens by the teachers. In later discussion however one department in particular stressed that some pupils were slow to start activities and thus take responsibility for their own learning. They were described as wanting the teacher to do the work for them. More than one teacher also raised the point that there were serious time limitations in some courses that did not lend themselves well to cooperative learning strategies. As far as being responsible for their own learning one teacher stated:

“I agree that I think it does tick a lot of the boxes and I wish we could do more given all the constraints we are under ... but ... the bottom line is that there comes a point where the individual has to sit with a pen and write an essay” (ibid).

The concern here is that giving too much time over to interactive lessons may prohibit pupils from gaining the skills that are required for successful independent learning. It is necessary that pupils are seen to be responsible at many levels. In group tasks however the ability to work together, fully participate and gain experience from others, may aid the process of writing independently. This is because ideas have been discussed and shared, and therefore hopefully have made the individual more confident in their task as they will already have had the opportunity to participate.

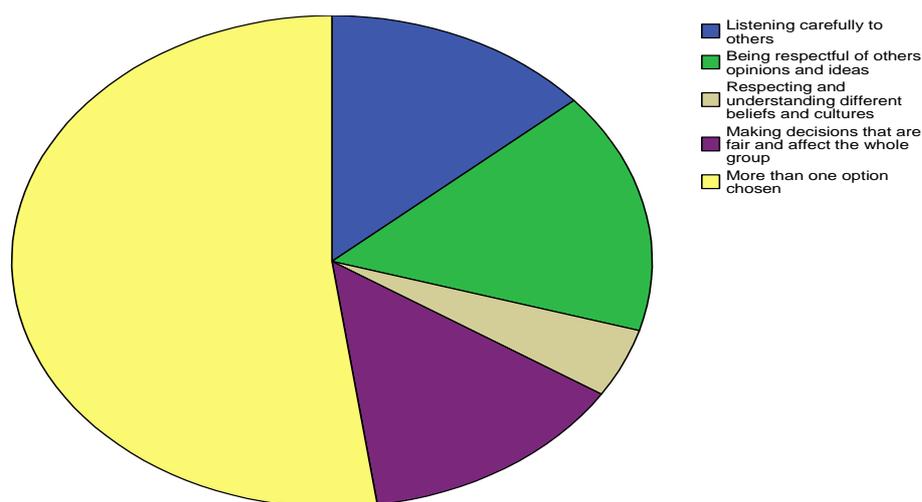
Table 5.3

I show responsibility in my class by

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Listening carefully to others	6	13.6	13.6	13.6
Being respectful of others opinions and ideas	7	15.9	15.9	29.5
Respecting and understanding different beliefs and cultures	2	4.5	4.5	34.1
Making decisions that are fair and affect the whole group	6	13.6	13.6	47.7
More than one option chosen	23	52.3	52.3	100.0
Total	44	100.0	100.0	

Chart 5.3

I show responsibility in my class by



Among the pupils that chose more than one option in this question there is a sense of personal pride by the pupils in that they could see themselves in relation to others, and in their own actions, in a positive light. Of the participants 52.3% of the sample (23 pupils) made more than one choice. Within this group 70% (16 pupils) stated they listened carefully to others, 87% (20 pupils) who identified themselves as being respectful to other's opinions and ideas, 52% (12 pupils) who identified their ability to respect and understand different cultures and beliefs and 35% (8 pupils) who said they could make

decisions that were fair and affected the whole group. The pupils' perception is one where they are showing how they can and are being responsible in relation to other pupils.

In the group interviews with pupils similar themes were identified. In the S4 interview, pupils, through their comments were able to display their own sense of responsibility (or not). One S4 pupil said she was not good at group work because:

"I don't think I contribute well with teamwork cause I tend to try and get my point across a lot more than others and I tend to argue my point so I don't really like group work a lot" (S4 pupil - LA1 02/04/08 – Group interview).

This shows an awareness at least of areas that a pupil can develop but other pupils in the group were able to show how they could be responsible in that situation. Again another pupil stated concern that some pupils were taking too much responsibility.

"There is normally somebody who takes more responsibility but when you are in the exam there is no gonna [sic] be someone else there to help you" (ibid).

This is a similar concern that some teachers identify but again this is contradicted by the comments of the same pupil who stated:

"... you learn better because you are getting to see what other people would put down for an answer ..." (ibid)

and again the responsibility of some pupils in this group when they were asked what they could do about someone taking more responsibility stated.

"You could ask people what they think and what you have said like if they agree with it and if not why, have they got other ideas?" (ibid)

This pupil is able to relate their actions in relation to others and show a degree of responsibility that ensures inclusion in the group and reflects many of the answers that were given in the questionnaires in relation to gathering more ideas and potential answers.

In the S3 interviews pupils identified a number of areas where they felt responsible to other group members:

"It actually makes you feel as if you are part of a group as if you are working towards something, no just writing it down in a book" and *"... cause you've got to find out what you're looking for and then you've got to report back and tell them what you're doing so if you don't research it you can't tell them what they need to know for their section"* (S3 pupil – LA1 21/04/08 – Group interview).

The S2 interviews were interesting as they included a number of pupils from the more able sections who may have been more used to, and happy with, the competitive nature of their normal classroom setting. There were learners in this group who engaged with their learning independently and as the ‘top class’ were often together and subject to learning approaches that supported competition.

Independent learning is an important skill, particularly when mastery has to be shown, but getting to that point can be supported and enhanced by cooperative learning. For many of the pupils, cooperative learning was not the norm. For some this was a challenge, for others a relief to be removed from the competitive situation and others seemed to lack the motivation to participate fully. This served as a reminder that social skills tasks were included with the aim of producing better work.

With this class some pupils did not put in enough effort with cooperative tasks. When the results of tasks were available for all classes the top S2 section did not produce the best materials. There is a sense that they were comfortable with their traditional roles, may have felt threatened, or even devalue the activity as they did not have full ownership of the final product.

The issue of more able pupils was discussed in the literature review in relation to the work of Shacker (2003). It should be remembered however, that regardless of desired learning styles, the research evidence to date shows that all pupils gain in cooperative learning activities. The comments from the participants in this group, in relation to showing responsibility, were positive:

“... because you are all being marked as one and you think that you should just try and contribute to it and just try and help the other people to make an effort with them” (S2 pupil – LA1 24/04/08 – Group interview).

The S1 participants in the interviews focussed on the relationship improvements that had occurred as a response to their responsible approach.

“We haven’t been fighting or fighting over a certain answer if we think it is wrong we all just contribute and see if we can come up with something” (S1 pupil – LA1 04/04/08 – Group interview).

In relation to the criteria set for the four capacities identified by the Curriculum Review Group (2004) pupils identified themselves as being responsible to others by participating, listening carefully, being respectful of others ideas and opinions, respecting and understanding different cultures and beliefs and making decisions that are fair to the whole group. Each of these skills is taught in cooperative learning lessons where pupils learn to take turns, listen and speak carefully and make agreed decisions with all involved. The pupil perception of this is positive.

5.8 Effective Contributors

The Curriculum Review Group (2004) identify effective contributors as having attitudes and abilities that enable individuals to engage in their own learning and learning with others in a variety of ways.

The literature review clarified the central idea of cooperative learning where everyone should work and learn together therefore everyone is required to contribute to activities. This is built into the process through individual accountability. Whether individuals are being effective when they contribute to group work will now be explored.

The Development Officer in LA2 also addressed this point and stressed the important role that teachers had in ensuring all pupils are contributing.

“... one of the principal tenets of it is that everyone is involved, whether that then becomes effective is something the teacher would obviously monitor but you are at least getting everyone contributing in some way” (Development Officer - LA2 01/04/08 - Interview).

This is an important point and one that I will comment on here from classroom observation and participation. The classroom ‘climate’ is significantly improved when pupils are engaged in cooperative learning activities and the opportunity to observe what pupils are actually doing is greatly enhanced. When pupils are interacting in their groups it is possible for the teacher to move through groups quickly, clarify misunderstandings rapidly and to a larger number of pupils without disrupting all pupils. Teachers are able to establish a ‘sense’ of the pupil, what they are like and how they engage with their learning in a much more holistic and rapid way than is possible with traditional classroom teaching.

In the group interview of teachers at LA1 it was noted that cooperative learning approaches had the ability to tick all the boxes in reference to the four capacities of *Curriculum for Excellence* and in particular that of being effective contributors. An important point however was raised when it was suggested that not all pupils will always be able to fulfil all the identifiers listed. For example one teacher was able to say yes it would ensure contributions from pupils, however, for some pupils that may be limited.

“It certainly will tick all the boxes for many different areas like the whole idea of communicating in different ways like effective contributors, take the initiative and lead, certain pupils will take the initiative and lead and certain won’t” (Teacher – LA1 06/05/08 – Group interview).

This is a point that links into differentiation and the fact that cooperative learning pedagogies are good for ensuring all pupils can be included in the classroom by the dissemination of appropriate tasks and roles. The Development Officer in LA2 was quick to point out that the use of differentiated tasks was also required in relation to social skills. The activity and skill required should be appropriate to the current level the pupil is

working at. Monitoring of activities by the classroom teacher and the use of group processing should help to address issues of ensuring all pupils contribute effectively. Even if pupils are unable to fulfil all the criteria identified in being effective contributors there are still areas where they can be shown to do so. The fact is, however, that teachers know their pupils and appropriate 'roles' can be assigned to meet with individual needs and still ensure progress for all.

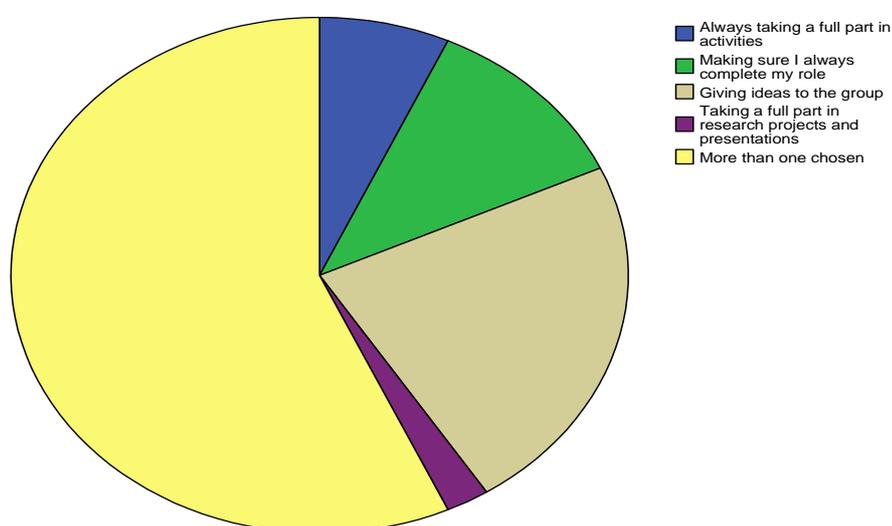
The participants in this research were asked how they had contributed effectively to their groups. As shown below there was a significant number of pupils who identified two or more areas where they had managed to do so. Of the multiple answers (56.8% - 25 pupils) an additional 36% (16) said they always took a full part in activities, 46% (18) said they always made sure they completed their role, 52% (23) said they always gave ideas to their group and 23% (10) said they always took a full part in research projects.

Table 5.4

I contribute effectively to my group by

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Always taking a full part in activities	3	6.8	6.8	6.8
Making sure I always complete my role	5	11.4	11.4	18.2
Giving ideas to the group	10	22.7	22.7	40.9
Taking a full part in research projects and presentations	1	2.3	2.3	43.2
More than one chosen	25	56.8	56.8	100.0
Total	44	100.0	100.0	

Chart 5.4

I contribute effectively to my group by

Pupils participating in the research were positive about the contributions they made in their groups. The fact that the majority of pupils gave more than one answer suggests there was appreciation of the different facets of their own work, and ability that can be used to assist the learning of others. This links with responsible citizens as they are aware of their responsibility to communicate with and work with their peers for mutual advantage. The fact that not every pupil ticked all aspects of effective contributing would suggest that the comments from the teacher group interview are borne out and that not all pupils will achieve every criterion noted or that they had not had the opportunity to contribute in that way with their groups.

In the pupil interviews what came across was that the pupils felt they had contributed well but that at times found it frustrating (in the S4 interview) if they were in the role of leader, or if they were explaining something to another pupil, and felt that the pupil should have been paying more attention. The sense of personal responsibility here is strong where there is an expectation for others to engage with their own learning.

“... if they are supposed to know it is annoying” and “if you have to keep going over it and over it” and “... if they get it the first time and they honestly didn’t know or weren’t in you don’t mind” (S4 pupil – LA1 02/04/08 – Group interview).

However some real strengths were identified by the S4 pupils,

“I think it’s better because instead of one person doing all the work everybody is contributing so nobody is getting left out” and “everybody’s got to do something so nobody can just sit back and relax” (ibid).

Despite the level of frustration some pupils may identify they were able to extract the positive from this which will be noted under successful learners. In the S3 section pupils focussed on the fact that responsibility towards the group meant that pupils would actually participate.

“We’ve got to set them questions and that from the group so that if they don’t find that part there is going to be a bit missing and the teacher is going to ask why is that no[sic] in it and they’ll know that it is their fault that it is no[sic] there” and “all the groups have made posters and then we’ve went round and gave each other information about their poster ... plus you are getting to say what you think of theirs” (S3 pupil – LA1 21/04/08 – Group interview).

Therefore they would have an impact on the learning of others in the group. Through the process of peer marking and support pupils were able to explore other ideas and assess their own work and the work of others. The act of group processing forced pupils to assess, as a group, how they were achieving and what they needed to do next to take their work to the next stage.

For the S2 group a similar response emerged where contributing to the group was seen as the responsible action to take. For others the act of contributing to groups changed some of the relationships they had with peers and established interaction with new pupils.

“... you would talk to them and they would just dingy [sic] you but then as the days went on they would start talking to you and listening” (S2 pupil – LA1 24/04/08 – Group interview).

Through this, pupils had managed to contribute to their groups in a positive way that established relationships as well as enhancing communication. Not all responses were so positive to this however and this year group identified ways that they had contributed but felt that others did not do so as effectively as they could. As previously noted the top S2 section had not achieved as well in collective tasks as other groups and this is probably reflected in the fact that here young people are identifying some pupils as not contributing as much as they could. Again, this raises the issue that constant teacher monitoring and effective group processing is required to ensure all pupils learn as would be hoped.

“I liked when you got jobs and different bits to learn, but I think some people were less contributing to the group than others with the bits they had to learn” (ibid).

The S1 pupils were able to identify a number of ways that they felt they had been effective contributors from establishing positive relationships to helping others with their learning.

“I get along with everyone in the group and we all take turns in the group and see if we can come with an answer” and *“I also ask questions so like with certain people they might not understand some things then you can help them understand it better”* (S1 pupil – LA1 04/04/08 – Group interview).

Again there is the sense of responsibility that is shared among the group and an awareness of the links found within the four capacities themselves.

5.9 Successful Learners

The findings of this research concur with the perspective that cooperative learning can produce successful learners. This section was purposefully put at the end of the four capacities as there is already a great deal of research evidence to show that cooperative learning does produce successful learners. This has been discussed in the literature review.

This analysis will focus on the perceptions of participants in relation to whether they perceive their learning as being successful through the implementation of cooperative learning. The limitations of this study, due to its size and duration, cannot produce extensive figurative data on results however Chapter 2 has already supported this.

The literature already available in relation to the improvements in pupils' attainment is sufficient evidence of improved learning among pupils of all abilities due to cooperative learning. Cooperative learning is not an overnight fix as far as raising grades is concerned but is a longer term strategy that builds on skills together with shared learning to help improve attainment. The perceptions of how cooperative learning might help to produce successful learners can however be explored.

From the earlier discussion on the dominant influences on learning and teaching over the last century it was important to establish some sense of how pupils experience the classroom. Given that behaviourist approaches still exist in our classrooms (Pollard, 2002) would the majority of the pupil sample be happy with that approach in the classroom and perceive this as an appropriate way for them to learn? It is a pedagogy that works for some but can create tension, anxiety and concern in others (rather than effective learning). The question is how many of our pupils learn best by didactic teaching and how many would prefer alternative pedagogies?

With respect to the benefits of a didactic, behaviourist approach to learning in the classroom evidence from the research data shows that the majority of pupils did not support this style of learning with 75% (33 of the sample of 44) saying they learned best when engaged in active learning. Pupils across the year groups identified working as part of a group or team as the most positive learning experience they had, working with a partner was identified as the next most valuable experience.

Vygotsky stressed the importance that learning together can bring, particularly when interaction takes place between one more knowledgeable learner “... *creating a zone of proximal development for the child*” (Beveridge, 1997: 30). Again this links well into cooperative learning which promotes the engagement of groups that include learners of different abilities (Johnson *et al*, 1994; Johnson *et al*, 1990). Vygotsky’s theory can thus be implemented through the benefits that come from working with more able peers. In the pie chart below 25% of the sample (11 pupils) identified learning on their own or through whole class teaching was when they learned best. As with any response given, there may be a number of reasons for pupil perceptions as there are many ways of learning in the classroom, and the results of this question would suggest that a variety of learning and teaching pedagogies are required by the teacher.

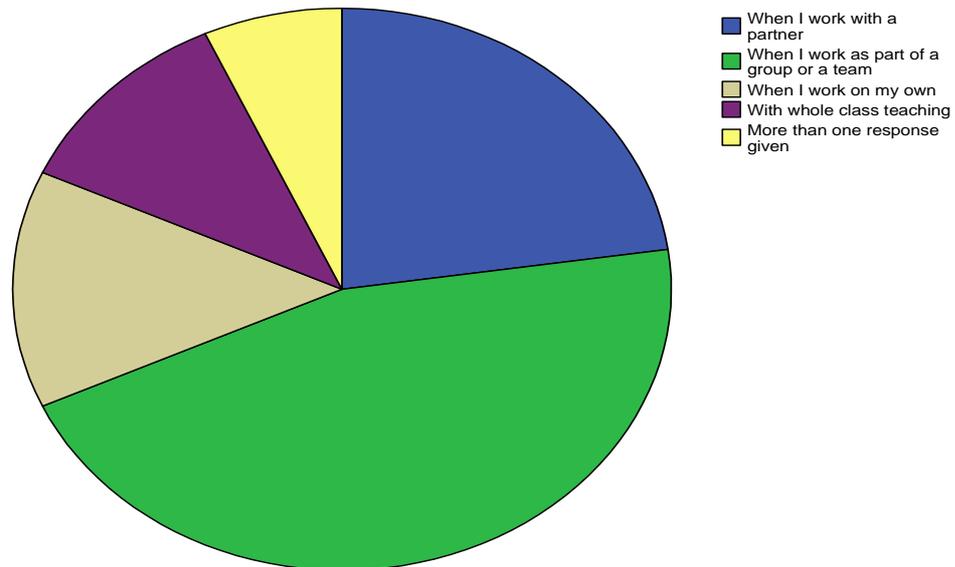
Table 5.5

I learn best

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid When I work with a partner	10	22.7	22.7	22.7
When I work as part of a group or a team	20	45.5	45.5	68.2
When I work on my own	6	13.6	13.6	81.8
With whole class teaching	5	11.4	11.4	93.2
More than one response given	3	6.8	6.8	100.0
Total	44	100.0	100.0	

Chart 5.5

I learn best



From Table and Chart 5.5 above there is strong evidence that the participants in this research believe they learn best when engaged in some form of active learning and the following analysis will look at all perceptions from the group interview that show whether or not it is believed that cooperative learning pedagogies can help develop successful learners.

In LA2 the large scale implementation of cooperative learning is ongoing with more teachers being trained every year and that Authority is now engaged in aiding other

authorities with their training. This is seen as a long term aim and not one where instant results are expected. This is a realistic perception on behalf of the Authority and reflects awareness that change and implementation take time. However, among staff, there is a perception in the Authority that pupils are developing as successful learners.

“You are also seeing increases in attainment because pupils can interact with each other and learn from each other so it is a kind of chicken and egg thing ... from my own experience more pupils are enjoying the work and to me that has to have an effect on attainment” (Development Officer – LA2 01/04/08 – Interview).

In the teachers’ group interview one teacher noted that the very act of discussing work in groups enabled them to quickly become aware of pupil mistakes and thus address these to help improve learning.

“One important thing I found is that you quickly become aware of the misconceptions they had” and *“when you hear them talking about it you quickly realise what they see and I think that is very valuable...”* (Teacher – LA1 06/05/08 – Group interview).

Other teachers identified the learning that takes place when pupils explain to one another, as they are forced through that process to develop their own understanding. That can be linked to the experience of more able pupils who may be frustrated at times but when questioned use terms such as ‘deep’ to explain how their thinking may have developed. This supports the idea that cooperative learning activities do not prejudice the more able but challenge them to further develop their skills and learning.

“I just think well the minute that person explains to the other person or they figure out why one answer is wrong then you know they have learned something and that’s one of the best things about having the groups” (ibid).

Despite neither of these coming from cooperative group work there is an understanding that pupils can benefit from interacting with one another. With the opportunity for teachers to train in cooperative learning this is an area that can be developed further.

Pupils were asked in the questionnaire, as already noted, how they learned best. Reflecting back to the first pie chart in this section with the title “I learn best when” the majority of participants cited learning interactively. Pupils have explained why some of them learn so well in this way already with references to deep learning and greater understanding. The comments from pupils about their own learning and how effective they perceived that to be in the interviews will now be discussed.

In the S4 interview pupils were able to identify the ways they had benefitted from contributing to their groups and at times aiding the learning of others. *“You understand it better because you have had to explain it to someone else”* (S4 pupil – LA1 02/04/08 – Group interview) and this links back to the teacher comments about the benefits of learning together. The pupils were further asked if they had benefitted from some of the different activities they took part in the classroom and in relation to a carousel one pupil stated:

“it was good because you got to see what other people thought outside from the group ... so if you get other people’s views you can see how differently they do it” (ibid).

This shows the need for short term groups when pupils were given the chance to work with different pupils to further develop and expand their learning as well as the support that comes from working in their base cooperative learning group. One pupil noted that groups working together for a long period can get into a comfort zone, as well as a support zone, and the importance of being placed into another environment so that their learning is challenged,

“because you don’t learn anything if you are in your comfort zone, you don’t stretch yourself” (ibid).

This is an insightful comment from a pupil that acknowledges that to be a successful learner it is important to be challenged and that change is part of that process. Cooperative learning supports this through the formation of short term groups and a variety of activities

that involve different partners and groupings while maintaining the need for individual accountability.

The S3 pupils were able to identify a number of ways that they felt had helped their learning from the action of explaining something and the comprehension that required to the changes in their own perceptions

“you get to hear what other people think so no [sic] just what you think so it might just change your opinions a bit” and “it’s no just kinda [sic] oh I’ve read it you’ve got tae [sic] know what you have read and then you are talking to people about it so you are no [sic] just reading it” and “you don’t forget it straight away” (S3 pupil – LA1 21/04/08 – Group interview).

What is evident from this is that pupils can relate the quality of what they have learned in lessons to previous learning pedagogies employed in the Geography classroom and are able to assess their own understanding in that they have a greater knowledge of the relevant material. Indeed one pupil stated, even though this pupil had stressed they did not like working in groups, that when discussing and explaining ideas in the groups *“it sinks in deeper”* (ibid).

The S2 participants were also positive in respect to what they had learned through cooperative learning. The ideas of support, engagement and responsibility are within their contributions to the group interview.

“I learn better because when I’m in a group I know I’ve got to dae [sic] something and that means I’m learning something like all the time instead of just sitting watching” and “you understand more if you see it from other people’s point of view” and “if you get stuck you’ve got somebody else to ask” (S2 pupil – LA1 24/04/08 – Group interview).

Other pupils in this group said they couldn’t really say why but they thought the whole process helped and supported their learning.

The S1 participants responded positively also and stated that they thought they learned better and that being able to discuss their answers helped their learning.

“You can cooperate with other people better” and “because you are getting all different answers” and “you can look at it from a different point of view” (S1 pupil – LA1 04/04/08 – Group interview).

In response to asking pupils if they learned well through cooperative learning pedagogies the perception of pupils was consistently based on the benefit they had from sharing with others in their cooperative learning groups.

5.10 Additional Themes from the Findings

Although the main aim of the research has been to establish if, and in what ways, cooperative learning pedagogies can be seen to support the four capacities of *Curriculum for Excellence*, I thought it was important to ask broader questions about how pupils might like to learn in the future, and to assess what their current understanding of cooperative learning was. In the questionnaire participants were asked to identify their preferred activities in the classroom and state why this was.

Table 5.6

The activities I most enjoy in the classroom are

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Working on my own	2	4.5	4.5	4.5
Working in groups	14	31.8	31.8	36.4
Whole class teaching	1	2.3	2.3	38.6
Working on projects	19	43.2	43.2	81.8
More than one chosen	8	18.2	18.2	100.0
Total	44	100.0	100.0	

Chart 5.6



Of the 18.2% of pupils (8) who made more than one choice 9% (4) said they enjoyed working on their own, 14% (6) said they enjoyed working in groups, an additional 7% (3) said they enjoyed whole class teaching and 16% (7) enjoyed working on projects. When asked why a particular activity was enjoyed of those that said they enjoyed working on their own the reasons given for this were that 2 pupils felt they learned more this way, one said they felt more involved and one that they could concentrate more. One further pupil identified being able to discuss things and hear other opinions as being the reason they preferred working on their own which suggests this pupil did not fully understand the questionnaire and the issues around this have been discussed previously.

Pupils who said they preferred working in groups (31.8% - 14) gave the following reasons, 14% (6) said they felt they learned more in this way, 5% (2) that they felt more involved and 14% (6) that they could discuss their answers with others which has already been discussed in the group interviews, it should be noted that group interviews took place only after pupils had completed questionnaires so there was no leading taking place.

In relation to whole class teaching only one pupil identified this as their singular preferred way of learning. Of the two pupils who gave this in multiple responses they appear to have misunderstood the question as they have identified in addition to being able to concentrate more that they could discuss things and hear other opinions and be more involved. The evidence from this sample suggests that traditional learning pedagogies do not support learning for the majority of pupils in our secondary classrooms. This does not mean such pedagogies should not be used as some pupils still learn well this way but to reach all pupils alternative practice such as cooperative learning is required. What is evident is that neither the traditional approach nor cooperative learning is exclusive in aiding learning and each approach has a place. Therefore any teacher who uses only one approach is not supporting the learning of all pupils.

Of the 43.2% of pupils (19) who identified working on projects as their preferred way of learning there were a number of multiple reasons given. In total 20% (9) said they felt they learned more, 27% (12) identified feeling more involved with their learning, 16% (7) referred to concentration and working more on task and 16% (7) also said they could discuss things and hear other opinions. No other reasons were offered although pupils were given the opportunity to identify them. Again active learning is seen as the predominant area that pupils find enjoyable in the classroom. This does not suggest that pupils are not learning, as they have identified the areas in which they feel it benefits them, rather the process is rewarding and engaging.

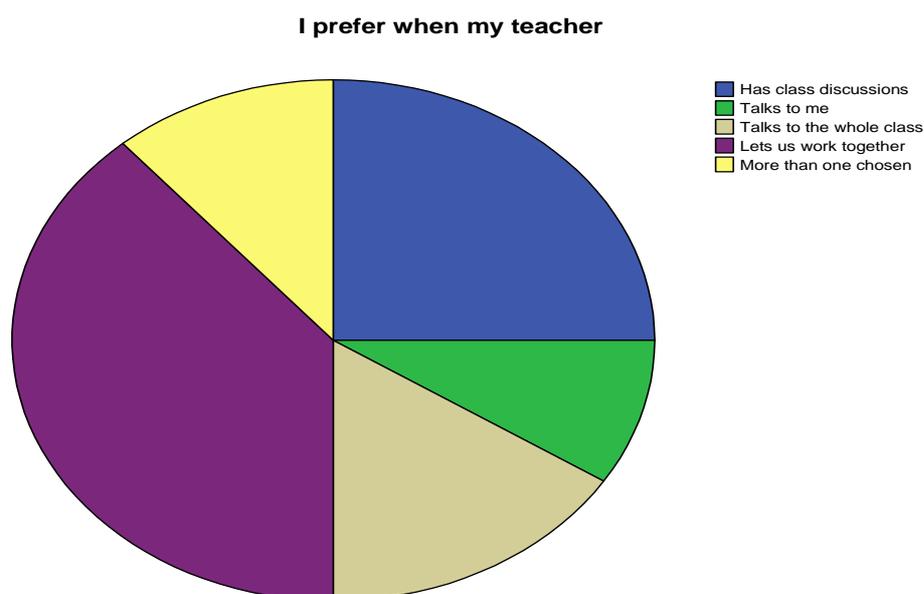
Pupils were asked what they preferred the teacher to do with them in the classroom (Table and Chart 3.7). The aim here was to approach the same issue from another angle to see if this supported or challenged what the pupils said were their preferred ways of learning. The data obtained from this question supports the pupils' comments about how they like to learn and again stresses the interactivity that is desired by the majority in lessons with 63.6% (28 pupils) directly saying they liked interactive activities. Of the 11% of pupils (5) who chose more than one option the breakdown was 11% (5) liked class discussions, 5% (2) liked the teacher to talk to the whole class and an additional 9% (4) wanted to work together. Adding in the pupils who have chosen more than one option and the total number of the sample who prefer interactive learning adds up to 75% (33 pupils). This is clearly a significant portion of the sample.

Table 5.7

I prefer when my teacher

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Has class discussions	11	25.0	25.0	25.0
	Talks to me	4	9.1	9.1	34.1
	Talks to the whole class	7	15.9	15.9	50.0
	Lets us work together	17	38.6	38.6	88.6
	More than one chosen	5	11.4	11.4	100.0
	Total	44	100.0	100.0	

Chart 5.7



Whether pupils were interpreting this working together in relation to cooperative learning or group work in general was clarified. Pupils were asked what they understood by the term cooperative learning.

5.10.1 Questions about cooperative learning

There is evidence here of a solid understanding that what takes place in a cooperative learning situation is different to traditional group work. From the 9.1% of pupils (4) who chose more than one response, although this was not an option in this question, 7% (3) of responses said cooperative learning was learning together, 5% (2) that it was team work and only 2% (1) that it was group work. An additional 9% (4) comments said they thought

it involved depending on and helping one another. The majority of pupils could relate to cooperative learning as more than traditional group work.

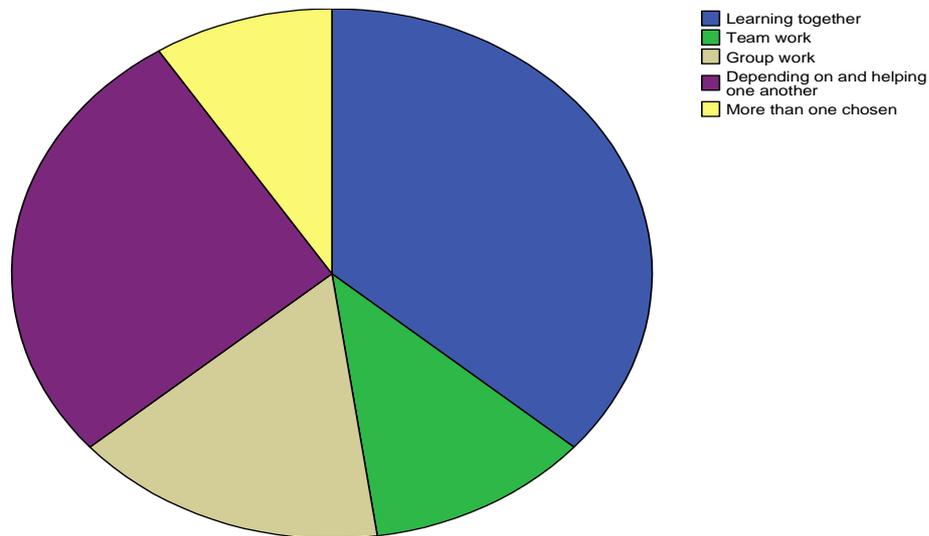
Table 5.8

What do you understand by the term cooperative learning?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Learning together	16	36.4	36.4	36.4
Team work	5	11.4	11.4	47.7
Group work	7	15.9	15.9	63.6
Depending on and helping one another	12	27.3	27.3	90.9
More than one chosen	4	9.1	9.1	100.0
Total	44	100.0	100.0	

Chart 5.8

What do you understand by the term cooperative learning?



This evidence shows that although pupils may have been interpreting cooperative learning in different ways, there was an understanding that what they were doing involved a degree of responsibility to one another, a supportive environment and that it benefitted their learning.

5.10.2 Pupils' hopes for future learning

In the last two questions, pupils were asked to give reasons why they would like more or less cooperative learning activities in the future. In relation to why pupils might enjoy

more cooperative learning activities in the classroom, only one pupil added a negative comment and stated they did not like working in that way. This was also noted previously in the discussions where the same pupil was able to state that this form of learning provided deep learning for them, so they were aware of the benefits that can take place even if it did not include their preferred learning style. In relation to the 20.5% of pupils (9) who had given more than one answer, an additional 11% (5) pupils said it increased their confidence, 11% (5) that it helped them get a fuller understanding of the topic, 16% (7) that you get to hear others ideas and 16% (7) that it was a fun way to learn. Overall the feedback from pupils is very positive.

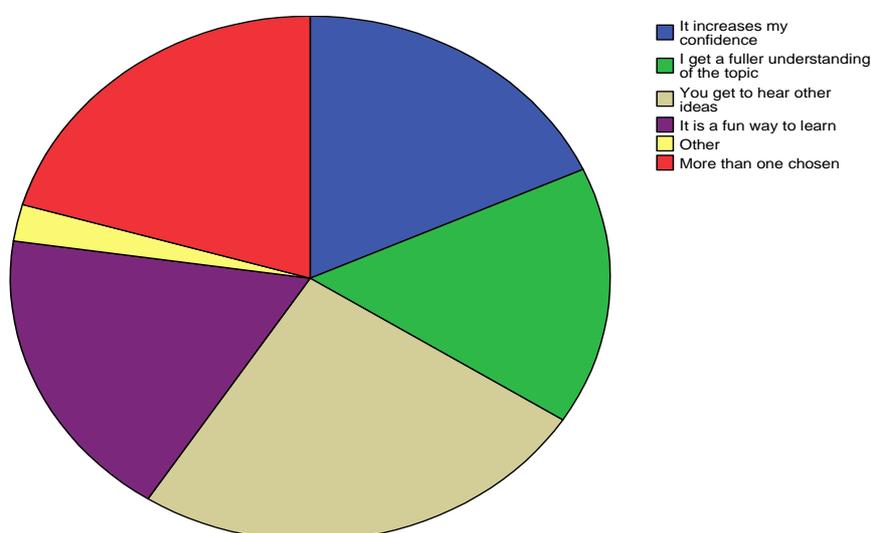
Table 5.9

I would like more cooperative activities in the classroom because

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid It increases my confidence	8	18.2	18.2	18.2
I get a fuller understanding of the topic	7	15.9	15.9	34.1
You get to hear other ideas	11	25.0	25.0	59.1
It is a fun way to learn	8	18.2	18.2	77.3
Other	1	2.3	2.3	79.5
More than one chosen	9	20.5	20.5	100.0
Total	44	100.0	100.0	

Chart 5.9

I would like more cooperative activities in the classroom because



To test how well participants liked cooperative learning the last question was written as a negative to authenticate previous responses and to avoid leading pupil participants into giving only positive feedback. Pupils were given the option however, to say they had enjoyed cooperative learning as this had come up as an issue on the pilot. Pupils were asked to say here why they would not like more cooperative learning activities in the classroom and given the option, to put other comments that had not previously been raised in the pilot. Of the responses here, there are a significant number of pupils (43.2% - 19 pupils) who identify pupils not working well together as having a negative impact on their learning. In this instance some pupils must have been referring to traditional group work where no social skills had been included.

This finding is not, however, broadly borne out in the interview data where pupils displayed a much more positive response, in general, to the interactions that took place during the lessons. Of the pupils who entered more than one choice, pupils again identified the impact others can have in lessons with 5% (2) pupils saying it can take too long to get others to understand, 5% (2) that some people don't work well together and one that they can get sidetracked during the activity. What is clear from this, as already discussed, is that the regular teaching of social skills in lessons is vital not only to ensure actual cooperative learning activities are taking place but also to ensure these are developed by pupils. This does not need to be a large part of a lesson but a few minutes at the start of the period or during a new activity. Completing this regularly will remind pupils of the importance of working well together. The teaching of social skills can, on its own, help to develop a number of criteria within the four capacities.

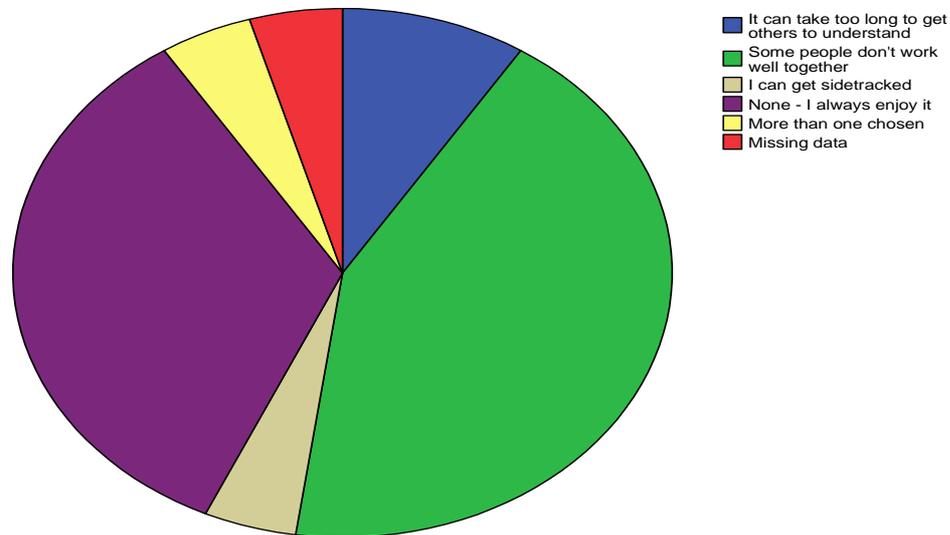
Table 5.10

I would like less cooperative activities in the classroom because

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid It can take too long to get others to understand	4	9.1	9.1	9.1
Some people don't work well together	19	43.2	43.2	52.3
I can get sidetracked	2	4.5	4.5	56.8
None - I always enjoy it	15	34.1	34.1	90.9
More than one chosen	2	4.5	4.5	95.5
Missing data	2	4.5	4.5	100.0
Total	44	100.0	100.0	

Chart 5.10

I would like less cooperative activities in the classroom because



Pupils were then given the opportunity to add any comments they wished about cooperative learning. Only 4 pupils took this opportunity and only one was negative. The comments relating to cooperative learning that are positive embody the philosophy of active learning which are that pupils can engage effectively with their learning, and with one another. The final comments that these pupils wished to make in relation to cooperative learning were:

“I really enjoyed it, it was really funny and cooperative learning is good and I should improve my learning in it.”

“Personally I find whole class or individual work is more beneficial for learning.”

“I think we should have cooperative learning because it’s a new way of learning and it’s a way of people working with others around them.”

“It’s good getting to sit and talk amongst each other and share our views and opinions it also gives you a chance to voice what you have managed to understand and picked up. It also saves you from sitting in silence working on your own.” (All quotes from question 14 of the questionnaire.)

5.11 Tally sheets

When gathering evidence for this thesis, the most challenging area to do so, was the tally sheets (Appendix 5). The reason for this was due to the demands on me as the classroom teacher and the management required in some activities. Despite being able to gather data for only 11 classes, there were 78 timed observations for pupils. Each observation would last for one minute at the group and during this time any evidence of the points identified in the table below would be noted. As previously discussed the following indicators for each capacity were selected, as I believed it would be possible to see these when working in cooperative learning groups and there were some aspects that could be covered within the Geography curriculum. Not all areas are as well represented through the tally sheets however, particularly in relation to the ‘responsible citizens’ section, as the curriculum did not lend itself to addressing these areas on the particular occasions of the observed lessons. There was however, still evidence of each. In the table below the number of positive observations for each of the elements of the four capacities are indicated on the right hand side. Further discussion of these will follow after the table.

Table 5.11 - Tally Sheets.

Four Capacities	Number of Positive Observations
Confident Individuals	
- Self respect	42
- Self aware	37
- Relates well to others	56
- Secure beliefs	27
Effective Contributors	
- Works in partnership and teams	63
- Communicates positively	62
- Thinks through problems	43
- Problem solves	36
- Contributes ideas	67
Successful Learners	
- Enthusiasm	51
- Motivation	51
- Openness to new ideas	42
- Determined to read high standards	28
Responsible Citizens	
- Respect for all group members	44
- Develop knowledge and understanding of the world and Scotland's place in it	18
- Understand different beliefs and cultures	12

The table above, despite the limitations in collecting the data, is able to provide positive evidence that when working in cooperative learning groups, pupils are engaging with the four capacities of *Curriculum for Excellence*. The degree to which different capacities are addressed is a feature of the curriculum at any time, with some areas of the curriculum, particularly in the Geography class, focussing on an 'understanding of the world and Scotland's place in it' and 'understanding different beliefs and cultures' at certain points. The elements identified under the capacity of 'responsible citizens' were features of some course work during the data gathering period but the particular classes involved, did not facilitate the use of tally sheets at the appropriate times.

The findings from the tally sheets are beneficial as they add another dimension to the evidence already gathered through the questionnaires and interviews. As already discussed there is very positive evidence of pupils feeling more confident through the implementation of cooperative learning and this is supported here with evidence that on 56

occasions pupils were found to relate well to one another. To engage well with others a degree of confidence is required and through further developments of pupils self respect, awareness and a positive sense of their own beliefs this can grow. The effect of having answers and contributions, made to the group valued, assists the development of this in young people.

The section on 'effective contributors' is very significant. An essential theme within cooperative learning is that all pupils are involved and indeed individually accountable. The evidence here shows that pupils were highly involved in working in partnership and teams, and communicating positively, which was supported by the inclusion of social skills. The challenge to provide this degree of interaction within traditional classroom approaches or indeed traditional group work is high. The ease with which cooperative learning can support the development of this capacity is evident. This area was fully supported by the pupils' responses in the questionnaires when many had given multiple responses with respect to the ways in which they contributed effectively. As cooperative learning requires 'group processing' at some point in every lesson, this encourages pupils to think about their own contributions and how they can do so more effectively and encourage others to do the same.

Pupils have shown positive aspects of being able to think through problems, and, to a lesser degree, problem solve but again this could be due to the actual activity taking place at the time and the opportunity to observe this. It is important to remember here, that pupils have identified active learning as the way they learn best in this research.

This directly links into how pupils have shown themselves to be successful learners in this research. Table 5.11 above shows the majority of pupils were able to display enthusiasm and motivation for the tasks undertaken and this can only enhance their learning. The

openness to new ideas that was shown by a number of pupils displays the benefits of engaging with others, rather than simply through the teacher and a book, as pupils can extract information and ideas from one another. This positive point was raised by pupils in the group interviews already discussed.

The area where there is least data is in relation to responsible citizens. This could in part be due to a flaw in the choice of elements for this capacity or to the timing of the lessons and the curriculum content included when observations were possible. For an external researcher this could be more effectively managed to ensure particular activities could be observed. The fact that 44 of all the observations displayed pupils interacting in a respectful way (by being polite, taking turns, listening to one another and accepting other opinions and views) is however, very positive and again supports the impact of building teams and the development of individual social skills.

Geography as a subject lends itself well to developing a sensitive and informed approach to understanding different parts of the world and the challenges that can be faced in certain situations and there is evidence of this within the tally sheets. The evidence from the interviews shows that pupils believed they had managed to engage as responsible citizens. To structure lessons so that pupils can engage effectively in decision making and take a participative approach on a regular basis, can only help to develop them as responsible citizens.

5.12 Implications of the Research Findings

The most prominent implication of this research is the detailed evidence established here that cooperative learning activities, when well managed and effectively employed, can and do, support the development of the four capacities of *Curriculum for Excellence*. This evidence comes from the participants themselves. Teachers acknowledge the benefits that

can be made in learning through interaction and pupils who participated were able to identify the different quality of learning it provided for them. Participants identified the 'deep' learning that had occurred through cooperative learning. James Atherton (2005) identifies 'deep' learning as linked to intrinsic motivation and 'surface' learning to extrinsic motivation. As already explored more engagement and personal reward comes when motivation is intrinsic (Bandura, 1986; Kohn, 1992 and McLean, 2003). Atherton goes on to summarise the work of Ramsden (cited in Atherton, 2005) on surface and deep learning and identifies deep learning as learning that includes relating:

“... previous knowledge to new knowledge... distinguishes evidence and argument ... relates theoretical ideas to everyday experience... organises and structures content into coherent whole” and the “emphasis is internal, from within the student”.

Surface learning is identified as lacking the links of deep learning with a deal of memorising and unrelated tasks (ibid). What is noteworthy within this is that there is a different quality to learning that is considered deep and the participants were able to identify this. Participants found themselves engaging with others in a way that required them to explain themselves and explore their learning, finding links and deepening their own understanding. They also recognised the confidence it engendered and the way that they themselves contributed. This is backed up by the evidence gathered from participating pupils, while actively engaged in the classroom, through observation.

This research has been able to identify the flaws in traditional pedagogies where pupils are able to take a more passive approach to their learning and although this benefits the learning of some pupils it does not do so for all. The majority of learners benefit from a more active learning style rather than that of the audience and the apathy that can be associated with traditional classroom practice.

Throughout this analysis what emerges is the need for effective and regular teaching of social skills, not only to ensure that cooperative learning is actually taking place, but also as a means of enhancing the life chances of pupils. In LA1 it has been noted that many pupils lack social skills and in LA2 there is evidence that the teaching of these skills is having an impact beyond the classroom. In today's society the need for appropriate social skills is essential.

Pupils have identified the ways in which they are self aware through this research and have been able to assess their own development in relation to cooperative learning. Pupils have shown awareness of the support that can be gained in cooperative learning activities but also, the responsibility that will fall onto them when working independently, and the need to ensure they are also responsible for this. There is an appreciation that working together can help to promote the ability to work confidently and effectively on their own.

A significant finding was that 75% (Table 5) of the pupils participating (33) said they learned best when working interactively. Of this 45.5% (20) identified working as part of a team, 22.7% (10) when working with a partner and a further 6.8% (3) gave more than one interactive response. This is particularly significant given that the predominant pedagogy in our secondary schools is didactic in approach.

One further important implication of this research is the challenges that have been highlighted through practitioner research. As discussed in Chapter 4 of this thesis there are tensions in the role of teacher as researcher. To ensure an objective stance is taken, the researcher must at times be able to disengage with the action of the classroom, but, as the teacher responsible for delivering the lesson, this is almost an impossible task. A teacher's first responsibility must always be to the pupils and as such the gathering of data for research in particular contexts becomes untenable. The demands of a day to day, period by

period classroom experience make the teacher's role as researcher a hazardous one. Of the many lessons that involved cooperative learning pedagogies only 11 of these could be used to gather data through tally sheets. These have provided valuable data but without the aid of interpretive approaches, this research may never have been possible.

5.13 Conclusion

The findings from this analysis of research data point to a need for more interactive learning practices in our classroom. Indeed, to improve learning in our young people cooperative learning has a very positive role to play. Through the teaching of social skills as general practice, learners should be able to engage effectively and more productively. This research analysis provides substantial evidence that cooperative learning supports the four capacities of *Curriculum for Excellence*. The inclusion of cooperative learning strategies alone will go a long way to embracing the philosophy of the new curriculum.

Chapter 6 Conclusions

This Chapter will summarise the main findings in this research and clarify whether cooperative learning, can support the development of the four capacities of *Curriculum for Excellence*.

6.1 Findings

6.1.1 Is Cooperative Learning an Effective Pedagogy?

What is clear from this research is that cooperative learning is a very well researched pedagogy (further details in Chapter 2 – literature review) that fully supports the four capacities of *Curriculum for Excellence*. Cooperative learning has been shown to develop successful learners through engaging learners more effectively in their work and by increasing achievement. Young people gain in confidence through the interaction they experience with their peers, this was evident not only through the literature review but through the data obtained in this research. Through the process of cooperative learning every young person is required to contribute and a sense of responsibility grows in relation to peers.

6.1.2 Is Training Necessary to Effectively Implement Cooperative Learning?

Currie (2007) explored whether whole school implementation of cooperative learning was effective and this was discussed as part of this research in the interview with the Development Officer in LA2. It appears that the greater the number of teachers who are engaged in this pedagogy, the more effective it can be overall. Through this study and my own personal experience it is clear that aspects of cooperative learning methodology can be ‘cascaded’ to other colleagues but to fully and effectively embrace the philosophy of

cooperative learning it is essential that appropriate training is provided. Active learning has become 'a theme' in all our learning and teaching strategies but to expertly implement cooperative learning a firm understanding of the theory is essential. Through reflecting on my own experience I am convinced that time, practice and a deep understanding of the philosophy supporting this pedagogy is essential. As my confidence and skill has increased in this pedagogy learners have been able to engage more effectively. Teachers need time to train and reflect on this and the 'cascade' model would lead to partial understanding of the pedagogy and ineffective implementation.

6.1.3 What Does This Mean for Teachers?

What this means for teachers is that appropriate training is required. The drive in education to ensure more active learning needs to be supported by appropriate CPD. Teachers are expected to embrace pedagogies that they are unsure of and lacking confidence in. This presents a challenge to many professionals. Effective active learning is not easy to implement for many teachers and this needs to be supported. For teachers to implement effective active learning pedagogies they need to be supported by peer and authority wide planning, support and training.

In this research the teachers involved benefitted from their participation, as six of the sample advised me that the interview had been the best CPD they had experienced in years. Teachers had the opportunity to discuss and share their practice through the process. This reflects the benefits peer support can have and identifies the difficulties teachers have in their day to day experience in actually engaging effectively with one another. Time must be made available, where teachers can engage regularly, to explore their own practice. It is also necessary that teachers have the opportunity to engage more with educational theory and again the need for time is evident. Teachers are professional in their approach and aim

to provide the best learning and teaching for young people but this is often very practice based. Given the time, and opportunity, to engage with educational theory, and an awareness of the impact that different pedagogies can have will develop the confidence and belief in the effectiveness of active learning strategies.

6.1.4 Implications of Teacher as Researcher.

In Scotland today there is a drive to have more teachers engaged in researching their own practice through action research and this is a feature of the Chartered Teacher and Masters programmes. Schools and Authorities are enthusiastic to engage with this but the challenges a teacher is faced with may limit the numbers involved. The process of being a teacher researcher involves having a dual role with pupils and this raises ethical concerns. The issues can be addressed through informed consent. However, the demands on teacher time, the responsibility for the whole class and the gathering of research data are all potential areas of difficulty.

In this research the impact of introducing a new pedagogy in the classroom, engaging learners with this and developing my own skills at the same time, highlighted why so few teachers are willing to engage in this way. The complexity of the classroom, at times, made it impossible to collect data. This was the key area in which I experienced difficulties. The reason for this was beyond my control and due to the nature of classrooms and different pupils.

I had not fully appreciated the challenges of the research process, and although I was unable to gather a greater degree of data from the tally sheets, I am relieved that the variety of data gathering techniques used meant that reliable data was gathered. Any teacher undertaking research will experience challenges that are not the general experience of external researchers. The data gathered in this research is enhanced due to the

relationships that were already established within the school. The analysis of this research will now explore in what ways cooperative learning was found, in this thesis, to support the four capacities of *Curriculum for Excellence*.

6.2 The Four Capacities

6.2.1 Successful Learners

Cooperative learning is a pedagogy that has been subjected to rigorous and detailed research into its effectiveness in supporting learning. Within the four capacities there is the need to develop successful learners, and, the literature review in this thesis was able to support this by citing evidence that showed learners were found to benefit academically, with improved attainment, in a number of studies (Clark, 1998; Johnson, 1993; Hauserman, 1992; Gillies, 2000; Slavin, 1984 and Yager, 1986).

In the case study school participants were able to identify the areas where they believed they had been successful. A significant portion of the sample of participants - 75% (33 pupils) - said they learned best when working with others and cooperative learning was regarded as supporting this. There was awareness for participants that ‘deep learning’ occurred as a result of the cooperation involved.

6.2.2 Confident Individuals

Confidence was an area that was regarded as a positive by product of cooperative learning in the literature reviewed and I could find no evidence of it reducing confidence in participants. There was, however, significant evidence that the confidence of young people was supported by it (with improved confidence). This is possibly supported by the inclusion of social skills teaching that enables learners to find new ways of relating to one another and provide a safe environment in which to explore their ideas. It has been stated

that the very act of being supported by peers, discussing answers and ideas aids pupil confidence (Johnson & Johnson, 1994; Johnson *et al*, 1990; Clark, 1998 and Manning, 1991).

Pupils in the case study school stated it gave them confidence because they were able to gain support from other learners and enhance their own ideas. Participants' identified the benefit of having a support network and the strength in providing answers as a group preferable to providing answers as an individual when they may be concerned, or lack confidence, if giving an answer. The sharing of ideas created confidence that answers were thought through.

The teachers participating in this research were more cautious about the possible impact on confidence through young people working together and stressed that some may lack confidence in that situation. It should be clarified that where no social skills are taught learners may not support one another's confidence.

6.2.3 Responsible Citizens

Responsible citizens should be able to take a full part in society, make informed decisions and show respect for others. Although in the literature review I was unable to locate any research data on cooperative learning that would directly support this area, I did locate research on the development of relationships among young people. Here it was found that there were improvements in the interactions between cross ethnic groups (Johnson, 1982) following the implementation of cooperative learning practices. Gillies (2000) found that young people trained in cooperative learning practices were able to cooperate effectively over time with different groups showing that the skills they had established provided them with respectful attitudes to other individuals.

In the case study school, participants regarded themselves highly in this area. There was a sense of pride in achievements and the ability to work well with others, relate to one another and show support in their groups. In the interviews it was clear that some relationships had developed as a result of the interaction, where some participants collaborated with unexpected pupils. Although some participants found this a challenge at first, there was a sense that participation became a responsibility as it had an effect on others in the group.

6.2.4 Effective Contributors

Effective contributors take part. The literature review in Chapter Two was able to establish that learners became more involved over time in activities and required less extrinsic motivation to do so (Johnson, 1985). Pupils were found to support and encourage one another (Hauserman, 1992).

The participants in this research were able to identify when they did not contribute effectively to their groups and this reflects their sense of shared responsibility. This is also an indication that teaching social skills is essential when engaging in cooperative learning activities.

6.3 Good Practice

This research has identified what ‘good practice’ is, in relation to effective learning and teaching, as defined by HMIe and Ofsted. Chapter 3 focussed on the background to *Curriculum for Excellence* and the thinking and research evidence in support of it. The evidence supporting curricular developments aim to embrace the challenges of a particular time and today there is a need for flexible, adaptable, team spirited, confident and articulate individuals. The notion that all of these skills can be achieved through didactic

learning and teaching approaches is incorrect. To engage learners fully and develop the rounded individuals that our society needs today, we must embrace an active learning approach. Curriculum planners and developers have, for a considerable time, been aware of the necessity of this. Reflected in many curricular developments is the fact that active learning is an important element in the process of development.

From the evidence of research, curriculum planning and school inspections in Scotland and England it is clear that active learning is identified as ‘good practice’. Where practitioners may struggle with this is in its effective implementation. Cooperative learning, through effective training of practitioners and implementation, is a highly effective way of ensuring active learning is embraced in the classroom.

6.4 Effectiveness of the Methodology

The effectiveness of the methodologies were excellent in gathering participants’ views and opinions on cooperative learning. The methodologies were, however, more limited in relation to the breadth of the research and this can, in part, be regarded as a result of the scale of the study and of the complex situation of practitioner researcher.

The nature of this research required that two paradigms of research were followed. This presented the opportunity to reflect on extensive published research data which served as an excellent background to the pedagogy under review. The challenge that presented itself was in gathering data, aiming to be as objective as possible, while being involved in an authority relationship with the pupil participants. This did, however, present a unique perspective on the case study school.

A positive outcome of this approach has been that pupils ask how the research is progressing and what I will be engaging with next. This has served as an excellent model of life-long learning and the need to develop, an aspect we are trying to instil in learners.

6.5 Implications of This Research

This research has shown, through engaging with relevant literature on cooperative learning, that it is a highly effective pedagogy in supporting learning in the classroom.

This pedagogy has also been shown to support the four capacities of *Curriculum for Excellence* in an effective way. Good practice is highlighted today as practice that engages and supports learners and cooperative learning is an excellent pedagogy to do this.

Effective training for practitioners is required in learning and to some extent this is underway through the implementation of formative assessment strategies. In a broader sense, practitioners should be given more opportunity to engage with colleagues, work collegially and share our current good practice. The demands of schools are such that budgets are cut, timetables are challenging, and these have an impact not only on financing CPD but on our ability to share good practice.

The Teachers' Agreement (2001), report on teacher effectiveness (Hay McBer, online) and the Scottish Consultative Council on the Curriculum (1995) all support the need for teachers to work together. The Scottish Government (2008) requires that learners' experiences should be more holistic, active and prepare them for a changing and developing society. There is a sense that active learning is required at all stages in a school with staff and with pupils.

In our schools today there is, at best, limited opportunity for staff to work together despite the impact of the Teachers' Agreement (2001). Within the agreement the need for teachers

to work together was identified but this is more common in the primary than secondary sector. Staff must be given an opportunity to work in this way as should pupils.

Authorities need to acknowledge that there are reasons why practitioners can be reluctant to engage in active learning and address this through providing the network and CPD support to do so. Local Authority 2 in this research has made significant moves to establish this with its teachers. Local Authority 1 in this research embraces the notion of active learning and provides some online support, but to be effective this will need to involve practitioners in active, experiential learning themselves. It has become evident within this thesis (by looking at research on learning and how we learn) that it is important that active learning be included for all.

6.6 The Future

Cooperative learning is a well researched pedagogy in the United States and Canada but there is significantly less research found in Scotland. As a result of this thesis, and the increasing engagement with this pedagogy in our education system, it would be appropriate to implement further research into this area in Scotland. It may be possible to conduct a positivist study in the near future given the number of Local Authorities in Scotland who now regard training in this area as important for their teachers (14 Authorities as of October 2008).

6.7 *Is Cooperative Learning an Appropriate Pedagogy to Support the Four Capacities of Curriculum for Excellence?*

This study shows that cooperative learning pedagogies are an excellent means of supporting the four capacities of *Curriculum for Excellence*. Cooperative learning is an effective, efficient and productive way to engage learners regularly in the skills and qualities that are required in our young people today.

The four capacities of successful learners, confident individuals, responsible citizens and effective contributors can be regularly explored and supported on a day-by-day and period-by-period basis when practitioners have the opportunity to be appropriately trained in this pedagogy.

The aim of this study was to investigate whether cooperative learning could support the four capacities of *Curriculum for Excellence*. Through the literature review consulted and analysed, and the data gathered and interpreted, a clear case can be made that this pedagogy, being grounded in research and supported by a body of literature, clearly shows that the four capacities of *Curriculum for Excellence* are always engaged when cooperative learning takes place.

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Appendix 1Pupil QuestionnaireIs cooperative learning an appropriate methodology to support the 4 capacities of Curriculum for Excellence?

Thank you for taking the time to complete this questionnaire. Please answer the questions as honestly as you can. Your identity will be protected. There is space for comments at the end if you have anything else you would like to add. Please put a circle round your chosen answers.

These questions are about you.

1. a. Boy
 b. Girl

2. a. S1
 b. S2
 c. S3
 d. S4

These questions are about how you like to learn.

3. I learn best in class:
 - a. when I work with a partner
 - b. when I work as part of a group or a team
 - c. when I work on my own
 - d. with whole class teaching
 - e. other _____

4. I feel confident in class when:
 - a. the teacher asks me questions
 - b. I work on my own
 - c. I can discuss my ideas with others in my group
 - d. other - _____

5. I lack confidence in class when:
 - a. the teacher asks me questions
 - b. I work on my own
 - c. I can discuss my ideas with others in my group
 - d. other - _____

6. I show responsibility in my class by: (chose which one applies to you – you may chose more than one)
 - a. listening carefully to others
 - b. being respectful of others opinions or ideas
 - c. respecting and understanding different beliefs and cultures
 - d. making decisions that are fair and affect the whole group
 - e. other - _____

7. I contribute effectively to my group by: (chose which one applies to you – you may chose more than one)
- always taking a full part in activities
 - making sure I always complete my role
 - giving ideas to the group
 - taking a full part in research projects and presentations
 - other - _____
8. The activities I most enjoy in the classroom are:
- working on my own
 - working in groups
 - whole class teaching
 - working on projects
 - other _____
9. I like these activities because:
- I feel I learn more
 - I feel more involved
 - I can concentrate and work on task more
 - I can discuss things and hear other opinions
 - other _____
10. I prefer when my teacher:
- has class discussions
 - talks to me
 - talks to the whole class
 - lets us work together

These questions are about cooperative learning.

11. What do you understand by the term cooperative learning?
- learning together
 - team work
 - group work
 - depending on and helping one another
12. I would like more cooperative activities in the classroom because:
- it increases my confidence
 - I get a fuller understanding of the topic
 - you get to hear other ideas
 - it is a fun way to learn
 - other _____

13. I would like less cooperative activities in the classroom because:
- a. it can take too long to get others to understand
 - b. some people don't work well together
 - c. I can get sidetracked
 - d. none – I always enjoy it
 - e. other _____
14. Thank you for completing this questionnaire, please write anything else you want to say about cooperative learning below:

Appendix 2

Group interview questions for pupils in Case Study school

Is cooperative learning an appropriate methodology to support the 4 capacities of *Curriculum for Excellence*?

Thank you for agreeing to take part in this group interview. During the group interview you will be asked to share your thoughts and opinions on different ways of learning in the classroom. It is hoped you will give some idea of how you think your classroom learning has helped you to be a successful learner, confident individual, responsible citizen and effective contributor.

1. What is your favourite way of learning in the classroom and why is this?
2. Do you think you learn better this way and can you give a reason for this?
3. In what ways have you contributed to cooperative learning activities in the classroom? For example do you work well with others in your group, ask questions that help your understanding, take part in discussions or any other way you can think of?
4. Do you feel a sense of responsibility to your group? What is that like? In what ways have you or others been responsible?
5. Do you feel confident in your cooperative learning group and in the classroom? What makes you feel confident? Is there anything that could help your confidence?
6. Given the choice would you chose to work more in cooperative learning groups or more on your own? Why is this?
7. Are there any other points you would like to make or discuss about cooperative learning?

Appendix 3**Group interview (for Case Study school in Local Authority 1)****Is cooperative learning an appropriate methodology to support the 4 capacities of Curriculum for Excellence?**

Thank you for agreeing to take part in this group interview. During the group interview you will be asked to share your opinions and thoughts on the questions below. The aim of the group interview is to gather data on how and in what ways you perceive cooperative learning techniques can help to develop successful learners, confident individuals, responsible citizens and effective contributors.

1. Have you had formal training in cooperative learning (or critical skills) techniques? What did that training consist of? If not, what form does your group work take
2. How often do you involve your classes in cooperative learning? Is there scope for more group involvement?
3. Do you teach social skills in your cooperative lessons?
4. What cooperative learning techniques have you used and how effective have you perceived them to be?
5. Do you perceive group activities as benefiting your pupils? If yes, why? If no, why?
6. What would you outline as the strengths, if any, of cooperative group work?
7. What are the limitations, if any, of cooperative group work?
8. In what ways do you think cooperative group work can support the 4 capacities of the new curriculum by helping to develop successful learners, confident individuals, effective contributors and responsible citizens?

Appendix 4**Interview questions for Development Officer in Local Authority 2****Is cooperative learning an appropriate methodology to support the 4 capacities of Curriculum for Excellence?**

Thank you for agreeing to this interview.

1. The evaluative report by Strathclyde University on the Authority's Cooperative Learning Project was published in April 2007. This report highlighted a number of strengths in pupil social skills development and a majority in support of cooperative learning from teachers and pupils. Do you believe that overall this report is a fair reflection of the impact of cooperative learning in North Lanarkshire schools?
2. The report highlights the strengths of the 'Academy' as a means of delivering CPD on cooperative learning. Is your role now to enhance and support this initial training?
3. Given that all staff were given the opportunity to 'opt in' to this training what has the uptake been? Are there any particular groups of teachers who have been motivated by or resistant to training in this area or can you explain your role as a Development Officer further?
4. The report indicates a greater implementation of cooperative techniques in the Primary sector can you give any possible explanations for this? Do you think this specific to North Lanarkshire or a possible feature of the way schools are organised in the Primary and Secondary sectors?
5. From the teachers you interact with what is your opinion about the confidence teachers may feel in delivering social skills teaching in their lessons as is a feature of cooperative learning?
6. This Local Authority appears to be committed to cooperative learning for the long term. Can you give some understanding of why this is? Why has this Local Authority opted for cooperative learning?
7. Drawing on the feedback you have received from staff can you highlight some specific ways that cooperative learning is thought to bring benefits in the classroom and to our young people in general?
8. Given your experience of and with cooperative learning in what ways do you think cooperative learning can help develop the 4 capacities of *Curriculum for Excellence*?

Appendix 5**Tally Sheet for observation of cooperative activities in the classroom.**

5 bar gate tallying will take place over set periods of 1minute observation with each pupil participating.

Date:		Observer:		Class:			
Pupil No:	Confident Individuals	Effective Contributors	Successful Learners	Responsible Citizens	Comments		
	-Self respect -Self aware -Relates well to others -Secure beliefs	-Work in partnership and teams -Communicates positively -Thinks through problems -Problem solve -Contributes ideas	-Enthusiasm -Motivation -Openness to new ideas -Determined to reach high standards	-Respect for all group members -Develop knowledge and understanding of the world and Scotland's place in it -Understand different beliefs and cultures			
	-Self respect -Self aware -Relates well to others -Secure beliefs	-Work in partnership and teams -Communicates positively -Thinks through problems -Problem solve -Contributes ideas	-Enthusiasm -Motivation -Openness to new ideas -Determined to reach high standards	-Respect for all group members -Develop knowledge and understanding of the world and Scotland's place in it -Understand different beliefs and cultures			
	-Self respect -Self aware -Relates well to others -Secure beliefs	-Work in partnership and teams -Communicates positively -Thinks through problems -Problem solve -Contributes ideas	-Enthusiasm -Motivation -Openness to new ideas -Determined to reach high standards	-Respect for all group members -Develop knowledge and understanding of the world and Scotland's place in it -Understand different beliefs and cultures			
	-Self respect -Self aware -Relates well to others -Secure beliefs	-Work in partnership and teams -Communicates positively -Thinks through problems -Problem solve -Contributes ideas	-Enthusiasm -Motivation -Openness to new ideas -Determined to reach high standards	-Respect for all group members -Develop knowledge and understanding of the world and Scotland's place in it -Understand different beliefs and cultures			

Appendix 6**UNIVERSITY of GLASGOW****Faculty of Education****Ethics Committee for Non Clinical Research Involving Human Subjects*****EAP2 NOTIFICATION OF ETHICS APPLICATION FORM APPROVAL*****Application No.** *(Research Office use only)*

E897 - 2

Period of Approval *(Research Office use only)*
31 May 2008

31 January 2008 to

Date: 14 February 2008

Dear Clare

I am writing to advise you that your application for ethical approval, reference E897 for 'Is cooperative learning an appropriate methodology to support the 4 capacities of *Curriculum for Excellence*?' has been fully approved, following your fulfilment of the required amendments.

You should retain this approval notification for future reference. If you have any queries please do not hesitate to contact me in the Research Office and I can refer them to the Faculty's Ethics Committee

Regards,

Terri Hume
Ethics and Research Secretary

Appendix 7

Faculty of Education

CONSENT FORM

Title of Project: Is cooperative learning an appropriate methodology to support the 4 capacities of *Curriculum for Excellence*?

Name of Researcher: Clare McAlister

1. I confirm that I have read and understand the Plain Language Statement for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.
3. I consent to being observed in the class (pupil) and to interviews being audio taped (all). *(Copies of transcripts will be returned to me for verification - participants will be referred to by ID number and no reference to identity will be involved in any publications arising from the research.) (For pupils - participant or non-participant in the research will have no affect on grades, assessment or employment).*
4. I agree/do not agree (delete as applicable) to take part in the above study.

Name of participant	Date	Signature
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Name of Person giving consent (if different from participant, eg Parent)	Date	Signature
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Researcher	Date	Signature
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FACULTY OF EDUCATION

Plain Language Statement

1.

University: Glasgow University
 Department of Educational Studies

Title of Project: Is cooperative learning an appropriate methodology to support the 4 capacities of *Curriculum for Excellence*?

Researcher: Clare McAlister

Supervisor: Dr Margery McMahan

Degree: Master of Philosophy (M Phil) by research

2.

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. This research will be included in a thesis submission for a research degree. The degree is a Master of Philosophy at Glasgow University. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

3.

The purpose of this study is to explore a learning methodology (cooperative learning) and the new curriculum. Cooperative learning gives the opportunity to work together while learning. In Scotland the school curriculum is changing and it is now known as the *Curriculum for Excellence*. As part of this curriculum the aims are that young people will develop in the 4 capacities. The 4 capacities are; successful learners, confident individuals, effective contributors and responsible citizens. The purpose of the study is to investigate if cooperative learning can help develop the skills, behaviours and attitudes required to develop and support the 4 capacities.

4.

Pupils

As a pupil you have been chosen because of your class. It is hoped that approximately 4 classes can take part involving approximately 100 pupils.

Teacher

As a teacher you have been chosen because of your experience in working with groups. It is hoped that approximately 6 participants will take part

5.

It is up to you to decide whether or not to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. If you decide not to take part this will have no negative impact on you. You will still take part in the class but no data will be gathered from you.

6.

Pupils

If you take part data will be gathered on your work and interactions in class. The data will be gathered by observing you working in your group. You may also be asked to take part in a group interview. Interviews may be audio taped but you will only be identified by an ID number. Interviews will be made into written documents and used only for the purpose of analysis. The data will be gathered over approximately 4 months. All data will be destroyed at the end of the research.

Teacher

As a teacher you will be asked to take part in a group interview that will be audio taped. Your identity will be protected and identification will only be by an ID number. Interviews will be made into written documents and used only for the purpose of analysis. The interviews should only last an hour and will be arranged during a time that is convenient to you. You will be asked to explore some questions in relation to cooperative work within the classroom. It may be requested that you take part in a follow up group interview. All material will be destroyed at the end of the research.

7.

All information, which is collected, about you during the course of the research will be kept strictly confidential. You will be identified by an ID number and any information about you will have your name and address removed so that you cannot be recognised from it.

8.

The results of the research will be published at *Glasgow University* as a submission for an M Phil degree. The report may also be prepared for dissemination in academic and/or practitioner journals.

The results of the research are likely to be published in 20-24 months (September/October 2009).

You will not be identified in any report or publication.

You can obtain a copy of the published results from *Glasgow University*.

As a participant you will be provided with feedback at regular intervals during the progress of the project.

9.

The research is being completed as a post-graduate degree at *Glasgow University* and there is no external sponsor or funding body involved.

10.

The study has been reviewed by the Faculty of Education Ethics Committee.

11.

You can contact my supervisor Dr Margery McMahon

M.McMahon@educ.gla.ac.uk for further information. If you have any concerns regarding this research you may get in touch with the Faculty of Education Ethics Officer by contacting Dr George Head at G.Head@educ.gla.ac.uk.

Thank you very much for agreeing to take part in this study.

Appendix 9

4th February 2008

Copy of letter to Local Authority 2

Dear

M Phil research into cooperative learning strategies

I am writing to request permission to contact Development Officers in relation to research into Cooperative Learning in *(name removed)*.

I have recently returned to my full time post as PT Geography at *(school name removed)* following a 2 year secondment at Glasgow University. At Glasgow I was involved in a training programme on cooperative learning with *(name removed)* and I am now implementing this in my department. I am also undertaking a Masters of Philosophy at Glasgow University investigating whether cooperative learning is an appropriate methodology to support the 4 capacities of *Curriculum for Excellence*. I am conducting research in Smithycroft Secondary School with teachers and pupils. I would also like to interview some of your staff, with their permission, in relation to the impact cooperative learning has on learning and on delivering the 4 capacities of *Curriculum for Excellence*. It is hoped that if the Development Officers think it is appropriate that I may also conduct a group interview with approximately 6 secondary teachers involved in cooperative learning.

All participants will be supplied with a plain language statement and a consent form to complete. All data gathered will be stored in a locked cabinet or on a computer with a password. All data will be destroyed at the end of the research. All identities will be protected by the use of ID numbers. No individual will be identified at any time.

If you require further information in relation to this it can be obtained from my supervisor Dr M McMahan at M.McMahon@educ.gla.ac.uk.

Yours truly,

Clare McAlister
(Address removed)

Appendix 104th February 2008Copy of letter to Local Authority 1

Dear

M Phil research into cooperative learning strategies

I am writing to request permission to undertake research into the use of cooperative learning strategies to assist in the delivery of the 4 capacities of *Curriculum for Excellence*. This is as part of a Master of Philosophy research degree I have undertaken at Glasgow University. This research will involve pupils and staff. Teaching staff who have been involved in critical skills training or group work will be invited to take part in a group interview in relation to their experience. Pupils in Geography will be taught in cooperative learning groups and invited to take part in group interviews and to complete questionnaires about their learning experience. Participating pupils will also be observed when working in their cooperative learning groups.

The period of data gathering will be approximately 4 months. It is hoped that this experience will benefit pupils by helping them develop the skills, behaviours and attitudes that are fundamental to the 4 capacities of *Curriculum for Excellence*.

It is hoped that approximately 100 pupils will participate along with approximately 6 members of staff. All participants will be supplied with a plain language statement and a consent form to complete. All data gathered will be stored in a locked cabinet or on a computer with a password. All data will be destroyed at the end of the research. All identities will be protected by the use of ID numbers. No individual will be identified at any time.

If you require further information in relation to this it can be obtained from my supervisor Dr Margery McMahon at M.McMahon@educ.gla.ac.uk.

Yours truly,

Clare McAlister
(Address removed)