Exploring associations between classroom relationships and learning for children with Autism Spectrum Disorders and Behavioural, Emotional and Social Difficulties

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Abstract

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Exploring associations between classroom relationships and learning for children with Autism Spectrum Disorders and Behavioural, Emotional and Social Difficulties

A growing body of research supports the suggestion that the relationships which children form with their teachers and classmates have an impact on learning (Roorda, Koomen, Spilt, & Oort, 2011). Largely built on studies with typically developing children, the current understanding of the relationship-learning association is that these relationships can impact upon learning either by directly improving the quality of pedagogy or through mediating factors such as increased pupil motivation (Martin & Dowson, 2009). The aim of this study was to expand the discussion and evidence base surrounding relationship-learning association to include pupils with Autism Spectrum Disorders (ASD) and Behavioural, Emotional and Social Difficulties (BESD). Previously these groups were not directly addressed by this literature, yet there is evidence from both government-compiled (Department for Education, 2011d) national statistics and independent research (e.g. Symes & Humphrey, 2010) that these groups are at risk of poor academic and social outcomes. While classroom relationships might be an ingredient of superior teaching of children with special educational needs (Dyson, Farrell, Polat, Hutcheson, & Gallanaugh, 2004), it was hypothesised that difficulties commonly associated with either or both of these groups, such as communication problems (Cashin, 2005; Lindsay, Dockrell, & Strand, 2007) may serve to influence the nature and salience of the relationship-learning association.

The study used a mixed methods design, incorporating a multiple regression analysis to determine whether changes in teacher or peer relationship quality over 18 months predicted attainment relative to other plausible predictors at the end of that period (N= ASD:143 BESD: 648) and an embedded, multiple case study (Yin, 2011) analysis around two children from each group to determine how the facets of their individual educational needs and other contextual factors influenced the importance and nature of the relationship-learning association in their education.

Multiple regression models indicated that relationship change was not a statistically significant predictor of attainment other than peer relationship change for pupils with BESD, where the effect size implies that some academic benefits may accrue at group level from successful relationship interventions. Case study analysis suggested that many of the factors reducing the likelihood of relationships directly improving attainment also make them more important to the effectiveness of teaching and the classroom functioning of pupils. Implications and directions for future research are also discussed.
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The author

Prior to this investigation the author completed degrees in Social and Political Sciences (BA) at the University of Cambridge and the Psychology of Education (MEd) at the University of Manchester. He also spent two years working with children who have special educational needs, largely as a teaching assistant. He has recently begun training as an Educational Psychologist at University College, London.
1 - Introduction

In responding to the systemic failings across children’s agencies that contributed to the death of Victoria Climbié in 2000 (Her Majesty’s Stationery Office, 2003), the then Department for Education and Skills published a set of Green Papers (e.g. Department for Education and Skills, 2003) under the general title ‘Every Child Matters’, which was enshrined in law by the Children Act 2004 (Her Majesty’s Stationery Office, 2004). Central to the agenda within these documents, which were widely seen as a change from the accent within previous legislation (R. Barker, 2008), was a directive for those working with UK children to give them the necessary support for the following outcomes:

1. Be healthy
2. Stay safe
3. Enjoy and achieve
4. Make a positive contribution
5. Achieve economic well-being

One result of the promotion of this holistic set of objectives was that schools had a clear legislative mandate to consider the development of their pupils in a broad manner, an important message in the context of ongoing governmental pressure on UK schools to deliver high pupil attainment (Squires, 2012) as witnessed by the public league tables ranking schools by this particular outcome.

Following the change in government in 2010, the now Department for Education has set about formulating a new vision for the sector through a new Green Paper (2011e). Recently this has included a draft of legislative changes to provision for children and young people with special educational needs¹ (SEN) that reflect the change in emphasis (Her Majesty’s Stationery Office, 2011).

¹ Subsequently referred to as ‘SEN’
Office, 2012). The draft legislation does not maintain the prior set of outcomes, replacing them with emphases on parental choice and reducing group differences in academic attainment as well as operational objectives such as improved multi-agency working.

Overall, the clear vision of the Every Child Matters agenda (Department for Education and Skills, 2003) and its holistic mandate for educators appears to have been short-lived despite the drastic circumstances behind its conception. In archiving this directive, the UK government is also abandoning a message that was aligned with mounting evidence in the sphere of educational psychology suggesting extensive linkage between the factors underpinning children’s academic attainment and other aspects of their development.

This thesis considers the literature concerning one particular link, which is the association between classroom relationships and learning. It focuses this discussion for the first time on children with Autism Spectrum Disorders² (ASD) and Behavioural, Emotional and Social Difficulties³ (BESD) as defined by the government’s SEN ‘Code of Practice’ (Department for Education and Skills, 2001), two particular groups of children who are particularly at risk of poor outcomes both in terms of attainment and more broadly (Department for Education, 2011d). As relatively vulnerable groups, these children therefore have more at stake when the government makes large-scale changes to the objectives set for their schools.

In terms of provision for children with SEN, the ramifications of recent policy change are not yet known. Although the language used (Department for Education, 2011e) appears to suggest prioritisation of placing more children with SEN in special schools within a broader strategy of increasing parental choice, it has been pointed out that national levels of special school

² Subsequently referred to as ‘ASD’
³ Subsequently referred to as ‘BESD’
placement remained stable during the Labour years that are now characterised by the coalition government as displaying ‘bias towards inclusion’ (Norwich, 2012, p. 53). Sidestepping political rhetoric, the inclusion debate has been categorised (Cigman, 2007) as containing ‘universal’ and ‘moderate’ camps depending on whether one asserts the ideology that mainstream schools should accommodate all pupil needs and that special schools hinder this imperative, or whether one balances that ideal with the acknowledgement that pupil needs may sometimes better met by specialists.

The moderate stance has also been labelled ‘optimal’, recognising the need to balance issues of ‘placement, participation, belonging and achievement’ in making placement decisions for children with SEN (Norwich, 2012, p. 62). This appears consistent with the Every Child Matters objectives detailed above as well as practice frameworks used by educational psychologists, who are often heavily involved in such decisions in the UK (e.g. Monsen & Frederickson, 2008). Such a process benefits from an evidence base, although a recent picture of the relative academic and social advantages associated with mainstream versus specialist provision is currently lacking (Lindsay, 2007). However, a multiple case study investigation of 16 schools with unusually high proportions of pupils with SEN (Dyson, et al., 2004) found that teaching approaches flexible to individual pupil traits were a crucial common characteristic in the more successful schools. Flexible pedagogy went on to be part of a recommended model of inclusive provision. Positive teacher-pupil relationships were prominent in the detailed observations of this approach. This study thus expands on existing suggestions that classroom relationships may enhance not only learning but also inclusive learning.

Relative to other points in the life-cycle of citizens, those at school age are particularly accessible to employees of the state due to the time that the majority of children spend in state-maintained schools. With children, it
may also be possible to act on evidence from the ever-expanding psychological literature in a manner that prevents negative outcomes such as criminal behaviour or long-term unemployment that are strongly linked to developments at school (e.g. Healey, Knapp, & Farrington, 2004). In terms of the government’s commitment to reducing socioeconomic disadvantage (Her Majesty’s Stationery Office, 2010) this is clearly superior to interventions which simply react to such problems and may also be significantly more cost-effective. However perhaps the most important advantage of preventative approaches is for the individuals whose prospects are improved, and their families both present and future.

As such, schools provide a unique opportunity for the state to deliver psychologically-informed interventions that can span almost entire generations for the betterment of individuals, communities and society. Therefore developing our understanding of links between developmental processes and outcomes among children is important not only theoretically but also practically on a number of ecological levels (Bronfenbrenner, 1979). In this political climate, a holistic notion of child development may need promoting more than at any other time in the previous decade while the potential application of this to the inclusion debate may also be timely given the recent economic imperative for low-cost, sustainable solutions.

This investigation makes a direct contribution to this scene by exploring the nature and extent of the relationship-learning association among children with ASD and BESD. Should this potential linkage emerge as a powerful educational influence, there will be increased evidence for aspects of interrelatedness within child development, and a contribution to knowledge that has direct practical application for two particularly vulnerable groups within the UK.

However, the issue is also rendered more pertinent by the possibility that data suggesting a relatively weak relationship-learning association for these
children may be collected. Despite the convincing body of evidence and theory behind the relationship-learning association among typically developing children, the forthcoming literature review suggests that given the other issues commonly associated with them it would not be surprising to find that the linkage was of lesser importance.

The literature review therefore attempts to draw together general evidence concerning the relationship-learning association with investigations specifically relating to children with ASD and BESD in order to make predictions about the likely strength and nature of the relationship-learning association among these groups. Does our current understanding of these children mean that we would expect the relationships surrounding them in the classroom to influence their learning any differently than their typically developing peers? Could any such differences be applicable at group level?

A note on fieldwork context

This study utilises data collected by the research team evaluating Achievement for All (Humphrey et al., 2011), a national project launched by the Department for Children, Schools and Families to improve a range of outcomes for pupils with special educational needs. The author was part of the research team and collected all qualitative data used in the study.

This context confers both advantages and constraints. For the quantitative phase of the study, the advantages were size of quantitative sample, range of variables to include in, breadth of collective experience in writing valid, readable survey items, and IT support in using a website for the survey online. Constraints were that less than a third of items used in the survey were relevant to the study, compromising the reliability of the relationship measures and reducing the potential for individual items to refer to specific aspects of relationships.
For the qualitative phase, there was a good opportunity for case study work in terms of being able to have multiple visits over an 18 month period involving multiple interviews with parents and interviews with a range of staff members working around the child. This meant, for example, that experiences of teachers with more and less positive relationships with case study children could be compared. Constraints were that the researcher could not focus exclusively on thesis research questions in planning visits or semi-structured interview schedules, limiting the extent of data collection.
2 - Literature review

2.1 - Relationship-learning association

2.1.1 - Definitions

The phrase ‘classroom relationships’ in this thesis refers to relationships that pupils have with peers (peer relationships) and teachers (teacher relationships). ‘Teacher’ as defined here does not refer to professional qualification but to the member of staff who is teaching the pupil. In terms of pupils with ASD, this is often a teaching assistant (Hemmingsson, Borell, & Gustavsson, 2003).

Viewing a class of children as a social collective, their behaviour and interpersonal activity is arguably influenced by two simultaneous processes (Farmer, Lines, & Hamm, 2011). Adults in schools set expectations and rules for interaction. They also create particular types of interaction opportunity for pupils according to their own beliefs and try to stop non-preferred interaction types. However while teachers may be largely successful in dictating social parameters, pupils interact in response to each other as well as in response to the teacher, and import various tendencies from the examples set by peers (Cairns & Cairns, 1994) as implied by social learning theory (Berndt, 1999). This review presents conceptual and empirical support from multiple theoretical schools that classroom relationships and their constituent interactions within both teacher-influenced and peer-influenced social worlds (Youniss, 1980) are influential upon academic processes and outcomes (e.g. Hattie, 2009). Whether or not these ‘worlds’ are experienced as distinct by pupils is not the subject of this thesis, which considers the aggregate of classroom relationships, yet integrates literature considering them separately into the discussion.
Twenty years ago, authors commented that ‘although teacher-child relationships may have tremendous impact in altering the course of school adjustment they have not been subjected to any systematic empirical research’ (Pianta & Steinberg, 1992, p. 62). Although both teacher and peer relationships are now the focus of many articles, discrepancies in how to measure them are unresolved, although various meta-analyses (Cornelius-White, 2007; Hattie, 2009) and other recent articles (Murray-Harvey, 2010) have attempted to distil the traits of positive classroom relationships that are emerging from research.

Generally, classroom relationships are either reported directly or via other factors seen as indicators of positive relationships. Direct measurements are based on participant self-report of relationship quality (Cullen & Monroe, 2010; den Brok, Van Tartwijk, Wubbels, & Veldman, 2010) whereas observed confirmatory factors fall within a fairly broad spectrum. Empathy and emotional warmth (Wilson, Pianta, & Stuhlman, 2007) are the most universal criteria that observers have used to quantify or judge the quality of teacher relationships. These judgements have also been based upon elements of teaching practice such as feedback (Ferreira & Bosworth, 2001) or teacher attitudes, such as level of expectations for a given pupil (National Research Council and the Institute for Medicine, 2006) that influence teacher-pupil interactions to the extent of shaping the relationship itself. Peer relationships are often characterised in terms of friendship (Berndt, 2002) versus exclusion and victimisation (Buhs, Ladd, & Herald, 2006) although they can also be judged on particular observable behaviours such as interactive versus disruptive or disconnected play (Fantuzzo & McWayne, 2002) or relevant self-reported perceptions, including loneliness (Parker & Asher, 1993).

The combination of assessing classroom relationships both directly and in terms of distinct, but related phenomena that triangulate direct measurements is mirrored in this thesis. Teacher and parent reports in the
questionnaire used in phase 1 contain both direct (e.g. this child has a good relationship with at least one teacher) and indirect (e.g. this child can take turns with others) items. The pattern was repeated in the questions posed to parents, teachers and pupils in semi-structured interviews during phase 2.

‘Learning’ is a similarly broad concept with a range of possible meanings and associated measures. The most common learning outcome within the literature presented here is academic attainment in the form of teacher reported grades (e.g. den Brok, et al., 2010; Maldonado-Carreno & Votruba-Drzal, 2011; Murray & Malmgren, 2005) although some research reports on a more holistic set of learning outcomes inclusive of constructs such as creative and critical thinking (Cornelius-White, 2007). This thesis subscribes to the latter definition of learning as something that cannot be reduced to academic attainment. Although the phase 1 of this investigation uses teacher-reported attainment as the sole measure of learning, phase 2 is less specific with interview questions referring to ‘learning’ or ‘the learning process’ rather than ‘attainment’ or ‘grades’. While this inconsistency could be interpreted as a limitation and is addressed in the methodology chapter, incorporating a more delineated learning measure within the study allows it to build on an established line of research to ask a practically significant question. The contribution of this strand to the overall project can then be interpreted in the light of qualitative evidence that has considered learning more broadly.

The term ‘relationship-learning association’ in this enquiry thus refers to both teacher and peer relationships including the interactional qualities that illustrate them and refers to learning in a sense that includes outcomes beyond academic attainment. This enables the following sections within this subchapter of the literature review to draw together a range of empirical and theoretical sources, but provides a challenge in terms of integrating these contributions into a coherent theoretical framework to apply to the literature on ASD and BESD and the rest of the thesis.
2.1.2 - Developmental context of the relationship-learning association

Positive classroom relationships are characterised by the display of certain behaviours that are thought to reflect them. For example, negative teacher relationships have been conceptualised in terms of the display or report of conflict and dependency (Doumen et al., 2008). Many of the phenomena measured as a means of assessing classroom relationships are also strongly connected to other areas of substantial theoretical and empirical interest such as emotional understanding (Denham et al., 2003; Denham et al., 2002; Ensor & Hughes, 2005) or social competence (Burchinal et al., 2008). It is difficult to separate classroom relationships from their developmental correlates as many psychologists agree that the processes of maturation and of learning are likely to be effected by a multiplicity of intrapersonal and interpersonal factors (Bronfenbrenner, 1979).

Also difficult is distinguishing between classroom relationships and these associated factors in terms of identifying which of them have direct effects on learning outcomes. The concepts of moderation and mediation (Baron & Kenny, 1986) are useful, in that one can ask whether the relationship-learning association could be caused by a third factor that may change as a result of relationships in a way that influences learning (mediation) or whether other factors may increase or decrease the importance of the association (moderation). There is mounting evidence that the relationship-learning association may be mediated, for example by pupil academic engagement as a meta analysis of 99 studies of teacher relationships (Roorda, et al., 2011) found that they had a stronger impact on engagement than achievement, and that where data was available engagement was significantly correlated with achievement. Whilst the full breadth of plausible factors that could mediate the relationship-learning association cannot be addressed by this thesis, it seems necessary for this subchapter to consider not only evidence linking classroom relationships with learning outcomes, but with other outcomes which are potential mediators as they may have an impact on learning themselves. The factors suggested as potential
moderators of the relationship-learning association for children with ASD and BESD are largely discussed within subsequent subchapters.

2.1.3 - Classroom relationships and academic outcomes

2.1.3.i - Teacher relationships

A number of reports have indicated that teacher relationships have direct bearings upon learning processes (e.g. DiLalla, Marcus, & Wright-Phillips, 2004). In some cases these studies have demonstrated the strength of the link directly, for example as a correlation (e.g. Murray-Harvey, 2010) while others have attempted to outline this association in terms of more particular details, such as aspects of teaching practice that tend to be superior when teacher relationships are positive or of pupils’ reactions to warmth from teachers.

Early reports suggested that compassionate teachers could promote higher achievement while improving other outcomes such as class cohesion (Haertel, Walberg, & Haertel, 1981), pupil enjoyment and academic motivation (Wubbels & Levy, 1991). Further studies building on this strand include evidence that teacher sensitivity and emotional warmth were linked to improved academic outcomes among a cohort of 5-6 year-old children (Hamre & Pianta, 2001) and that ‘emotional quality’ of teaching was linked to reading and numeracy progress over five years of primary school (Pianta, Belsky, Vandergrift, Houts, & Morrison, 2008). The latter study also found evidence that the usual tendency of diminishing returns in literacy interventions over time due to over-exposure was not present when the ‘emotional quality’ of teaching was high.

A more recent study (den Brok, et al., 2010) split teacher relationship quality into two constructs: ‘proximity’ and ‘influence’. This distinction had meaningful results as proximity, which was similar in definition to ‘warmth’, was positively associated with pupil subject attitude and report card grade,
whereas ‘influence’ was negatively associated with report card grade. Such evidence implies that in terms of academic benefits, teacher relationships are better served by emphasis on trust and support rather than obedience and discipline. In a useful review of theories linking academic outcomes with teacher relationships, Martin and Dowson (2009) espouse a similar ethos with a more motivational accent, stating that teachers and teaching both appear better motivators for pupils when they connect to them interpersonally. The review suggests that where this occurs, academic outcomes improve.

Another article (Murray-Harvey, 2010) which found that supportiveness within teacher relationships was linked to academic performance ($r=.33$) has suggested that supportive teacher relationships are linked to particular elements of teaching such as modelling (Bandura, 1997) and constructive feedback (Weiner, 1986) which are crucial to academic outcomes. This teaching style is claimed to enable teachers to imbue pro-academic values (Wentzel, 1998), promote persistence and challenge anxiety when tasks challenge the pupil (La Guardia & Ryan, 2002) and motivate pupils to engage in their learning (Deci & Ryan, 2000; Hareli & Weiner, 2002). Modelling and feedback are also linked with listening to and showing respect towards pupils (Goodenow, 1993) and sincerely understanding them (Connell & Wellborn, 1991).

Teacher relationships have been linked to improved academic outcomes regardless of gender (Birch & Ladd, 1998) and across kindergarten and primary school ages, both within participants and between participants (Maldonado-Carreno & Votruba-Drzal, 2011). A fairly recent meta-analysis (Cornelius-White, 2007) generated distinct effect sizes for specific aspects of teacher relationships and academic outcomes. The overall finding from 119 studies was that teacher relationship quality was positively correlated with academic outcomes ($r=.36$). Influential teacher variables were nondirective teaching, empathy, warmth and encouraging pupils to think.
The analysis also considered the impact of positive teacher relationships on distinct pupil outcomes. The most improved cognitive outcomes were creative and critical thinking, mathematics, verbal ability, IQ and academic grades. Behavioural and affective outcomes were generally more influenced, with participation and satisfaction both correlated over $r=.4$.

The author concluded that this analysis bore out the concept of ‘learner-centered education’, which is based on Rogers’ principles of client-centered therapy (1951) and emphasises the importance of teachers showing pupils unconditional positive regard, empathy, trust warmth and encouragement of thinking in order to facilitate the ‘whole and fully functioning person’ (Cornelius-White, 2007, p. 114). As demonstrated by the range of outcomes measured in the meta-analysis, this concept of teacher relationships is designed not only to improve attainment but other elements of the learning process such as creative thinking which may not only feed into grades but also into a child’s broader education. The study suggests that there are multiple ways in which teacher relationships can influence education that are ‘cognitive, affective and motivational’ (p. 115).

Another meta-analysis (Roorda, et al., 2011) built on the above investigation by looking at studies measuring both positive and negative aspects of teacher relationships and the impact of these relationship qualities on pupil engagement and achievement. While engagement was generally more influenced than achievement, all studies included found significant associations between teacher relationships and achievement. Interesting patterns emerged regarding the differential academic impact of positive and negative aspects of relationships. Contrary to prior research (e.g. Hamre & Pianta, 2001), negative aspects were not more influential than positive aspects. However, this trend was present among primary school children, who were the focus of those earlier reports.
An unexpected finding was that negative aspects were more influential in studies with more months between measurement of relationship and achievement or engagement, whereas the reverse was true for positive aspects. The authors hypothesised that this supported suggestions (Jerome, Hamre, & Pianta, 2009) that closeness, relative to conflict, is a dyadic construct that is less associated with child characteristics and thus less stable over time whereas the ‘cascading impact of negative teacher-student relationships and children’s externalising behaviours may become more strong over time’ (Roorda, et al., 2011, p. 517)

A particularly wide array of evidence was considered in a review of 800 meta-analyses of academic achievement (Hattie, 2009). A model for high achievement termed ‘visible learning’ emerged from the analysis and recommendations regarding teacher relationships were a part of this. These included that teachers should be constantly aware of how much pupils know and understand, that they should have high expectations of pupils, and that they should give feedback that demonstrates understanding of the student’s perspective. This recommendation bears out the theories of Dewey (1897) and Brown and Campione (1996) that are outlined in the next subchapter. The other points also resound with other individual studies, for example the National Research Council (2006) reported that high teacher expectations of student behaviour and attainment can affect motivation, and Murray and Malmgren (2005) found that academic outcomes improved after an intervention where teachers met pupils each week to set in-school and out-of-school goals and feedback to pupils regarding progress on prior goals.

However, despite longitudinal evidence it would be too simplistic to assume that correlations between teacher relationships and learning outcomes suggest a general causality. In fact, there is evidence that the association is bi-directional in that teachers have been found to show a preference for
building relationships with students who are easier to teach (Van Maele & Van Houtte, 2011) and more cooperative (Newberry & Davis, 2008), which is likely to place low-attaining students at risk of poor teacher relationships.

This section of the review demonstrates mounting evidence that teacher relationships can improve academic outcomes and that authors have explained this association in a variety of ways. This evidence does not relate specifically to the groups studied in this thesis, who are discussed in later subchapters. One cannot necessarily expect teacher relationships to have the same influence on the children participating in this study. Literature regarding these groups must be integrated into the review in order to facilitate hypotheses such as whether or not relationship-learning association strength as illustrated by effect sizes such as those quoted above is likely to be found for pupils with ASD and BESD.

2.1.3.ii - Peer relationships

Relations between pupils can occur between two individuals, or between an individual and the group. This distinction is clarified by the terms ‘dyadic experience’ and ‘group experience’ (Parker, Rubin, Erath, Wojlawowicz, & Buskirk, 2006). There appears to be evidence suggesting that group experience predicts dyadic experience (Bukowski, Pizzamiglio, Newcomb, & Hoza, 1996). Both aspects of peer relationships are considered in this study, as there is evidence connecting each of them with academic outcomes (e.g. Veronneau, Vitaro, Brendgen, Dishion, & Tremblay, 2010) although as with teacher relationships (Newberry & Davis, 2008). The direction of the relationship-learning association appears to be fluid, meaning that learning outcomes may predict peer relationships as well as vice versa.
Although there is less evidence of linkage with academic outcomes than there is for teacher relationships, various studies have demonstrated a connection between peer relationships and academic outcomes. Among a pre-school sample, the level of interactivity in pupil play predicted greater classroom motivation, task persistence and performance in both independent and co-operative learning (Fantuzzo & McWayne, 2002). This trait is also linked to primary school teacher ratings of ‘teachability’ and high achievement (Blair & Razza, 2007). In evaluating the impact of ‘Rtime’ (Hampton, Roberts, Hammond, & Carvalho, 2010), an intervention targeting peer relationships, authors reported that teachers felt that the improvements in relationships had improved co-operation in class.

One review of evidence (McGrath & Noble, 2010) relating to peer relationships concluded that as well as improving academic outcomes and lesson engagement, positive peer relationships also led to increases in well-being measures, which themselves have a bi-directional link with academic achievement and engagement. Contrastingly, isolation and rejection is consistently linked to negative outcomes across these categories, as well as low self-concept (Buhs, et al., 2006) and behavioural disorders (Gresham, MacMillan, Bocian, Ward, & Forness, 1998). The latter indicates that some pupils within the BESD category of this study are likely to have experienced negative peer relationships.

However, while positive peer relationships are associated with improved learning outcomes, specific friendships may not always be conducive to learning and their academic helpfulness could vary as a function of gender, or the values that girls and boys tend to display in paired tasks with friends (Kutnick & Kington, 2005). Compared to working on a science task with a same sex acquaintance, primary aged female-female friend pairs performed better, but male-male friend pairs performed worse. This was interpreted to suggest that male friendship behaviour was more likely than female friendship behaviour to be school-exclusive, or unrelated to and distracting
from lesson content. Such results if replicated may imply that motivational mechanisms (e.g. Ames, 1992) drive the association between peer relationships and academic outcomes, at least among primary aged pupils. However, this is a specific form of measurement relating to dyadic interaction on one task and therefore cannot be the basis of broad generalisation.

Some authors seeking to establish theoretical connections between peer relationships and academic achievement hold that ‘social/interactional and relational underpinnings of friendship are similar to social relational aspects that enhance cognitive development and may [therefore] support learning’ (Kutnick & Kington, 2005, p. 522). These common underpinnings are also taken as evidence in support of teaching practices that encourage pupils to work in pairs or groups such as collaborative learning (Howe, Duchak-Tanner, & Tolmie, 2000) or ‘Rtime’ (Sampson, 2004), found across 21 primary and special schools to have positive social impact on dyadic and group processes (Hampton, et al., 2010). Not all of the peer-based teaching approaches appear to confer the same advantages (Damon & Phelps, 1989), for example they may focus more specifically on either academic or social outcomes rather than both.

The cognitive processes associated with friendships and academic abilities are related to the nature of the communication between children, and the efforts that each child makes to integrate peer reasoning with their own, also termed ‘transactive communication’ (Berkowitz, Gibbs, & Broughton, 1980). This form of communication has been found to be more prevalent in dialogue during paired tasks at school when the partners are friends (MacDonald, Miell, & Mitchell, 2002) although this association became less significant with older children, who were more likely to engage in transactive communication with acquaintances. Further related educational advantages of communication with friends discovered in earlier studies

\[ \text{\textsuperscript{4}} \text{NB: Not to be confused with the transactional model} \]
(Damon & Phelps, 1989; Hartup, 1996) include more sharing of information, more frequent and task-related suggestions and greater intersubjectivity (Vygotsky & Cole, 1978).

The idea of cognitive benefits accruing from friendships to learning processes is also compatible with the transactional model (Parker & Asher, 1987; Wentzel, 2005), which proposes that traits within the individual and the environment are mutually influential and that over a period of development the interactions between peer relationships and academic outcomes will have bi-directional causality.

The direction of the relationship-learning association may change between developmental stages. In a six-year study of primary school pupils, Veronneau et al. (2010) found that academic achievement predicted peer acceptance in the next school year from Grade two to Grade six although the strength of the effect weakened as pupils got older and over the final transition, between grades six and seven there was no effect. However, the latter transition also saw year groups changing as it represented the move to secondary schools. Nonetheless, the authors felt that results confirmed predictions that in adolescence, the nature of the transactive mechanism changes so that academic achievement predicts little or no variance in adolescent peer acceptance. Supporting this assertion, academic achievement was also found to have a declining predictive effect on peer rejection that became non-significant in the final two transitions. In terms of a classroom relationships predicting learning, the study found that peer rejection predicted lower attainment between grades three and five.

A further demonstration of how a transactional dynamic between peer relationships and academic outcome might be stage-specific (Sameroff & MacKenzie, 2003) was the link between academic achievement and friends’ academic achievement, which became significant from grade four onwards. This was predicted by the confluence model that suggested pupils
increasingly select peers of equal academic ability as friends (Dishion, Patterson, & Griesler, 1994). Therefore the rejection or acceptance based on academic achievement may represent a selection period in middle childhood, which is replaced by a more stable stage in early adolescence. Veronneau et al (2010) did not find that friends academic achievement predicted changes in academic achievement the next year.

The authors concluded that the lack of association between friend achievement and pupil achievement may be due to inadequate academic measures. Capturing the aspects of performance that peers are able to influence is likely to require more than results from end-of-year examinations. This issue is relevant to the academic outcome measure in this thesis, which consists of termly teacher-rated attainment in numeracy, reading and writing and may not identify aspects of academic performance that peer relationships can influence, which require further clarification by research.

2.1.3.iii - Conclusion

This section has presented evidence of direct links between classroom relationships and academic outcomes. The studies included have incorporated a range of relationship and learning measures although there is a focus on academic attainment as the main learning outcome. The association has been suggested across age groups, and there is some evidence that it may tend to change as pupils mature. For example there may be a phase in which the peer relationship-learning association is largely inverted⁵, with learning outcomes predicting relationships as pupils selectively bond with others based on their academic reputation. Those reporting empirical evidence of the relationship-learning association have made different suggestions about why it may exist, both in terms of other factors that may be involved and in terms of theoretical explanations of the

⁵ in relation to what has been proposed in the introduction to this thesis
overall dynamic behind the association. These issues form the subjects of the remaining sections within this subchapter.

2.1.4 - Classroom relationships and non-academic outcomes

In a recent review of theory and practice regarding classroom relationships, Martin and Dowson (2009) summarised a number of elements of ‘healthy human functioning’ that may be contingent on relational conditions. When those relationships are located within the school setting, such reports contribute to the theoretical and empirical bases of various mediated mechanisms through which relationships may affect learning. These will be presented at the end of this chapter. More specifically, this includes links with various pupil factors such as emotional well-being (Reddy, Rhodes, & Mulhall, 2003), classroom functioning (Gregory & Ripski, 2008), social competence (Abbott & Ryan, 2001; Wilson, et al., 2007), self-concept (Hughes & Chen, 2011) and goal-setting (Martin, Marsh, McInerney, Green, & Dowson, 2007). Further, the loss of relationships may be associated with distress (Bronfenbrenner, 1979; Cowen & Work, 1988).

2.1.4.i - Emotional well-being

Various studies suggest that teacher relationships can enhance affective aspects of well-being (Pianta & Steinberg, 1992). For example, Al-Yagon and Mikulincer (2004) found that among a sample of pupils with learning difficulties, associations existed between teacher relationship quality and loneliness. Pupil dissatisfaction with these relationships has also been linked to anxiety problems, which can lead to conduct issues that may lead to a pupil in England being categorised as having BESD (Murray & Greenberg, 2001). Earlier evidence suggested that low connectedness in terms of general school relationships is associated with distress, suicidal ideation, alcohol and drug use (Resnick et al., 1997) as well as depression,
social rejection and other school problems after accounting for parent education, ethnicity, gender and academic attainment both between and within schools (Anderman, 2002).

Another paper (Reddy, et al., 2003) charted changes in teacher relationship quality and found that changes in either direction were associated with well-being outcomes that may be relevant to learning processes. Increases in teacher relationship quality were linked to higher self-esteem, while decreases were linked to incidence of depression.

Emotional adjustment is another concept that has been used to chart well-being in relation to teacher-pupil relationships. Murray-Harvey (2010) reported that levels of supportiveness from teachers was significantly positively correlated with emotional adjustment. A study using pupil-rated measurements of teacher relationships has supported this finding, both in terms of within-rater and between-rater analyses (Murray & Greenberg, 2000).

2.1.4.ii - Classroom functioning

The term functioning is sometimes interchanged with behaviour, as both terms relate to what pupils can be observed doing. Functioning seems preferable as an overall concept in terms of emphasising how well a student is able to participate in the lesson although much of it is described in terms of particular behavioural patterns. As will be discussed in a subsequent section on other factors influencing learning, classroom functioning has been directly linked with attainment (Yen, Konold, & McDermott, 2004).

Evidence is also emerging of a bi-directional connection between classroom relationships and functioning that may have more negative than positive potential (Murray & Greenberg, 2001). For example, a longitudinal study
(Murray & Murray, 2004) found that poor teacher relationships predicted anti-social behaviour more strongly than good teacher relationships predicted pro-social or task-oriented behaviour. Previously poor teacher relationships have been linked with increased pupil aggression towards peers (Hughes & Cavell, 1999). This echoes research regarding peer relationships suggesting an ongoing interaction which may occur around peer rejection, low attainment and poor behaviour (Buhs, 2005; Buhs, et al., 2006). However, more recently a study among ten-year-old pupils found that the quality of emotional support to students offered by teachers was significantly correlated with pro-social behaviour (Luckner & Pianta, 2011). Gregory and Ripski (2008) also found that teacher relationships were linked to incidence of appropriate and inappropriate school behaviour among adolescents.

Understanding the interaction that classroom behaviour and functioning has with relationships and learning is complicated by the overlap in measurement between these phenomena. For example, an item devised to test peer relationships in this study such as ‘this child can take turns with others’ might also be used as a measure of pro-social behaviour. Various concepts are largely visible through the examination of behaviour, meaning that an observation can both relate to behaviour and to another underlying phenomenon. For this reason, high correlations between the phenomena may reveal as much about conceptual overlap as they do about the processes of child development. In a same fashion, student demonstration of learning behaviours (Yen, et al., 2004) might be correlated with attainment but could also be conceptualised as an educational outcome in itself. However if classroom relationships can improve the ability of students to focus on learning and avoid behaviours that put their academic development at risk as implied by these studies, classroom functioning may be seen as a relationship-learning mediator.
2.1.4.iii - Social competence

The nexus of behaviour and classroom relationships also overlaps with social competence. The initial wave of research linked security of attachment to teachers with primary school pupils’ social competence (Howes, Rodning, Galluzo, & Myers, 1988) in that securely attached pupils appeared more socially competent than insecurely attached pupils. In pre-school settings, pupils discriminated between carers that they were securely and insecurely attached to in terms of whether or not they approached the adult or maintained interactions with them, two commonly identified indicators of social competence (Howes & Hamilton, 1992).

This consistency between teacher and pupil interactions was suggested to reinforce the concept of the internal working model (Bretherton, 1992) a central tenet of attachment theory claiming that success or failure in establishing early relationships with care-givers sets up a child’s expectation of whether or not other people encountered subsequently will meet their needs. The internal working model is therefore a set of experientially-based cognitions or expectations within each child. Children who do not develop secure attachments with caregivers, who are characterised by atypical behaviours such as paying little or no attention to parents, may therefore be expected to display atypical social behaviours in school contexts as their internal working model underpinning this behaviour remains similar.

The research group found that internal working models are not always resistant to change, because security of parental attachment does not always predict security of attachment to pre-school workers (Howes & Matheson, 1992). Potential discrepancies between parental and teacher attachment security may explain early findings that parental attachment security and teacher attachment security combined are a stronger predictor of social competence than parental attachment security alone (Howes,
1990; Oppenheim, Sagi, & Lamb, 1988). In other words, teacher relationships may in some cases have the potential to moderate the tendency for parental attachment security to determine social competence.

More recently teacher sensitivity has been linked to improved self-regulation (Skinner, Bryant, Coffman, & Campbell, 1998) and acquisition of language and pre-academic skills in pre-school (Burchinal, et al., 2008), whereas poor relationships in primary school are associated with poor self and teacher rated measures of social and emotional competence (Murray & Greenberg, 2000). Completing this triangulation between data gathered from different rater groups, researcher rated emotional support and evaluative feedback from teachers has been found to predict social competence (Wilson, et al., 2007) and friendship reciprocation (Gest & Rodkin, 2011).

### 2.1.4.iv - Other classroom relationships

Given the role of social competence in forming relationships it is unsurprising that there is also mounting evidence of a link between peer relationship quality and the quality of current and previous teacher relationships (e.g. Hughes, Cavell, & Willson, 2001; Hughes & Chen, 2011; Wilson, et al., 2007). For example, social competence with peers may be associated with teacher demonstration of sensitivity and warmth (Curby et al., 2009). Pupils who had experienced sustained high levels of teacher stress have expressed that the consequent lack of acknowledgement from teachers meant that they struggled to settle disputes with peers (Tew, 2010).

One group attempting to explain the role that teachers play in peer relationships refer to teachers as ‘the invisible hand’ (Bierman, 2011, p. 297) in that the exact, operational nature of their influence remains mysterious despite evidence of its existence. This group contend that teachers set the
conditions for the formulation of peer relationships by utilising their knowledge of the groups’ social structure and managing individual and group interactions accordingly. Researcher-rated aspects of classroom organisation, such as management of pupil attention have been associated with increased prosocial and decreased antisocial peer behaviour (Luckner & Planta, 2011). Further studies suggest that isolated students can be helped by a willing and able teacher to improve their social standing (e.g. J. A. Baker, Clark, Crowl, & Carlson, 2009). Pupils within the study were displaying traits associated with persistent social and behavioural problems.

Farmer et al. (2011) suggest that teachers vary widely in whether or not they perceive social difficulties as within their control, or within their job. Where they influence teaching practice, such beliefs may represent risk or protective factors for pupil behaviour, classroom relationships and academic outcomes, particularly for children within this investigation who, as subsequent subchapters will illustrate, are likely to be at risk of peer rejection. Therefore these teacher beliefs were discussed during phase 2 interviews with teaching staff. Bi-directionality between teacher and peer relationships has been demonstrated by longitudinal analysis (Hughes & Chen, 2011) between grades two and four.

2.1.4.v - Self concept

An additional finding in Hughes and Chen’s study (2009) of particular interest to this review was that grade three teacher relationship quality predicted grade four peer academic reputation, which in turn mediated the effect of grade three teacher student relationship quality on grade five academic-self efficacy. These results suggest that teachers and pupils may exchange opinions about appropriateness of pupil behaviour, and that the influence teachers have on pupils’ academic reputations with peers can have an impact on later academic self-concept. This implies that not only do peer and teacher relationships influence one another, but that they can
do so in a way that alters underlying cognitions thought to be important to academic progress. As will be discussed in the next subchapter, academic self-concept is linked to improved academic performance by social-cognitive, motivational mechanisms such as self-efficacy theory (Schunk & Miller, 2002).

Rhodes et al. (2000) found that self-perceived scholastic competence improved following a peer mentoring program, along with parental relationships and attendance. The program did not have a direct impact on attainment or global self-worth, but it had an impact on these outcomes that was mediated by changes in self-perceived scholastic competence.

Another, related self-belief is the concept of student self-efficacy. Self-efficacy (Bandura, 1997) is a sense of personal effectiveness that is linked to improved motivation and achievement by evidence suggesting that it is correlated with positive cognitive and emotional responses to adverse situations and to generating and testing alternative strategies when initial attempts fail (Schunk & Miller, 2002). The development of this resource is partly linked to supportive communication from others (Bandura, 1997), particularly when students identify with and are closely connected to the person communicating with them. Classroom relationships have also been linked to self-efficacy in a negative dynamic, as Tew (2010) reported that a common finding among a team running interventions across schools was that where such relationships are poor, managing the situation and preventing conflict absorbs large amounts of energy and concentration. This applies to pupils and teachers and leads to a low sense of self-efficacy.

Vieno et al. (2007) found that student self-efficacy partly mediated the effect of support from classroom relationships on classroom functioning. Beliefs that pupils and teachers hold about themselves may thus be examples of factors that can mediate the relationship-learning association.
2.1.4.vi - Goal-setting

Classroom relationships have been found to influence other cognitions that may be related to self-concept but are more directly linked to the learning process. For example, they have been linked to the goals that pupils adopt and how much importance they attach to them. The theory will be explained in more detail in the next subchapter, but in terms of academic goals teacher relationships have been found to be more influential than any other predictor (Martin, et al., 2007). Earlier research linked teacher relationships with interest in school and the pursuit of social responsibility goals, whereas peer relationships predicted pro-social goal pursuit (Wentzel, 1998).

2.1.4.viii - Conclusion

Alongside the evidence linking classroom relationships directly to learning outcomes, there is also a growing sense that they feed into other aspects of a student’s school experience that may also influence attainment and other educational objectives. These factors may be directly observable, such as classroom functioning or constructs such as self-efficacy that require more in depth analysis to monitor. The nature of these factors also encompasses a broad range of psychological phenomena that can be affective, cognitive or behavioural. Finally not only might these constructs influence learning, there is also evidence that they influence one another, such as positive teacher relationships leading to positive peer relationships in an interaction that is also linked to social competence and self-concept. Distinguishing between these interrelated concepts can be made difficult by their conceptual overlap, emphasising the need for precise definition and measurement.

At this point, although there are many suggestions of linkage between relationships and learning, the broad scope of the evidence and the overlap
of some of the constructs discussed within it does not provide a clear theoretical framework to take forward into the investigation. The thesis advances to build on the evidence presented so far regarding whether relationships may be associated with learning to give a clearer sense of how and why this may be the case. It will do so by incorporating various theoretical models to the discussion and formulating hypothetical mechanisms through which relationships may have an impact on the learning process.

2.1.5 - Relationship-learning association: emergent mechanisms

Literature concerning peer and teacher relationships puts forward various suggestions as to the nature of a link between school relationships and learning. These will now be discussed, and the emergent mechanisms will subsequently form reference points throughout the thesis. The phenomena implicated within these mechanisms are often interrelated and there is no suggestion that the mechanisms are mutually exclusive. It must be stressed that identification of these mechanisms is for the purpose of clarifying debate regarding the channels through which classroom relationships may influence learning, rather than setting up theoretical claims to be tested against one another. Distinctions between the mechanisms may not reflect the full theoretical positions of authors located within them.

As figure 1 (overleaf) illustrates, the emergent mechanisms fall initially into two categories, with the primary groupings being direct and mediated. Also included is the position that there may be no universal mechanism. For the purposes of this thesis, direct mechanisms incorporate issues relating specifically to teaching interactions. Mediated mechanisms implicate additional factors such as pupil affect or motivation. Further subdivisions and consituent theories included in the diagram will be the topic of this section along with their empirical bases.
2.1.5.1 - Direct mechanism

The direct mechanism asserts that classroom relationships have an instrumental role in the learning process, because learning itself is contingent on social factors. There is increased potential for constructive teaching and learning when classroom relationships are positive, as the process of acquiring, consolidating and demonstrating new academic knowledge is reliant on personalised interactions with teachers and a constructive social environment within the classroom. Thus poor relationships may undermine the effectiveness of the lesson. For example, if a teacher is unaware of whether or not a pupil has grasped a learning objective or if a student feels unable to communicate ideas to peers, there would appear to be a smaller chance of the pupils in question making progress in a given lesson. The theoretical basis of this mechanism includes Dewey (1897), Vygotsky (1929/1994) and the more recent contribution of Brown and Campione (1996).
Vygotsky (1929/1994) argued that cognitive and academic progress was only possible through social interaction because learning was a process of the learner bridging the gap between his own understanding and the understanding of his teacher or peer. This is often contrasted with the position of Piaget (1928/1995), who contended that the learner drew on internal processes for cognitive development as well as stimuli from interaction. He noted the greater problem-solving ability of pairs, but added that dialogue within them can be more orientated towards compliance than constructing understanding. Indeed, while social interaction can enable cognitive development, there is also the potential for interactions to constrain such development if the conditions of the interaction are not satisfactory. Arguably, the latter assertion increases the salience of relationships in that they have both positive and negative potential to influence learning.

Although Dewey (1897) did not refer explicitly to relationships in the classroom, he emphasised the social nature of education. Firstly, that social processes were at work in the classroom meaning that pupils who tend to be rejected have lower access to learning resources and less chance of success. Secondly, that the sensitive teacher could structure exercises and the classroom in such a way that minimised the impact of rejection while maintaining the potential for constructive interactions. Thirdly, that the sensitive teacher will also be better able to judge that a pupil requires direct instruction or correction when they are unable to grasp a concept correctly through self-directed learning.

Vygotsky also placed the onus on teachers to observe children individually and target teaching accordingly for the development of each child through concepts such as the zone of proximal development (Vygotsky & Luria, 1929/1994) which is the level of understanding between a child’s independent capacity and what they might be able to follow if entirely directed by an adult. Such personalised, practices require a degree of
understanding of and familiarity with each pupil that also characterise a positive relationship. Thus it might follow that where relationships are not familiar enough for teachers to sense pupil understanding, pupils are less likely to receive appropriate teaching.

*Figure 2: Brown and Campione’s ‘Fostering Communities of Learners’ system (adapted from Brown & Campione, 1996)*

Thus far the theory discussed has concerned teacher relationships. However, Brown and Campione (1996) conceived a model known as ‘Fostering Communities of Learners’ (FCL) (ip. 289) that places centrality on social processes, meaning that successful lessons are contingent on harmonious and stable peer relations as well as perceptive and supportive teachers. At the centre of their model is ‘sharing information’, which acts as a conduit between researching knowledge and using it in a task. As Brown and Campione themselves state (p. 295), FCL only works where students are able to conduct and communicate their own research and constructive discourse is ‘essential’ (p. 305) to the model. Put more plainly, FCL ‘relies on development of a discourse genre where constructive discussion,
querying, questioning and criticism are the mode rather than the exception’ (p. 306).

This suggestion is endorsed by evidence with direct application to the pupils in this investigation. Lewis and Norwich (2005) reviewed the pedagogical effectiveness of different approaches to including pupils with SEN in mainstream schools in the UK and found that there was little support for the notion that each need category (e.g. BESD) requires a particular modification of lesson content or delivery that is relevant at group level. Instead, there seemed to be certain needs that were more general across need categories and others, which were specific to pupils. If specific pupils with SEN require specific pedagogical adjustments, one role of teacher relationships in the learning process, as suggested by Vygotsky (1929/1994) is to improve staff awareness of individual pupils, their strengths, weaknesses and how well they understand curriculum content. As this is associated to effective meeting of SEN, Norwich and Lewis’ review may imply that this mechanism is particularly important for children with BESD and ASD.

This form of relationship-learning association being of particular importance for pupils with SEN is also suggested by the Dyson et al. study (2004) cited in the introduction, which founded that positive teacher-pupil relationships was one aspect of the flexible teaching that distinguished the higher-performing schools from lower-performing schools among a group of sixteen establishments with unusually high numbers of pupils with SEN.

Further empirical support for the direct mechanism can be derived from a meta-analysis referenced earlier which linked teacher relationships and the implementation of personalised teaching strategies (Cornelius-White, 2007) to improvements in a range of learning outcomes. The connection between classroom relations and appropriate pupil classroom functioning, for example learning behaviour (Yen, et al., 2004) also presented above adds
further weight as do the accounts of classroom relationships being linked to social competence (e.g. Wilson, et al., 2007).

Wentzel (1993) examined correlations between anti-social, pro-social and academic behaviour with each other as well as with teacher preference for pupil and with academic outcomes. Pro-social and anti-social behaviour were as expected, significantly positively and negatively correlated with academic behaviour, which was defined similarly to ‘constructive discussion’ (Brown & Campione, 1996). In other words, children relating appropriately and positively towards one another are also more likely to behave in a way that facilitates learning. Although relationships are not measured directly by the study, these findings could be seen as tentative evidence for the direct practical mechanism.

2.1.5.ii - Inverted direct mechanism

This mechanism is described as ‘inverted’ as it builds on social cognitive theories to suggest that certain aspects of learning can improve classroom relationships, reversing the causal direction in the previous, more commonly advanced mechanism. Mar and Oatley (2008) have argued that engaging with fiction is a simulation of real social experience, and that abstract, virtual forms of social experience such as this can facilitate key social skills such as perspective-taking.

It is possible to reconcile this with both Piagetian (Piaget, 1928/1995) and Vygotskyan (Vygotsky & Luria, 1929/1994) models of cognitive development. Piaget stressed that the child was the agent of his or her cognitive development, and that over time external stimuli would enhance a child’s set of cognitions. Where they confirm a prior belief, stimuli can be assimilated as further evidence, and where they contradicted such a belief the child had a choice as to whether or not to accommodate the new stimulus by modifying the belief. The child maintaining equilibrium between existing cognitions and incoming stimuli drives cognitive development. Vygotsky’s model gave less agency to the child, thought to be reliant on
importing various ‘tools’ from social interactions into their cognitions. The presence of tools such as language enable better ordering of thoughts and beliefs and enable the child to make more sense of the world. Therefore the notion of abstract, virtual social experience as an antecedent of social development and therefore positive relationships can claim a theoretical base either as a stimulus forcing changes to existing beliefs about others, or part of an imported tool for understanding others.

In terms of empirical support for this mechanism, a longitudinal study (S. B. Miles & Stipek, 2006) found that among a low-income sample of primary aged children the inverted causal pattern may have been implicated. Throughout primary school, social skills were associated with literacy achievement. Aggression was predicted by poor literacy achievement two grades earlier. There appeared to be a group of children who became more aggressive and at risk of academic underachievement following low literacy scores at an earlier stage, which may endorse the inverted direct mechanism, although there is insufficient evidence to establish causality.

Complementary qualitative support comes from an intervention among primary school children in New Zealand (Baskerville, 2011). After telling a personal story of their own and establishing storytelling protocol, teachers encouraged pupils to share stories with the class. Following the intervention, staff felt peer relationships and social cohesion were improved. The authors suggested that pupil self-understanding as well as understanding and awareness of peers and alternative perspectives were enhanced. Although the stories in the second study are not virtual in that they relate to people in the classroom rather than fictional characters, the evidence does suggest that exposure to abstract social experience in the form of stories can enhance classroom relationships and their underlying social skills.
One clearly cannot dismiss the previous suggestion that classroom relationships can improve academic processes on the basis of this limited evidence of an inverse mechanism. Indeed, a bi-directional relationship that varied over time was the overall finding reported by Miles and Stipek (2006) and this proposal is perhaps most usefully taken as a counterweight to the direct mechanism, suggesting that certain aspects of academic learning may be beneficial to classroom relationships as well as vice versa. However, in terms of this study the abstract form of thinking required by the inverted direct mechanism is a common difficulty among pupils with ASD and so it may apply less within that group (Cashin & Barker, 2009).

2.1.5.iii - Mediated motivational mechanism

Mediated mechanisms differ from the direct mechanisms in that the conduit between classroom relationships and learning is not immediately pedagogical in nature, but lies deeper within the child and sometimes the teacher and concerns the meeting of various needs. Mediated motivational mechanisms can be divided into two camps: one which associates needs being met with academically-oriented motivational constructs (e.g. goal theory, Ames, 1992; Heyman & Dweck, 1992) and others that draw links with phenomena that are less directly academic in nature and yet may lead to improved academic outcomes (e.g. Covington, 1992). Mediated affective mechanisms draw on a similar framework to that outlined below but implicate affect rather than motivation as the conduit between the meeting of needs by relationships and improved learning outcomes.

The bases of these positions are located in humanistic theories (Maslow, 1954, 1970; Rogers, 1951, 1969). Rogers’ initial theory (1951) was not specifically about education, but laid out some principles on development that relate strongly to this thesis. Each child is said to rely on their interactions with other people as they build their self-concept. Those interactions can be broadly positive or negative, and self-concept will be influenced accordingly. Following this, the child will tend to demonstrate
behaviours that reflect their self-concept. The implication for education is
that positive regard from teachers and peers can lead to positive pupil self-
regard. This can lead to behaviours demonstrating a child’s view that they
have talent for a particular subject, that they are a good listener, a good
helper, depending on the phrases used around the classroom. The
interactions comprising relationships thus influence self concept.

Rogers went on to make specific recommendations for education (1969, p.
106) emphasising ‘certain attitudinal qualities which exist in the personal
relationship between the facilitator and the learner’. Teachers, acting as
facilitators of pupils’ development, needed to accept and trust their pupils,
to empathise with them and to be flexible in their chosen teaching
strategies. The point of flexibility is similar to assertions about teacher
sensitivity to pupils made by direct mechanism theorists above (e.g. Brown
& Campione, 1996), but the goal of this behaviour is the way in which it
makes the pupil feel about themselves rather than appropriate targeting of a
pupil’s level of understanding.

Maslow’s (1954, 1970) hierarchy of needs (figure 3, overleaf) is a framework
presenting ascending tiers of requirements that must be met for each
individual to achieve their potential, referred to as self-actualisation.
The tiers are ascending in that meeting the needs within any given tier is contingent on the needs of the preceding tier already being met. There is theoretical support for relationship-learning association because ‘esteem needs’, which include the respect of and by others, immediately underpin the tier most obviously connected to learning, which contains creativity and problem-solving. There is a clear parallel with Rogers’ (1951) theory, but Maslow identifies a broad range of issues which must be met before these esteem needs can be addressed. Where physiological needs such as receiving food, water and sleep are not met, all higher functions are jeopardised, and after this grouping comes the need to for various forms of safety, both physical and moral in terms of the individual, the family and the property. Once the bottom two tiers are addressed, the individual can feel love and develop a sense of belonging, which in turn can enable the feelings of achievement and self-esteem below self-actualisation.

Maslow (1970) subsequently altered the hierarchy, with aesthetic needs, or the need to experience balance, beauty and structure at the summit, and
between this tier and self-actualisation came cognitive needs, or the need to acquire and understand knowledge. Despite the change, academic outcomes remain near top of this pyramid. Relationships sit most obviously in the middle love/belonging tier, but within the esteem tier come the needs for respect of and by others. The significance of relationships within the tiers associated with learning suggests that they can both jeopardise and enable it. For example a base expectation of relationships is that they do not make a child feel unsafe, but aggressive or disruptive behaviour is not uncommon in schools.

As expressed above, this humanistic theory base is common to mediated motivational and mediated affective mechanisms. In terms of mediated motivational theory, Martin and Dowson (2009, p. 328) propose ‘that relationships affect achievement motivation by influencing motivation’s constituent beliefs and emotions’ and that this effect can take place through various different mechanisms. For example, they suggest that classroom relationship quality may moderate the effect of performance-oriented environments on academic motivation. These environments can encourage pupils, but they can also lead to pupils sensing that they are in a ‘dog-eat-dog’ (2009, p. 331) scenario. This claim is supported by a wide range of studies (e.g. Battistich & Hom, 1997; Hargreaves, Earl, & Ryan, 1996; Pianta & Walsh, 1998; Wentzel, 1998). For example Wentzel (1999) found that the quality of teacher relationships influenced whether or not students took on teacher beliefs and values about school, which was advanced by findings that such beliefs can influence the learning process beyond that teacher’s class (Deci & Ryan, 2000). Deci (1992) suggested that positive classroom relationships meeting pupils’ needs to feel a sense of belonging (Baumeister & Leary, 1995) was what enabled them to take more interest in school, while Furrer and Skinner (2003) argue that this process and the positive mood generated by feeling a sense of connectedness energises pupils. Although this may be presented as an alternative to the motivational mechanisms, Wentzel (1998, p. 207) having found that school-related interest appeared to
mediate the association between classroom relationships and academic outcome, argued that this was further evidence that ‘motivational processes are intrapersonal outcomes that might explain links between socialisation experiences and academic achievement.’

Researchers investigating engagement with school provide an alternate angle on this concept, for example the ‘Antidote’ schools-based research project (Haddon, Goodman, Park, & Crick, 2005) in developing the ‘School Emotional Environment for Learning Survey’ conducted ethnographic studies in primary and secondary schools. Amongst their findings was that five factors seemed to determine engagement with teaching and learning across the sample: how capable, listened to, accepted, safe and included staff and pupils feel. Classroom relationships, along with school-level factors such as communication style and organisational structure, was a key contributor of how pupils experienced the five dimensions linked to engagement, which can be taken to corroborate Rogers’ (1969) assertions. Such is the quantity of literature concerning mediated motivational mechanisms that it is necessary to subdivide mediated motivational mechanisms into those relating to academic or to more general motivational constructs and within these groups to particular ‘sub-mechanisms’.

**Attribution theory**

One of the more academic constructs concerns attributions, or the causes that pupils attach to success and failure at school. It is proposed (e.g. Borkowski, Carr, Rellinger, & Pressley, 1990) that when students attribute academic results to be within their control, they are more robust in the face of poor results or daunting tasks. Attributions about success and failure can also come from others and patterns within them appear to lead to particular affective responses. Where teacher feedback explicitly attributes student success as due to effort, students respond with positive affect whereas attribution of failure as due to low ability generates negative affect (Hareli & Weiner, 2002). This study also found that the pattern is replicated in
attributions made about peer academic outcomes, amplifying the impact of teacher feedback.

Other studies on teacher feedback have suggested that where the teacher relationship is positive (Weiner, 1986) and feedback is in line with performance, teacher feedback can enhance student tendency to feel that they are in control of their academic progress (Perry & Tunna, 1988; Thompson, 1994). One report found that the relationship between teacher feedback and academic self-concept was mediated by student self-talk (Burnett, 2003). There is also mounting evidence of the impact of teacher feedback on academic outcomes (Pianta, et al., 2008) and so it is possible that supportive teacher relationships may have an impact on learning that is mediated by changes in attributional tendencies.

**Expectancy-value theory**

There is a long established body of theory (Atkinson, 1957; Eccles, 1983) linking motivation to perceived likelihood of success in a given task and to the individual valuing the outcomes of that task, which has been applied to the educational context (Nicholls, Cheung, Lauer, & Patashnick, 1989). Student expectations and values have more recently been linked to aspects of relationships with teachers and peers. More specifically, it is argued that ‘children’s interpretations of their previous performance and their perceptions of socialisers attitudes and expectations influence their goals and task-specific beliefs’ (Wigfield & Tonks, 2002, p. 56).

Similar to the position advanced by attribution theorists, the practical implication of this is that teachers can affect student perception of performance for better or for worse. Where this sub-mechanism differs is the suggestion that this perception makes academic work less attractive to pupils. Peer relationships are also more implicated in that impressions children have of whether or not certain peers value academic work also
renders schoolroom tasks as more or less attractive. Gender may be an active factor in this mechanism as Kutnick and Kington (2005) found that among primary school pupils working on paired science tasks, being paired with a friend was significantly more likely to result in an improved outcome for girls than for boys, because female friendship behaviour tended to include academic goals and male friendship behaviour tended not to.

Goal theory

Another sub-mechanism is advanced by goal theory, which focuses on the meanings that students attach to achievement situations at school and the purposes that they see in their actions. Early goal theorists (Ames, 1992; Heyman & Dweck, 1992) proposed two subtypes of academic goals: mastery goals that affirm competence, and performance goals which display superiority. Subsequent research based on interviews and observations among children aged 12-15 has suggested that alongside academic goals there are social goals that may relate to achievement, such as affiliation, approval and compliance (Dowson & McInerney, 2001, 2003). Further distinctions have been made between approach and avoidance goals (K. L. Barker, McInerney, & Dowson, 2002) in that avoidance goals involve motivation not to demonstrate low ability (performance avoidance goal) or not to be disapproved of by others (social avoidance goal). Although these goals appeared to have distinct cognitive, affective and behavioural component, findings suggest that pupils have multiple goals, which ‘interacted in conflicting, converging and compensatory ways to influence students’ academic motivation and performance’ (Dowson & McInerney, 2003, p. 91).

Broadly goal theory intimates that classroom relationships influence which goals pupils adopt and how much importance they add to them. For example, one study found that teacher relationships were salient antecedents of avoidance and mastery goals relating to academic work, and additionally that teacher relationships were more powerful predictors of
general academic motivation than parent-child relationships (Martin, et al., 2007). Earlier, Wentzel (1998) found that supportive peer relationships predicted pro-social goal pursuit, while supportive teacher relationships predicted social responsibility goal pursuit, interest in school, and interest in class. Another finding was that support from parents also predicted school-related interests and goals. This theory seems reconcilable with differences between pupils as it is acknowledged that the configuration of goals varies between individuals. Compatibility with individual difference is not an advantage uniquely held by this mechanism, as one of the key premises of the direct practical mechanism is that teachers who build positive relationships with pupils will be more aware of individual differences in their levels of understanding.

As stated above, motivational mechanisms do not all refer to academic constructs or beliefs. Evidence for more general motivational mediators is found in studies where levels of self-esteem and self-worth are linked to academic success (Covington, 1992; Thompson, 1994) and are enhanced by classroom relationships (Connell & Wellborn, 1991). Amongst children within the BESD category, such mechanisms have been hinted at previously when authors suggested that poor classroom relationships and disaffection from school were linked to their academic struggles (Humphrey, Charlton, & Newton, 2004; Malmberg & Little, 2007). Again these mechanisms relate clearly to humanistic theory: both in terms of the belonging needs that were stated by Maslow (1954, 1970) and the centrality of relationships to self-concept as stressed by Rogers (1951).

*Self-determination theory*

Of the non-academic motivational constructs that may mediate the relationship-learning association, perhaps the most connected to Maslow’s work (1954, 1970) is self-determination theory (La Guardia & Ryan, 2002; Reeve, Deci, & Ryan, 2004). This states that positive pupil attitude towards challenges, expectations and goals at school as well as general functioning
is contingent on relatedness, competence and autonomy needs being met. The theory continues that meeting these needs provides the emotional security needed to successfully navigate school.

The role of classroom relationships within this model is that the pupil’s desire to relate to others motivates pro-social behaviour such as adopting rules and norms or adjusting to other aspects of the social environment (La Guardia & Ryan, 2002). Where this is achieved, the satisfied relatedness need may improve academic performance (Wentzel, Barry, & Caldwell, 2004). This mechanism makes relatively unspecific claims about how relationships enhance learning, instead focussing on practical changes that can be made to the classroom which seem to have an impact on students: ‘self-determination theory guides much of the research on classroom conditions that foster versus undermine students’ functioning (Reeve, 2006, p. 226)’. This ‘good functioning’ relates to evidence presented in the previous section and is linked to both positive classroom relationships and academic gains, but there does appear to be some causality in the proposed dynamic as certain aspects of teacher-student interaction in particular were found by a recent review to be crucial in establishing the aforementioned positive conditions (Reeve, 2006).

**Self-efficacy theory**

This more specific mechanism posits that a student’s sense of personal effectiveness leads to higher academic motivation and achievement through influencing affective and cognitive responses to adversity (Bandura, 1986, 1997). An example might be that when an initial attempt to solve a mathematical problem fails, the student with high self-efficacy will be more likely to think of and test an alternative strategy (Schunk & Pajares, 2002).

Classroom relationships play a part in this process, as self-efficacy is thought to be improved when teachers and fellow pupils model problem-solving strategies and emit supportive communication (Bandura, 1997).
Furthermore, the relevance of social support in terms of enhancing self-efficacy is greater when the pupil identifies with and is closely connected to the teacher or classmate in question (Schunk & Miller, 2002). The latter study also showed that vicarious influence from others could boost self-efficacy, so one pupil being encouraged or modelled to could improve the academic motivation of other pupils witnessing the event. This amplifies the importance of classroom relationships in that single interactions may influence the self-efficacy of multiple pupils for better or worse, which echoes similar findings regarding pupil attributions (Hareli & Weiner, 2002).

**Self-worth motivation theory**

Finally, another sub-mechanism within this school has applied Rogers’ general theory (1951) to the classroom scenario. Self-worth motivation theory (Covington, 1992; Robinson, 1995) proposes that academic success can be a source of self-worth, particularly where teacher praise is conditional upon academic success. The processes involved in promoting or defending self-worth may mean that the impact of early praise is to engage in more academically oriented behaviour to obtain more praise, whereas the impact of low levels of early praise or discouraging feedback from teachers is that pupils seek to protect themselves from this threat to their self-worth, and to find another source of positive feedback. As stated by Martin and Dowson (2009, p. 336) ‘these conditional relationships have a significant impact on students’ propensity to self-protect’, which in turn can lead to reduced engagement with school and prolonged poor attainment (Martin, Marsh, & Debus, 2003).

This research group found that significant others play a large role in motivating student desire to protect their self-worth and the strategies chosen for doing so. One strong trend was the association between parental relationships and fear of failure, and the emerging similarity between parent and student traits in dealing with fear, with one transmitted strategy being ‘self-handicapping’ (Martin, Marsh, Williamson, & Debus,
2003, p. 617) which suggests that parental relationships and traits may moderate the influence of this particular mechanism on learning. However, this research was conducted among university students and so may not relate to the sample discussed within this thesis.

Within the school setting, the implication of this theory is that although teacher relationships influence academic outcomes the process is multifaceted and bi-directional. Early performance and teacher feedback may determine whether subsequent classroom relationships influence learning positively or negatively, because they can potentially set a trend in terms of how a student goes about looking for and protecting their self-worth. They may influence the identity of the student to the extent that subsequent behaviour is oriented towards demonstration of that identity, which may dictate their engagement with learning.

2.1.5.iv - Mediated affective mechanism

Humanistic theory has given rise to a further suggestion as to how classroom relationships may relate to academic outcomes. Mediated affective mechanisms propose that the feelings which pupils experience in the classroom may be the conduit between relationships and learning. The extent of the distinction from mediated motivational mechanisms is limited as certain motivational mechanisms such as attribution theory incorporate changes to pupil affect (Hareli & Weiner, 2002) within their proposed relationship-learning dynamic.
Raider-Roth (2005) developed one account of the relational conditions conducive to pupil affect and learning at school, concluding from interviews and observations of typically developing children aged 11 to 12 that a child’s capacity to trust their knowledge is contingent on their trust in themselves and in their teaching and learning relationships. Students adjusted responses to their own work after reading the relational dynamics of the classroom, and their opinion about the accuracy of their knowledge tended to be positively or negatively overridden by social stimuli. In particular, the relational capacity and interest of the teacher played a large role in enabling children to trust new knowledge enough to demonstrate it. The theory continues that where pupils do not feel able to express or demonstrate their understanding, they will not receive recognition for it and will be less likely to consolidate it. However as this study was based on pupils in a narrow age range, it is not clear how much it applies to older or younger pupils, particularly given the studies suggesting that relationship-learning dynamics may change between developmental stages (e.g. Sameroff & MacKenzie, 2003).

More recently it has been suggested that teacher relationships in particular may have a role in helping children manage the emotional discomfort that
may be inevitable during school (Rustin, 2011). Where problematic affect such as anxiety is not contained by a strong relationship with the teacher, it is likely to influence the students capacity to function appropriately within the class. Thus levels of negative affect may mediate the relationship-learning association. Classroom relationships thus may act not only as a source of motivation, but also as a source of emotional security.

Another affective proposal as to how classroom relationships may enhance learning is more intuitively obvious: that good relationships are associated with pupils’ liking school. An early report found that levels of supportiveness in relationships with teachers and peers as experienced by pupils were linked to how much pupils felt positive towards school and their studies (Solomon, Watson, Battistich, Schaps, & et al., 1996). A subsequent study (Ireson & Hallam, 2005) suggested that feeling supported and liking school makes pupils more likely to become independent learners and less likely to become alienated. This theory is similar to motivational theories in that it considers the fulfilment of basic needs such as for belonging (Baumeister & Leary, 1995) essential to subsequent processes including learning.

Mediated affective models may draw additional support from previously presented findings linking classroom relationships with well-being outcomes such as emotional adjustment (Murray & Greenberg, 2000; Murray-Harvey, 2010) and depression (Anderman, 2002; Reddy, et al., 2003).

2.1.5.v - No universal mechanism?

The final suggestion to emerge from the literature regarding relationship-learning association is that no mechanism can explain the interaction in a way that can be applied to the general population of students. The central premise of this position is that in a given group of children, the range of contextual factors interact differently for each pupil, leading to outcomes unique to each individual. In this scenario, all of the above relationship-learning mechanisms may apply to a single pupil. This simultaneity of
emphases arguably finds theoretical basis in Bronfenbrenner’s (1979) ecological systems theory, which illustrates contextual levels influencing individuals as concentric rings.

Figure 5: Diagram illustrating Bronfenbrenner’s contexts of development model (1979)

The advantages that a pupil takes from being in a society which values education highly (macrosystem) and in a family which shares this view (exosystem) are less relevant to achievement if there are organisational problems at the pupil’s school (microsystem). However, another child in that school with a less supportive family is likely to be affected differently by the school-level difficulties - for example the second child may not be encouraged to read at home and so may be less able to learn new material from a text independently during periods when a lesson breaks down. Factors presented in subsequent subchapters that may alter the salience or
nature of relationship-learning association among pupils with ASD and BESD also serve as an illustration that in reality no universal mechanism can exist.

The review conducted by Lewis and Norwich, which was earlier cited in support of the direct practical mechanism for children with SEN, also supports the idea that different relationship-learning mechanisms are likely to apply to different pupils. As they found few examples of pedagogical modifications that were effective for all pupils in a need category (e.g. ASD) and more evidence for specific pupils needing specific pedagogical strategies, the evidence suggests that the role of classroom relationships in the learning process of children with SEN is likely to vary as a reflection of the different educational factors in play for each pupil. While the principle of teachers being more likely to know about those needs if they have a positive relationship applies generally, the strategies built on the basis of that knowledge may make use of further relationship learning mechanisms. For example, a teacher may learn that a pupil needs a lot of reassurance in order to function effectively in the classroom. If this was done successfully both a direct practical mechanism and an affective mechanism would have been operationalised by a teacher relationship in support of the pupil’s education.

The transactional model
Exponents of the transactional model (Parker & Asher, 1987; Veronneau, et al., 2010; Wentzel, 2005) also point towards a complex picture of relationship-learning association. They argue that relationships and learning, like other phenomena, alter one another in an ongoing series of interactions. Rather than classroom relationships being the facilitator of learning as direct (e.g. Brown & Campione, 1996), or mediated (e.g. Martin & Dowson, 2009), mechanisms suggest, they may both influence learning and be influenced by it at different points in the course of development. There is scope for this position to incorporate the other mechanisms as they may all
be accurately describing parts of the transactional model, one or more of which may be more relevant in a particular circumstance.

Along with integrating existing evidence that academic outcomes can influence classroom relationships (e.g. S. B. Miles & Stipek, 2006) as proposed by the inverted direct mechanism (Mar & Oatley, 2008), some transactional theorists (Sameroff & MacKenzie, 2003) have suggested that models regarding the interaction could be stage-specific as mechanisms may not apply across age groups (e.g. Eccles & Gootman, 2002; S. B. Miles & Stipek, 2006; K. Scott & Lee, 2009). While this is a possibility, a major advantage of this model seems to be that it can account for individual difference in terms of how other variables influence the process and so for the purposes of this thesis it is interpreted as a non-generalising framework.

The position that no universal relationship-learning mechanism applies does not rely on its own body of evidence in that it is endorsed by the sum of empirical support for direct and mediated mechanisms and the suggestions made later in this chapter about other factors that may influence the relationship-learning association for different children.

### 2.1.5. vi: Conclusion

The accumulation of evidence in favour of these mechanisms points to the probability that they might all capture a part of why relationships may influence learning. There appears to be robust theoretical and empirical grounds to suggest that the relationship-learning association can operate directly through altering learning interactions or indirectly through mediating variables such as pupil affect, which respond to relationships and influence learning. Once again there is a reminder that the association also can operate in the other direction and that classroom relationships also reflect learning outcomes.
This subchapter is summarised in the table of putative relationship-learning mechanisms overleaf. It is worth drawing attention to the multiple entries for certain theorists such as Vygotsky (1929/1994) who form the theoretical basis for more than one mechanism. This reinforces the concept that these suggestions may be simultaneously valid. The literature review now progresses to consider factors that may moderate relationship-learning association among pupils in this study, firstly in terms of phenomena associated with learning on a universal level and secondly considering relationship-learning association in the light of ASD and BESD research.
Table 1: Emerging relationship-learning mechanisms

<table>
<thead>
<tr>
<th>Mech. type</th>
<th>Mechanism</th>
<th>Theoretical base</th>
<th>Example evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>No universal causal direction or mechanism</td>
<td>Both affect each other in ways related to other factors in the context</td>
<td>Bronfenbrenner (1979) Ecological systems theory Parker &amp; Asher (1987) Transactional model</td>
<td>Accumulation of all evidence Veronneau et al. (2010)</td>
</tr>
</tbody>
</table>

2.2 - Other factors influencing learning

Having provided evidence and theory suggesting that learning may be connected to classroom relationships, it is important to acknowledge that many other factors have been linked with differences in learning outcomes.
between pupils. These factors may act to alter the importance of classroom relationships to the learning process. The learning outcomes discussed here largely follow the pattern of the previous subchapter in that they predominantly refer to academic attainment. This is a wide area of research and is not covered thoroughly here as the purpose of this section is to provide context to the relationship-learning mechanisms discussed previously before the literature around ASD and BESD and the more specific factors that may moderate relationship learning association within those groups are brought into the discussion. While this does not approach an exhaustive list of phenomena found to influence learning, the following factors have been implicated and are measured within phase 1 of this investigation:

- Parental socioeconomic status
- Gender
- Attendance
- Behaviour at school
- Learning in an additional language

Various findings have emerged regarding these phenomena suggesting interaction with learning outcomes, sometimes incorporating mediated processes similar to those discussed in the previous subchapter. This enquiry subscribes to the transactional (Parker & Asher, 1987) notion that educational factors interact differently for different children and aims to account for an interconnected set of influences on learning. Therefore both phases of the study are designed to explore the relationship-learning association within a framework that acknowledges other influences.

2.2.1 - Parental socioeconomic status

Socioeconomic status (SES) has long been linked to academic attainment (e.g. Belsky, 1984; Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Masten et
al., 1988; Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987). In England, low SES confers eligibility for free school meals (FSM), and there are stark indicators regarding the achievement of children falling into this category. For example, only 34.6% of FSM eligible children achieved 5 or more A*-C grades at GCSE (including English and Mathematics) in 2011. In the same year, 62% of non-FSM eligible children achieved this benchmark (Department for Education, 2012a). This gap has been at a similar level since the data collection began in 2006.

In terms of understanding the mechanisms behind this association, researchers have discussed the interactions that it has with a wide range of other factors including child interest in school (e.g. Eccles, 1994), parental stress (e.g. Belsky, 1984), parental engagement with school (e.g. Grolnick & Slowiaczek, 1994) and neighbourhood characteristics (e.g. Leventhal & Brooks-Gunn, 2000).

A large-scale study in the US (Tucker-Drob & Briley, 2012) tested the hypothesis that levels of interest would mediate the impact of SES on knowledge. This had been proposed (Eccles, 1994) on the grounds that SES influences the development of interest in academic areas. The authors suggested an alternative ‘moderation hypothesis’ (Tucker-Drob & Briley, 2012, p. 10) that SES would alter the association between interest and knowledge, based on the suggestion that low SES children would have fewer opportunities to act on their interest and develop knowledge. They found that SES was positively correlated with knowledge in each domain, and that SES did moderate the interest-knowledge association in ten of the eleven domains. They did not find support for the hypothesis that the SES-knowledge association was mediated by interest. The results suggest that for this sample, the academic significance of SES was that it facilitated children acting on interest rather than whether or not they developed an interest. In terms of children with SEN, one recent enquiry has suggested
that the impact of SES on attainment is mediated by parental engagement (Szumski & Karwowski, 2012).

### 2.2.2 - Gender

For some time in the UK there has been a trend of girls outperforming boys from the ‘early years foundation stage’ (Department for Education, 2011a) through to GCSE levels at the end of compulsory schooling (Department for Education, 2012a). The perceived underachievement of boys has garnered a great deal of media coverage since the 1990s and has been described as a ‘moral panic’ (Smith, 2003, p. 575) and, as recently pointed out by McCoy et al (2012, p. 159), has become ‘increasingly identified as an international issue’. In England the gap is present across subjects, although it tends to be greater in English than it is in Mathematics (Mensah & Kiernan, 2010). As a high-profile trend with well-replicated findings, it is unsurprising that a wide array of theories compete to explain it. The characteristics of these explanations range from considering the association to be biologically determined, to be socially conditioned or to be a combination of the two (see Francis & Skelton, 2005 for a review).

For example, one strand of research (e.g. Connolly, 2006) has examined the interaction of gender and socioeconomic status in their influence on academic achievement, proposing that boys are more at risk than girls to the negative impact of low parental socioeconomic status and low parental educational support. A recent study (Mensah & Kiernan, 2010) of early academic achievement in England found that boys were more disadvantaged than girls by early motherhood, low maternal qualifications, and living in relatively deprived neighbourhoods. However an earlier report (Smith, 2003), which examined underachievement and broke down the sample by parental occupation type found that working class girls were over-represented among underachievers and middle class girls were under-represented. This pattern was not replicated among the boys, so the findings suggest that there is more to the gender gap than sensitivity to
disadvantage, and that the tendency to associate working class boys with underachievement was flawed.

An alternative perspective implicates unequal teacher relationships possibly arising from cultural roles and stereotypes. Studies prompted by concern about a gender gap in the UK (Arnot & Gubb, 2001; Warrington & Younger, 1996) have found that teachers who do not directly concede treating male and female pupils differently have markedly different perceptions and expectations of them, with girls seen as superior in terms of organisation, cooperation and motivation. An unexpected finding from a later research project (Myhill & Jones, 2006) was that pupils felt that teachers treated boys more negatively than girls, a perception that echoes prior reports and rises with age. This was felt by girls and boys, and was often combined with perceptions that teachers had higher expectations of girls behaviourally and academically. Boys’ comments revealed cases of teachers openly communicating the view that boys were underachievers and unsurprisingly added that this was not encouraging. Male teachers were particularly associated with this discriminating behaviour, the authors suggesting that they may be wary of upsetting girls.

2.2.3 - Attendance

School attendance has emerged as a strong predictor of academic achievement (e.g. Balfanz & Byrnes, 2006; Gottfried, 2010; Roby, 2004). Clearly, frequent attenders are exposed to more teaching and are more likely to receive instruction regarding the entire curriculum, but the significance of consistent attendance may extend beyond this. However, direct evaluation of the relationship between attendance and achievement has received relatively little attention (Gottfried, 2010). Rather than considering the particular contribution of attendance to attainment, theorising around the two has tended to view them as parallel outcomes of
a third factor such as self-discipline or intelligence (e.g. Duckworth & Seligman, 2005).

Such conceptualisations may be failing to acknowledge the importance of attendance as a predictor of achievement. Using a multiple regression analysis similar to that employed in this thesis, the underachievement study referenced above (Smith, 2003) found that attendance was a stronger predictor of achievement than gender, SES, and all factors other than previous achievement. Although attendance was lower among FSM-eligible children, the predictive power of attendance was independent from that of FSM eligibility and the other theoretically relevant factors measured and included in the regression model.

One recent longitudinal study evaluated the attendance-attainment relationship (Gottfried, 2010) among a large sample of primary and middle school pupils and claimed results that ‘pointed towards evidence of causality’ (2010, p. 459). After taking a wide range of variables at pupil, school and neighbourhood level into account, the author found that attendance was a consistent predictor of standardised test scores and grades in English and Mathematics. Replicating Smith’s (2003) findings, the association between attendance and attainment remained significant when previous attainment was included in the regression. The association was also detected across all age groups.

2.2.4 - Behaviour at school

Evidence has gathered for several decades that behaviour in the classroom can have a positive (McKinney, 1975) or a negative (Swift & Spivak, 1969) impact on achievement. More recently, Yen et al (2004) demonstrated that children with adaptive learning behaviours such as being persistent and flexible when completing a task were more likely to succeed academically regardless of gender or ethnicity. While the strength of the association with
academic performance was five times less than that of cognitive ability, it was still deemed to be practically as well as statistically significant.

In terms of negative behaviours of the disruptive kind measured in this study, these have been implicated as risk factors for academic achievement for example by a longitudinal study with groups of children entering primary and secondary schools (Breslau, Breslau, Miller, & Raykov, 2011). Initial behaviour problems predicted low achievement for both age groups, and the authors hypothesised that this effect was mediated by poor classroom relationships. Indeed the connection between behavioural problems and academic attainment overlaps with the topic of this study, as behavioural problems are an antecedent of classroom relationship issues such as low teacher expectations (Murray, Waas, & Murray, 2008) and peer rejection (Buhs, et al., 2006) which themselves also predict low attainment (e.g. Hattie, 2009).

As discussed earlier, these factors can combine with poor academic performance and low self-concept in a dynamic that can be difficult to improve (Buhs, 2005; Buhs, et al., 2006). Interaction between these issues is clearly complex and it is apparent that no universal causal mechanism can account for it. In some cases, both behavioural and academic problems may be consequences of low intelligence. This may be particularly true for students with IQ scores below 70, who have been found to be twice as likely to have emotional, behavioural and social problems (Deb, Thomas, & Bright, 2001; Grey, Pollard, McClean, MacAuley, & Hastings, 2010). Classroom behaviour has also been linked to emotional intelligence (Bernard, 2006). This concept has been the subject of considerable research and policy attention in the UK and the US over the past 10 years (e.g. Humphrey et al., 2008; Lendrum, Humphrey, Kalambouka, & Wigelsworth, 2009). Emotional intelligence overlaps with classroom relationships as well as behaviour and is clearly of relevance, but is not measured quantitatively in this study.
The connection between behavioural problems and academic attainment is also of particular concern for pupils with ASD and BESD because, as subsequent sections will show, these children are often identified by inappropriate behaviour and low achievement. For example, pupils with BESD in the UK are fifteen times more likely to receive a fixed period exclusion from school than pupils without SEND and most commonly are excluded because of persistent disruptive behaviour (Department for Education, 2011d, p. 81). The implication for this study could be that children within the BESD category as the result of disruptive behaviour may be more likely to be affected by negative relationship-learning mechanisms. Behavioural problems therefore are related to the key concepts of this study and its participants, so are expected to feature in the case study interviews. They are also expected to be negatively correlated with academic attainment.

Classroom behaviour is often considered in parallel with attainment as a consequence of a third factor such as teacher relationship quality as the behavioural problem-attainment association may be bi-directional (Maldonado-Carreno & Votruba-Drzal, 2011). Thus if it also predicts academic attainment classroom behaviour may act as a mediator between classroom relationships and learning outcomes.

2.2.5 - Learning in an additional language

In England, a small gap in GCSE attainment (including English and Mathematics) that disadvantages pupils who do not speak English as a first language has been reported (Department for Education, 2012a). This was a consistent trend through the five years of the report and is a longstanding issue in the US (National Center for Educational Statistics, 2009) and has also been found among pupils in earlier phases of education (Kimbrough Oller & Jarmulowicz, 2008).
Although this has become a concern for policymakers in western countries (Freeman, 2012), the GCSE attainment gap is considerably smaller than that between FSM-eligible and non-eligible children and is reversed if English and Mathematics GCSE scores are excluded. Researchers in this field have suggested for some time that speaking a foreign language at home does not present a long-term risk factor for attainment (Nielsen & Lerner, 1986) and a range of specialist interventions have been developed (Freeman, 2012). It has also been noted that as a group, foreign language pupils have a disproportionately large incidence of low SES (Halle, Hair, Wandner, McNamara, & Chien, 2012) which may lead to the association between primary language and low achievement being exaggerated. Therefore although this topic is part of achievement debate in the UK and worthy of inclusion in the analysis of phase one, it would not be a surprise to find little or no independent prediction of attainment - particularly given the inclusion of FSM eligibility in the model.

2.2.6 - Conclusion

The model overleaf summarises the factors influencing academic attainment as discussed above and includes classroom relationships to give an impression of how the relationship-learning association is situated in context.
The arrow between classroom and child factors recognises that a child’s cumulative experience of classroom factors may become a child factor in itself via mechanisms such as self-esteem or expectations of others in the classroom. The diagram makes plain the need to consider alternative factors beyond classroom relationships. To some extent this need is addressed by the multiple regression model used in phase 1, which is able to compare the independent influences of peer and teacher relationship change on attainment in comparison to the predictive powers of other variables listed here.

In italics are some of the factors that may influence attainment which are not directly measured within phase 1 of this investigation. Although not including such factors in the phase 1 analysis is a clear limitation and avenue for future research, this weakness is addressed in two ways by the study design. As will be explained further in the methodology section, the inclusion of baseline attainment as a predictor will take into account many relevant, unquantified variables as long as they are equally important at both survey collection timepoints. Baseline attainment is therefore expected to be a particularly strong predictor of final attainment. Secondly, the more inductive nature of semi-structured interviews in phase 2 will allow participants to discuss the potential relationship-learning association in the context of other factors that they feel are important.
2.3 - Current understanding of the populations

This final subchapter of the literature review brings the reader closer to the practical rationale behind this study - which is that for differing reasons research indicates that both of these groups are at risk of poor classroom relationships and have strikingly low levels of academic attainment compared to typically developing children. For example, in England and Wales in 2010 66.2% of typically developing pupils (no indication of SEND) achieved at least 5 GCSEs including English and Mathematics. However, this figure was just over 22% and 12% for pupils with ASD and BESD respectively (Department for Education, 2011d). The theoretical rationale for studying these groups is also clarified in this subchapter, which is that children within them are likely to have a range of factors influencing them and which may moderate the relationship learning association in ways that have yet to be investigated in the existing relationship-learning association literature.

Prior studies have examined the relationship-learning association among general groups of children with SEN (e.g. J. A. Baker, 2006). A meta-analysis of these and other reports Roorda et al. (2011) found that negative aspects of teacher relationships were more detrimental to achievement and engagement for pupils with SEN, in line with the academic risk hypothesis that the learning of children likely to have low attainment will be more strongly influenced by teacher relationships than that of other children (Hamre & Pianta, 2001).

Despite concerns about relationships and attainment among children with BESD and ASD and the mounting evidence for a relationship-achievement association among typically developing children, there is surprisingly little research on that association for the former groups. However, there is an abundance of broader research relating to them, particularly regarding pupils with ASD. This section should not be treated as a review of those
fields but as an account of why these particular children are at risk of poor classroom relationships and learning outcomes and the additional factors influencing their learning, (Hunter, Boyle, & Warden, 2006) which could influence relationship-learning mechanisms.

2.3.1 - Autism Spectrum Disorders

‘Autism Spectrum Disorders’ is a category used to identify pupils in the UK (Squires, 2012) that have autism, high-functioning autism, Asperger’s syndrome and other related developmental disorders. Autism is diagnosed when an individual has marked impairments in communication, reciprocal social interactions and repetitive, restrictive interests and behaviours (World Health Organisation, 1992). This is commonly known as the triad of impairments (e.g. Cashin & Barker, 2009) and these impairments are explained further below. Asperger’s syndrome research developed in parallel with autism research and the meaningful difference between it and autism has been questioned (Baron-Cohen, Wheelwright, Lawson, Griffin, & Hill, 2002). In terms of diagnosis, current convention in the UK is that children demonstrating the triad of impairments but who were within a normal intelligence range and had developed appropriate speech by age 2 or 3 would be found to have Asperger’s syndrome (Baron-Cohen, et al., 2002).

2.3.1.i - The triad of impairments

1. Impaired communication. Difficulties in this domain include verbal and non-verbal communication. The range of issues with vocabulary is particularly broad as a small number of children have no verbal language (Nacewicz, Dalton, Johnstone, Long, & al., 2006) while others have hyperlexia, (Newman et al., 2007) which can be understood as word decoding skills that greatly exceed word
comprehension skills. Many children with ASD speak in a monotone pattern (Depape, Chen, Hall, & Trainor, 2012). The abstraction of words is often a problem, meaning that words are taken literally and that children cannot use sentence context to distinguish between homograms such as “he doesn’t type” and “he isn’t that type” (Cashin & Barker, 2009). Facial expressions have also been found to be more limited among children with ASD with many expressions coming across to others as ‘pallor’, a pale face usually associated with stress or anaemia (Cashin, 2005).

2. Impaired social skills. These problems are clearly interrelated with impaired communication, for example children with ASD are not only monotone themselves, but struggle to understand intonation in others (Depape, et al., 2012). Similarly, taking words literally presents a barrier to the subtleties in others’ speech even at early ages. However, this is seen as a separate impairment and children with ASD appear not to grasp the thoughts and feelings of others even when linguistic barriers are removed. The severity of this issue ranges from no awareness of others’ mental states to awareness of them with difficulties in interpreting them. For example, children with ASD struggled to attribute emotions from a multiple choice list to pictures of faces displaying emotions (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001)

3. Repetitive, restrictive behaviours and interests. As Cashin and Barker (Cashin & Barker, 2009, p. 190) note, children with ASD are often most obviously identifiable (American Psychiatric Association, 2000) by the common trait that ‘they do not deal well with unexpected change and have a marked preference to do things in an ordered, and at times ritualistic, manner’. Changes to their routine tend to cause anxiety, although once again there is a broad spectrum of change tolerance with some children able to manage it with forewarning. The narrow and repetitive behaviour appears obsessive and has been associated with managing anxiety (Grandin & Scariano,
There also appears to be a range within the group in terms of how this area develops, in that children with comorbid intellectual disability often retain the characteristic, unusual rocking, flapping or twisting motions into adulthood unlike other children with ASD who develop new, more age-appropriate obsessions in middle childhood such as popular TV characters (Shattuck et al., 2007).

It is also widely recognised that there are other, non-triad features common to many cases of ASD. Several of these were documented by Frith (1994) including excellent rote memory, preoccupation with parts of objects and islets of ability, where the individual has a level of skill far beyond that which would normally be expected given their general levels of functioning. Another line of research has explored the atypical sensory processing (e.g. Chuang, Tseng, Lu, & Shieh, 2012) which is often present in people with ASD and the unusual behaviours that this processing style is linked to (e.g. Chuang, Tseng, Lu, & Shieh, 2012; Reynolds, Lane, & Thacker, 2012).

2.3.1.ii - Prevalence and comorbidity with intellectual disability

It has been estimated that there may be 157 children per 10,000 attending UK schools who have ASD, including cases that were undiagnosed prior to the prevalence report (Baron-Cohen et al., 2009). Estimates of the proportion of children with autism that also have an intellectual disability, or IQ below 70, range from 10% to 40%, ‘with the variability attributed to the instruments used, diagnostic criteria selected and population samples included’ (LoVullo & Matson, 2009, p. 1288). A review (Baron-Cohen, et al., 2002) of the cognitive developmental theories of autism suggested that early research on autism often focussed on this group with comorbid learning disorders and that a trend of focussing on increasingly high-IQ ASD children has followed since. Indeed, the term ‘spectrum’ is used to encapsulate the
wide range of children with autism, who vary in terms of IQ and the severity of their impairments.

2.3.1.iii - Underlying cognitive traits: a deeper triad?

Although its usefulness for identification is rarely questioned, the characteristic triad of impairments described above has been criticised as a basis for working with children with ASD because it describes ‘behavioural manifestations’ rather than underlying cognitive impairments and therefore ‘does little to inform therapy’ (Cashin & Barker, 2009, p. 189). Furthermore it is suggested that the classic ‘triad’ behaviours fluctuate within individuals according to situational factors. These authors go on to describe the more stable ‘actual triad’ of cognitive impairments, which are said to have the group effect of giving people with ASD a ‘not neurotypical’ cognitive processing style, a difference from the rest of the population that causes various problems based around the original triad.
Firstly, it is claimed that those with ASD tend to be visual information processors (Grandin, 1995) whereas neurotypical processing is linguistic (Pinker, 1997), which better ‘lends itself to the formation of concepts and an integrated body of knowledge about the world’ (Cashin & Barker, 2009, p. 191). This is said to lead to the second key cognitive difference, which is impaired abstraction (J. Scott, Clark, & Brady, 2000), understood as linguistic categorising of interpretations based on similarity or difference of concepts. If it is accepted that those with ASD are predominantly visual processors, it can be argued that this difference could cause their reduced ability to sort information by these categorisations and relate it to new, incoming stimuli such as using context to distinguish between homograms. This lack of verbal construction in thinking is also said to be linked to the weak central coherence common for people with ASD (Nuske & Bavin, 2011). Finally, the impaired ability to interpret others mental states or empathise has led researchers to suggest that people with ASD have impaired ‘theory of mind’ (Baron-Cohen & Wheelwright, 1999). This suggests that an inability to interpret or anticipate others’ mental states leads to problems in having appropriate emotional reactions to them and in
predicting or understanding other peoples’ actions (Baron-Cohen, et al., 2002).

2.3.1.iv - Educational context

The system for classifying levels of SEN provision was updated by the Code of Practice (Department for Education and Skills, 2001) to include three ascending categories in terms of perceived extent of difficulties culminating with children who have statements of SEN, ‘which ensure legally the provision set out in a record of needs and provision following a multidisciplinary assessment of the pupil’ (Norwich, 2012, p. 58). ‘School Action’ applies to children that are a concern to their teachers, and indicates that teachers are taking advice from the school’s appointed SEN Coordinator (SENCo). ‘School Action Plus’ applies to cases where the child receives external specialist support. This system is currently used for all children with SEND in England and Wales, although the current government intends to collapse the latter categories and alter the statutory process for the former category (Her Majesty’s Stationery Office, 2012).

In England in 2011 (Department for Education, 2011c), there were 61,570 pupils who were registered as having ASD, either at School Action Plus or with a Statement of SEN. 43,425 of these children were at mainstream primary or secondary schools, and 18,150 were at special schools, which is just under one-third of the total.

Although not included in that report, there are also a group of children who are registered with ASD but are at the lowest level of the SEN register, School Action. In the sample used by this enquiry, which in theory contained a nationally representative group of schools from 10 local authorities across England, only 10% of pupils with ASD were at School Action. Assuming this sample is typical, there may be a further 6,000
children with ASD at School Action nationally. These children would be very likely to be at mainstream school.

Despite the fact that children with ASD make up a disproportionately large group of children with statements of SEN, it is therefore likely that over two thirds of children with ASD in England were attending mainstream school. This brings aforementioned concerns about classroom relationships into focus as these children will not necessarily be with teachers who have ASD experience or with peers who are sympathetic towards them.

Although they are often educated in mainstream schools, children with ASD are still considerably behind typically developing peers in terms of academic attainment. For example, in England and Wales in 2010, 66.2% of typically developing pupils (no indication of SEND) achieved at least 5 GCSEs including English and Mathematics. However only 22% of pupils with ASD achieved this feat, which is seen by the government as the basic benchmark of educational success (Department for Education, 2011d). This academic gap is likely to reduce the extent to which pupils with ASD can collaborate with peers. Where the gap in understanding of lesson content is greater, the difficulties children with ASD might have in communicating with peers will arguably be exacerbated. To an extent, this therefore reduces the likelihood of peer relationships providing an academic resource.

Another national statistic giving cause for concern about children with ASD is that over four per cent of them received one or more fixed period exclusion, making them almost four times more likely than typically developing children to do so (Department for Education, 2011d). This is when a child is excluded from school but expected to return when the duration of the exclusion is over. When compared to the broader group of children with SEND in England, who are generally all at greater risk of exclusion than typically developing children, children with ASD were the most likely to be excluded for assaulting peers or staff (accounting for
almost 40% of exclusions). The percentage of those excluded for staff assault was particularly high as it was as equal to peer assault, whereas among other SEND categories staff assault was much less common than peer assault.

This means that when viewed against other at-risk children, those with ASD are the most likely to engage in violence that is severe enough to warrant exclusion. Relative to these others, they are also particularly likely to strike out at teachers. Although this only refers to a minority of children with ASD, these trends do not have positive implications in terms of the quality of the classroom relationships experienced by pupils with ASD. Along with the reports of teachers’ frustrations (Emam & Farrell, 2009) and burnout (Jennett, Harris, & Mesibov, 2003) discussed in subsequent sections, this highlights the probability that the classroom relationships of pupils with ASD can be particularly strained. While this strain reflects their social difficulties, it also results from the difficulties that teachers and peers face in adjusting to the needs of these children.

2.3.1.5 - ASD and peer relationships

Given the understanding that is developing around the underlying factors of ASD it is unsurprising that researchers, parents and teachers observe that ‘children with ASD have difficulties with social relationships at all ages and functioning levels, including failures in effective communication, sharing enjoyment and interest, and emotional reciprocity’ (Rotheram-Fuller, Kasari, Chamberlain, & Locke, 2010, p. 1227).

For example, the above authors examined the peer relationships of 79 children with ASD in mainstream schools and 79 randomly selected, gender-matched peers and found that although the pupils with ASD were not more rejected than typically developing children, peers were less likely to reciprocate friendships with them. Similarly, while 48.1% of pupils with
ASD were involved in social networks within their classes, those who were not isolated were also more likely to be peripheral to those peer groups than 'involved' typically developing children. This is supported by an earlier report (Bauminger & Kasari, 2000) that compared to typically developing peers matched for IQ, cognitive ability, maternal education and gender, high functioning children with ASD reported more loneliness and yet a less complete understanding of loneliness. Although all 22 children with ASD claimed to have a friend, the friendships offered less companionships, security and help than those experienced by the comparison group.

Evidence of loneliness among children with ASD is significant, because it counters a pervasive perception based on seminal clinical evidence that these children have 'a basic desire for aloneness' (Kanner, 1943, p. 222). While this could be a point of divergence between high-functioning children with ASD and those with comorbid intellectual disability who were the predominant subjects of early research (Baron-Cohen, et al., 2002).

Nevertheless there is also evidence supporting the desire for aloneness or disinterest in social contact position. For example, authors have suggested that children with ASD may only interact with others to satisfy another objective, such as to obtain food or a particular object of interest (J. Scott, et al., 2000). Given the additional problems these children typically have with communication as discussed earlier and more specific issues such as a reluctance to engage in eye contact (Jordan & Powell, 1995) it is difficult for researchers to distinguish how much the tendency for aloneness of children with ASD is motivated by desire rather than a product of their social skill difficulties.

In the light of continued dispute regarding what has become a common perception that people with ASD seek less contact with the social world (Biklen, 2005) it is clearly important to ensuring the wellbeing of these children that their possible preference for aloneness continues to be
addressed by research and that assumptions are not made by practitioners at individual level that a pupil does not desire social contact. With mixed evidence on the issue, a sensible conclusion for this study might be that it seems possible that some children with ASD may prefer aloneness. This implies that understandings about the benefit of relationships cannot simply be transferred to pupils with ASD could therefore reduce the strength of the relationship-learning association at group level, even if some children with ASD do seek closer classroom relationships.

Aside from their wishes for company or otherwise, puzzling questions remain in terms of how children with ASD perceive and respond to social relationships or their absence. In Bauminger and Kasari’s study (2000), pupils with ASD tended to describe loneliness in cognitive terms, seemingly based on observation and rarely included affective descriptors of loneliness, such as a feeling of emptiness, typical of the comparison group. Having a friend was less likely to reduce the perception of loneliness in the ASD group, which may be connected to the poorer quality of the friendships discussed above and further evidence suggesting that children with ASD do not associate friendship with benefits such as affection and intimacy as much as the typically developing group. Therefore while children with ASD do show a desire for friendships and social inclusion, they may not associate these constructs with the emotions that other people tend to. This does not necessarily mean that loneliness does not trigger feelings such as emptiness for children with ASD, as given the difficulties with abstraction it may simply be that the causal connection between stimulus and response is not apparent to them. Equally, pupils with ASD could plausibly feel the affection of a close friend without associating it with that friendship. Bauminger and Kasari concluded that the lack of awareness of the affective implications of friendship and loneliness among the ASD group could be the reason for them not associating having a friend with less loneliness, rather than the poor quality of their friendships leading them to
make less of an impact on their lonely feelings, which might be the intuitive conclusion for typically developing children.

While they may be less involved than others in positive peer interactions, children with ASD may also be more likely to be involved negatively, with one UK report suggesting that over 40% of these children are bullied during their school years (National Autistic Society, 2006). Social inclusion of pupils with ASD has also been considered in terms of more specific interactional patterns. Humphrey and Symes (2011b) observed frequency and duration of social behaviours among pupils with ASD in mainstream schools compared to school, age and gender-matched control groups with dyslexia and with no recognised SEND. In both frequency and duration pupils with ASD were more engaged in solitary behaviours and reactive aggression towards peers and less engaged in cooperative peer interaction than either comparison group. They also were involved in fewer instances of rough play and subject to more verbal aggression from peers, prompting the authors to conclude that without intervention the peer experiences of pupils with ASD in mainstream schools are likely to motivate further solitary behaviour for children with ASD and further reduced acceptance of these children by their peers.

There is a thread of research suggesting that social inclusion of children with ASD may depend on particular traits that are perceived by others as costs or benefits of socialising with them (Frederickson & Furnham, 1998), a suggestion based on Social Exchange Theory (Thibault & Kelley, 1959). Among typically developing children, beneficial behaviours such as cooperation and costly behaviours including shyness are positive and negative predictors of social acceptance (Frederickson & Furnham, 2004).

A comparison study involving children with ASD in mainstream schools and matched peers (Jones & Frederickson, 2010) suggests that typically developing classmates of pupils with ASD may make concessions for them.
While cooperation was negatively associated with rejection for both groups, shyness was only positively associated with rejection in the comparison group. Children with ASD were also frequently nominated as shy, suggesting that while shyness was recognized by peers it did not prevent them from being included in the way that it did for typically developing children. Similarly, ASD children rated as less pro-social by parents were more accepted by peers. The authors argued that this may imply that peer allowances are dependent on obviously atypical behaviour, or that the well-intended pro-social behaviour of the ASD children was having an adverse effect due to poor social skills. The practical implication of this finding is that schools can make use of peers’ tolerant attitude of shyness and that it may be a platform to develop tolerance of other common ASD traits.

Despite the positivity of these findings, that report did also find that pupils with ASD were significantly more rejected by peers than typically developing children, echoing the findings of Symes and Humphrey (2010). Overall, it is suggested that pupils with ASD are more frequently isolated from or peripheral to peer groups, report more loneliness, lower friendship quality and are engaged in more negative peer interactions. However, it also seems possible that this may not have the negative affective impact that one would expect among typically developing children. If true, this qualification would have important ramifications for possible hypotheses regarding how peer relationships influence the learning of children with ASD. Relationship-learning mechanisms which are affective, such as pupils trusting their knowledge more when peer relationships are positive (Raider-Roth, 2005) might apply less to children with ASD. It seems more likely given their self-reports of loneliness and increased levels of reactive aggression that pupils with ASD have do have an affective reaction to peer relationships, but may not be aware of the cause of their feelings.
2.3.1.vi - ASD and teacher relationships

Despite the pervasive and fundamental nature of social difficulties experienced by pupils with ASD, there is surprisingly little research concerning their relationships with teachers in comparison to the coverage of their peer relationships. For example, an article summarising findings for educational psychologists, with a view to informing evidence-based practice for pupils with ASD mentioned peer relationships as an area of concern requiring intervention but did not refer to teacher relationships (Williams, Johnson, & Sukhodolsky, 2005). The authors may have found no empirically supported interventions for teacher relationships, but parents of pupils with ASD have suggested that teacher training is the most important factor in successfully integrating their children (Jindal-Snape, Douglas, Topping, Kerr, & Smith, 2005).

The relatively low coverage of these relationships for children with ASD is also surprising given other research seemingly highlighting the importance of the issue. For example, the increasing trend of pairing pupils with ASD with an assistant to aid adaptation in a mainstream environment has been well documented (e.g. Tews & Lupart, 2008). There is also evidence to suggest that teachers who are more committed to a teaching philosophy underlying their approach to educating pupils with ASD are more satisfied with their accomplishments and less at risk of burnout (Jennett, et al., 2003). Another report suggested that teachers in mainstream schools often have concerns about dealing with complex needs such as ASD because it is often not an area in which they have experience or knowledge (Humphrey & Lewis, 2008b). These findings, as well as the broad evidence of peer rejection discussed above, seemingly suggest that pupils with ASD may rely heavily on relationships with teaching staff, be at risk of staff not feeling able to develop these relationships and that teachers may benefit from additional training and support. Positive teacher relationships for these children can
therefore not be taken for granted and are worthy of further consideration in
terms of their impact on learning as well as on pupil well-being.

One article (Robertson, Chamberlain, & Kasari, 2003) that focussed directly
on this issue and also commented on the scarcity of coverage generally
gave cause for optimism. Teachers of pupils with ASD included in
mainstream schools, generally reported positive relationships with them.
Like typically developing children (Pianta & Steinberg, 1992), these children
had varying levels of conflict, closeness and dependency in their
relationships with teachers which are predictably influenced by pupil
behavioural traits and are correlated with peer inclusion or rejection.
Results also suggested that the regular presence of an assistant did not
interfere with the formation of other teacher or peer relationships, which
countered prior findings (Marks, Schrader, & Levine, 1999). However,
results may have been influenced by the staff in the school being
particularly well-informed in their practice. For example, there was a greater
appreciation among teachers and assistants of the need to share
responsibility than there had been in Marks et al.'s study. Robertson et al
(2003) also suggested that their results should be interpreted with caution
because of small sample size (N= 187) and lack of longitudinal evidence.

Emam and Farrell (2009) used classroom observation of 17 pupils with ASD
in mainstream schools and interviews with the staff who work with them and
found that tensions within these teacher relationships had a large role in
shaping teachers’ desire for extra support (assistants) for pupils with ASD
and the roles that teachers felt assistants should have. These tensions
arose from teacher frustration about the manifestations of ASD, such as
pupils interpreting teacher comments literally. The greater difficulty in
knowledge transfer was also a key source of frustration.

However, many teacher frustrations arose from the impairments in social
interactions associated with pupils with ASD. For example the children
observed often struggled to grasp the perspective of their teachers, appearing to reject their advice out of hand. Teachers commented that they tended to use pupils’ emotional facial expressions as an indicator of content understanding, which helped them adjust the pace of a lesson to the class, but this was not generally possible for the pupils with ASD. Similarly, teachers used their own facial expression and vocal tone to give messages of approval and disapproval to students, another technique which failed to connect with the pupils with ASD. Some teachers tried to discuss emotions explicitly with these pupils to compensate for this, but still came up against pupil difficulties in understanding less obvious emotions. Being aware of the needs of the rest of the group, teachers varied in willingness to make the extensive modifications to their technique that inclusion of pupils with ASD seemed to require, but viewed teaching assistants (TAs) specifically deployed to the children as indispensible, relying on them perhaps as heavily as did the children themselves.

The authors state that TA presence seemed to have negative impact on pupils’ relationships with the class teachers, who tended to step back and were often not directly addressed by the pupils, who preferred to give answers to the TAs. This dynamic, and the function of TAs in influencing relationships between pupils with ASD and their class teachers merits further research. It is discussed within this thesis, although in simple taxonomic terms participant relationships with TAs are described here as teacher relationships to improve integration between phases of the project - in phase 1, TAs and teachers both filled out the teacher survey and the items about teacher relationships referred to members of staff rather than a specific role. The impact of extensive TA interaction on peer relationships has also concerned researchers (Hemmingsson, et al., 2003) who suggest that it reduces opportunity for peer involvement, again this is addressed directly by the qualitative data collected here.
Emam and Farrell’s (2009) findings of teacher frustration and delegation of responsibility are unsurprising in the light of other findings regarding these children, such as a tendency towards repetitive questioning that seems inappropriate to teachers unaccustomed to the group (Jordan, 2005) or the increased occurrence of challenging classroom behaviour (e.g. Humphrey & Symes, 2011b) among pupils with ASD. Given that parents often associate teacher training with successful inclusion (Jindal-Snape, et al., 2005) might teacher responses to these frustrations vary according to knowledge and attitudes towards ASD? Humphrey and Symes (2011a) found that teachers who were SEN coordinators or held senior positions were more likely to have satisfactory levels of ASD knowledge than other teachers, and that they also reported greater self-efficacy teaching these pupils and managing their behaviour. The authors raised concerns about the apparent failure to transmit this expertise within schools, resulting in patchy inclusion of children with ASD. This seemingly combines with Jennett et al.’s (2003) findings concerning teacher burnout to endorse further ASD training for staff at mainstream schools who are including these pupils. However all eleven TAs in a further study (Symes & Humphrey, 2011) felt that generic ASD training was no substitute for experience because no two children were the same. It is likely however that the personalised approaches required by such children will benefit from well-targeted training, that can improve staff ability to manage the pupil and generate teaching strategies.

Children with ASD who also have cognitive deficits large enough to register as an intellectual disability may be at greater risk in terms of teacher relationships. A comparative study showed that these relationships tended to deteriorate for children with intellectual disabilities but remain stable for others (Blacher, Baker, & Eisenhower, 2009). However, although ASD and intellectual disability may be risk factors for teacher relationships it is not necessarily true that the effect of these factors accumulates.
As well as studies with greater sample size and which can measure the moderation of staff ASD knowledge level, further research is needed to determine whether or not teachers can make allowances for unusual and challenging behavioural traits in children with ASD as they build relationships with them as has been suggested (Jones & Frederickson, 2010) in terms of peer relationships.

2.3.1.vii - Link to relationship-learning mechanisms

Given the picture developing around the low social competence of children with autism, the cognitive deficits underpinning it, and the worrying incidence of peer rejection, school exclusions and assaults on teachers and staff, there is clear evidence to suggest that pupils with ASD are at risk of poor classroom relationships. Despite this and their poor academic attainment, researchers have not directly tested the association between academic attainment and classroom relationships for this group. Therefore hypotheses regarding the strength or nature of relationship learning associations must be based on alternative literature.

Evidence that atypical cognitive processing among the group leads to unusual academic problem-solving strategies (e.g. Yechiam, Arshavsky, Shamay-Tsoory, Yaniv, & Aharon, 2010) questions the extent to which the putative relationship-learning mechanisms emerging from research with typically developing children may apply. In other words, there is some indication that children with ASD can learn certain things in a way that is unique. If such unusual learning could be useful academically it may serve to alter the role that classroom relationships play in learning. However, the weak academic results of the group do not suggest a strong capacity for independent learning and many of these children work extensively with adults. For this reason, one might suspect that teacher relationships are even more important academically than they are to other children.
Following this theme, the direct practical mechanisms proposed by Vygotsky (1929/1994) and Dewey (1897) which emphasise the importance of teachers being sensitive to individual pupils and how they think would seem of particular relevance.

The common isolation from peers and close working with staff arguably suggest that peer relationships are less important academically for children with ASD. For example, some of the more direct ways in which peer relations can facilitate learning that were proposed by Brown and Campione (1996) such as via group research or sharing task information seem to be unavailable to many children with ASD unless the activity is heavily structured and supervised by staff or the other pupils are able to bend what may be the normal rules of social exchange to include the child with ASD (Jones & Frederickson, 2010).

As well as questioning the application of the direct practical mechanism in peer relationships, one could also question how much influence classroom relationships in general exert on learning if one accepts the suggestion of Bauminger and Kasari (2000) that children do not link isolation and negative social interactions with negative affect. Given the elevated incidence of peer and staff assault (Department for Education, 2011d) and the tendency for aggression to be reactive (Humphrey & Symes, 2011b), it seems clear that children with ASD do have affective reaction to relationships, even if they are unaware of the cause of these feelings.

Relationship-learning mechanisms which are affective in nature, such as pupils trusting their knowledge more when peer relationships are positive (Raider-Roth, 2005) might then apply less to children with ASD. However, the affective benefit of positive peer relationships may not necessarily require the pupil to be aware of why they feel more able to trust their knowledge. If the mechanism can work subconsciously, it may still be
relevant to children with ASD despite their reduced understanding of their own affect.

The difficulties that pupils with ASD experience in abstraction and understanding their own mental process therefore imply that they are more likely to be affected by relationship-learning mechanisms that are subconscious than those which are reasoned. This principle may apply equally to motivational mechanisms. For example, pupils with ASD may not make the association between peer relationships being positive and a sense of increased motivation to attend school or cooperate on a task although the effect may occur. If children do not express any thoughts on their classroom relationships and how they affect them in school to others, the potential relationship-learning association is more difficult to observe in that teachers and parents may also be less aware of it. This suggests that gathering multiple perspectives on each case study may be particularly useful in this investigation.

Difficulties associated with ASD in several cases appear likely to have a strong influence both on relationships and learning. For example, although many do not, children with ASD tend to have cognitive deficits in comparison to their peers. Where such deficits are present and extensive, children may have poor classroom relationships and low grades, but such is the scale and nature of the cognitive problems hampering learning that one would not expect improvements in relationships to impact upon attainment.

Finally, the range of cognitive functioning and other features within children of this category means that it is unlikely that one predominant relationship-learning mechanism will be implicated by the project - especially given the staff comments reported by Symes and Humphrey (2011) regarding no two pupils with autism being the same.
2.3.1.viii - Summary and predictions

Although there are marked issues regarding academic achievement and classroom relationships for children with ASD, the extent of the difficulties that these children experience at school leads the researcher to suspect that relationship change may have only a modest impact on academic performance. In particular, the potential issues of low cognitive ability, reduced awareness of classroom relationships and reduced ability to form them give cause to predict a reduced association. However, research suggests that cognitive ability and relationship awareness fluctuate within the category. This echoes Lewis and Norwich’s (2005) stance that educational needs often vary between individuals. As argued earlier such individuality would make teacher relationships more important if they help teachers to understand pupils better and also suggests that relationships may have different academic influences for different children within one category depending on the other relevant factors in play.

One such factor is that although they are much less likely than those with BESD to be temporarily excluded from school, children with ASD are more likely than any other SEND group to be excluded for assault on peers or staff (Department for Education, 2011d). It appears that a minority of the group react negatively to others in an aggressive way that puts their compromised chances of academic success at greater risk. Should such behaviour reflect poor classroom relationships, such a tendency would thus form a negative mediated relationship-learning mechanism. This subgroup may not be represented in the qualitative data as children of this type are less likely to be put forward by schools as case study candidates. However, this issue arguably supports wider concerns about negative peer interactions (Humphrey & Symes, 2011b), teacher frustration (Emam & Farrell, 2009) and how well some mainstream schools are set up to help these children form positive classroom relationships (Humphrey & Lewis,
2008b). It is likely that within the ASD group, there will be a portion of children for whom attention on classroom relationships might transform their school experience in a way that does bring academic benefit through reducing social tension and freeing all parties to focus more on education.

There also seems to be a particularly high level of reliance on teacher relationships given the special levels of understanding and delivery modification that these pupils require. This is perhaps even greater where children work closely with assistants. For this reason it is predicted that teacher relationship change will be a stronger predictor of academic outcome than peer relationship change.

Finally another factor seeming relevant for relationship-learning associations in this group is that pupils with ASD may have a desire for aloneness and appear to be less likely than peers to be able to reflect on relationship quality and how it influences them, although they may still react strongly to it. This arguably suggests that relationship-learning mechanisms will operate within this group will do so on a subconscious level. This might also reduce the number of mechanisms that apply to the group, although none of the mechanisms discussed earlier appear to explicitly require pupil awareness to function. For example, a child does not need to understand the connection in order for positive classroom relationships to lead to increased motivation to work or to greater willingness to expose uncertain understandings. This section culminates in the predictions listed below, which will be revisited in the discussion. As will be explained further in the research questions section, quantitative data will be used to test the first two predictions, and qualitative enquiry will also address the second prediction as well as the third.
2.3.2 - Behavioural, Emotional and Social Difficulties

This section does not follow the previous format, as this group as it is delineated in this project has not been subject to the same level of research as children with ASD. Instead it comprises a range of children, some of whom also fall into more precise groupings that have been the subject of research such as attention deficit hyperactivity disorder (ADHD) (Frick & Nigg, 2012). According to the Code of Practice (Department for Education and Skills, 2001) which is used by teachers to identify the nature of a child’s learning difficulty, children in this group may display a wide range of counterproductive behaviours including that which is disruptive, hyperactive, withdrawn or immature. Such a broad category is problematic in terms of interventions or research that seeks to treat these children as a group as there seem to be relatively little group-level characteristics. This lack of usefulness may be a factor behind the recent Green Paper suggesting that the government wishes to redefine the category (Department for Education, 2012b). The following research is presented in order to give an understanding of who is currently represented by the ‘BESD’ category in the UK and why many of them might have difficulties...
with classroom relationships that could affect their learning, albeit to different extents depending on the factors underlying their problems.

2.3.2.i - History of the category

‘Behavioural, Emotional and Social Difficulties’ is evidently a term that incorporates a range of issues. According to a recent summary of UK SEND policy (Squires, 2012), the category evolved to its current wording in the SEN Code of Practice (Department for Education and Skills, 2001) to reflect the increasing inclusion of social-environmental problems. Previously, the more medical category of ‘maladjusted’ had accounted for children whose behaviour was the primary concern. This group had been defined in education policy since the 1944 Butler Education Act moved to guarantee state education for them as well as ‘educationally subnormal’ and physically handicapped children (Squires, 2012) as they were often out of school despite education being theoretically compulsory for all children. It is thus one of the earliest categories of special educational need and one that has been revised in the face of political change and psychological advance.

The Underwood Report (1955) broadened the ‘maladjusted’ category by defining such a child as simply ‘developing in ways that have a bad effect on himself or his fellows, and cannot without help be remedied by his parents, teachers, and other adults ordinarily in contact with him’. The previous concept was more oriented towards ‘psychiatric disturbance’ (Squires, 2012, p. 13) but despite this shift maladjustment was still diagnosed by medical practitioners until the 1981 Education Act (Her Majesty’s Stationery Office, 1981) when teachers were made responsible for identification and meeting the needs of these children, with only the most severe assessed externally for a potential Statement of SEN.
One result of the practice of teacher identification is that there is no formally applied criteria for placing a child in this category. Thus, not only do researchers using data from a BESD population have no concept of which type of issues are present within their sample without gathering additional data, there is also the unknown issue of how much deliberation or evidence was used in placing children in this category.

2.3.2.ii - Current educational context

In 2011 (Department for Education, 2011c) there were 158,015 pupils who were registered as having BESD, either at School Action Plus or with a Statement of SEN. Less than one in ten of these children attend a special school: 144,890 of them were at mainstream primary or secondary schools, and 13,125 were at special schools. Taking all children with BESD into account, the proportion at special schools is likely to be considerably lower because many children who are registered with BESD are at the lowest level of the SEN register, School Action. For example, in the sample used here from 10 local authorities across England, over 50% of pupils with BESD were at School Action (Humphrey, et al., 2011). If this sample were typical, there could be a further 160,000 children with BESD at School Action in England and Wales. These children would almost certainly attend mainstream school, likely meaning that fewer than one in twenty children with BESD are in a special school.

Concerns have been raised for many years regarding the academic performance of children in the BESD category, indeed as discussed above this group was historically liable to not receive teaching in England on the grounds of being unteachable (Squires, 2012). A meta-analysis (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004) of the academic performance of children with ‘Emotional and Behavioural Disturbance’ reported that the effect size of being in this category was -.64, indicating a significant gap in achievement.
Given that ‘BESD’ is not widely associated with cognitive deficits, and that children with BESD are far less likely than others with SEND to have a statement outlining their cognitive profile and making educational recommendations (Department for Education, 2011d), it is worrying indeed that educational outcomes for children with BESD may be even more bleak than those with ASD. Only 12% of children with BESD registered as School Action Plus or with a Statement of SEN in England and Wales left school with 5 or more GCSE passes including English and Mathematics (Department for Education, 2011d), compared to a figure over 66% for children with no identified SEND.

The report also showed that this group of pupils miss over 14% of half day sessions across all age groups and school types in comparison to a figure of 5.4% for children without SEND. Over 15% of these pupils were defined as persistent absentees, meaning a child between 5 and 15 years of age missing at least 20% of school hours. Among children without SEND only 1.8% are defined as persistent absentees. It is therefore expected that attendance may emerge as a significant predictor of attainment in phase 1, and that the issue may feature prominently in the BESD case studies within phase 2. The report considered reasons recorded by schools for absence, and the BESD group missed more sessions due to exclusions, unauthorised absence than any other SEND category. Finally, children with BESD were far more likely (22.1% of pupils) than pupils with no identified SEND (1.3% of pupils) to receive a fixed period exclusion during 2009/10. It is difficult to overstate the gravity of this finding. Although children with SEND are more at risk than others for fixed rate exclusions, no other SEND need category had a proportion of excluded pupils above 6%. Children with BESD were most likely to receive such fixed period exclusions due to persistent disruptive behaviour.
An externalising subgroup within BESD are particularly visible and appear to face a high risk of their characteristic disruptive behaviours causing them to lack focus in lessons or to be absent from them altogether. Although the role of classroom relationships in this cycle is demonstrated by research discussed earlier (Gregory & Ripski, 2008), it is not discussed in the report.

2.3.2.iii - Heterogeneity within the category

Compared to ASD, BESD is therefore a much more heterogenous group. It contains children who have distinct, sometimes diagnosed conditions such as conduct disorder, anorexia nervosa or depression and yet it also contains children experiencing short term, mild difficulties that a different teacher or SENCo might not have classified as atypical. As a result, research relating to this group tends to refer to particular subgroups within it.

There is a similar, overlapping term of ‘Emotional and Behavioural Disorders’ (‘disorders’ may interchange with ‘disturbance’) often found in the literature, but this phrase generally refers to a stereotypical subgroup that is ‘overwhelmingly male, behaviourally disruptive, noncompliant, verbally abusive and aggressive’ (Reid, et al., 2004, p. 130). This combination of aggression and social skill deficit is found to ‘negatively influence both their ability to successfully negotiate peer and adult relationships and their educational experience’ (Lane, Barton-Arwood, Nelson, & Wehby, 2008, p. 44). However authors using this term do not consistently include children outside the externalising subtype described above, and so as a body of literature it does not fully address the ‘BESD’ category. The following subsection seeks to demonstrate that across the breadth of this group there are reasons to suspect heightened risk of poor classroom relationships.
To illustrate the range within ‘BESD’, one might consider some of the groups of children that fall into the description and can be more precisely delineated. Conduct problems likely account for a large proportion of the group, as they constitute a third to a half of referrals to paediatric clinical psychologists in the UK (Reid, et al., 2004, p. 130). Children referred to psychologists for a possible diagnosis of conduct disorder typically display aggressive, disruptive behaviour that pervades home and school lives. This group is likely to have been categorised at school as having BESD, with the school’s usual behavioural policy making little difference to the problem. Carr (2006, p. 361) points out that this is ‘the single most costly disorder of childhood’ because of low treatment success rates, correlations with numerous negative outcomes including criminality, poor mental health and low academic attainment, and the frequent intergenerational transmission of the problem, for example through insecure parent-child attachments.

Even within this subgroup, there is great variability in terms of the severity, chronicity and pervasiveness of the problems and the additional factors implicated in their onset. These factors include communication difficulties (Burke, Loeber, & Birmaher, 2002) but they may also be affective, such as depression, or social, such as family disorganisation (Ripley & Yuil, 2005). In cases where such issues are not causal, they are often comorbid with conduct problems. The complexity of distinguishing between causal and parallel factors renders the planning of interventions more difficult.

Children displaying externalising behaviour at school may also be diagnosed with attention deficit hyperactivity disorder (ADHD). In an attempt to become less over-inclusive, the generic descriptor of ‘minimal brain damage’ (Carr, 2006) was rebranded ADHD, diagnosable by problems with inattention, hyperactivity and impulsivity according to the widely used DSM-IV manual (Frick & Nigg, 2012). Experts in ADHD have shifted over past decades in their understandings of the root of the problem, the current understanding being in favour of a two-dimensional model with twin axes of
inattention and impulsivity/hyperactivity (American Psychiatric Association, 2000). Evidence suggests that the first dimension overlaps with learning problems, whereas the second overlaps with behavioural problems (Willcutt et al., 2002). It is this first overlap that leads psychologists to view ADHD as a neurodevelopmental condition rather than a primarily behavioural condition, such as conduct disorder. This stance is supported by evidence of executive function deficits and phenotype overlap with other developmental conditions such as motor delay (Frick & Nigg, 2012) and ASD (Pitcher, Piek, & Hay, 2003).

Those behaving in ways that may eventually raise concerns of conduct disorder or ADHD are also categorised as displaying ‘externalising’ behaviour, in other words their behavioural problems are visible to others and have consistent impact on others. Given the negative association between such behaviour and peer acceptance (Reiersen, Constantino, & Todd, 2008) or teacher preference (Ladd, 1990; Szewczyk-Sokolowski, Bost, & Wainwright, 2005) it seems likely that that these children are likely to have more difficulties with their classroom relationships than normal. For example, Hoza et al. (2005) demonstrated that pupils with ADHD were less well-liked and more rejected than controls, and had fewer reciprocal friendships. They also may be particularly rejected by socially influential peers. Pupils rejecting the children with ADHD tended to be better liked by others and scored higher in social preference.

Further worrying evidence for the externalising subgroup as a whole is that teacher relationship quality is more predictive of pupil behaviour when behaviour is confrontational or disruptive than when it is positive (Murray & Murray, 2004). In other words, poor teacher relationships can form part of a cyclical, self-fulfilling problem for some children with BESD whereby teachers are reactive to disruptive maladjustment, and are more likely to develop negative relationships with children that increase the chances of the behaviour continuing. However, a more recent study has shown that for
children at risk of developing serious externalising behaviour problems, positive relationships with teachers were associated with improvements in behaviour, academic competence, and engagement with school (Tsai & Cheney, 2012). Another investigation showed that an intervention to improve teacher relationships appeared to mitigate the usual decline in peer relationships experienced by pupils with disruptive behaviour (Mikami, Gregory, Allen, Pianta, & Lun, 2011).

The literature discussed thus far has largely concerned externalising behaviours. However, some of the internalising problems included within the definition of this group also implicate poor quality relationships within their aetiology or manifestations, such as depression (Anderman, 2002) and anxiety (Murray & Greenberg, 2001). Where they reflect relational difficulties, these issues may mediate the relationship learning association. They may also alter the importance of the relationship-learning association even if unrelated to relationships, as the may influence learning such as through reduced motivation which is associated with lower attainment (Cornelius-White, 2007). Therefore, some of the affective and motivational mechanisms discussed earlier may be of particular relevance to children in the BESD group with internalising problems.

For example, a lack of supportive parental relationships during childhood is considered to be amongst the key risk factors for anorexia nervosa (e.g. Reid, et al., 2004) and bulimia nervosa (Kim, Heo, Kang, Song, & Treasure, 2010) which together have been estimated to be prevalent to clinical extent in approximately 1.3% of western women between 15-24 (Wade, Bulik, & Kendler, 2001). Given evidence discussed previously regarding the connection between home and school relationships, for example that low parental sensitivity is associated with greater teacher conflict (Hoek, 2006) there are reasons to suspect that, where they do have poor quality familial relationships, children with such eating disorders may also be more likely than typically developing children to suffer from poor teacher relationships.
Although eating disorders arguably represent a fairly narrowly defined subgroup within children that have internalising behaviours, broader issues may also relate to the relationship-learning association. Reclusive children are by definition less likely than others to have positive peer interactions as a function of their tendency to avoid other children, regardless of the aetiology of that trait. For example, shyness has been found to be correlated with peer rejection (Jones & Frederickson, 2010).

The evidence presented gives cause to suggest that although the heterogeneity within ‘BESD’ means that there will be wide differences in the nature of any possible relational issues, it is likely that they will be a problem for many in the group. One might argue that one of the few common features of children in this category is that they may be expected to be at risk of difficulties in establishing and maintaining classroom relationships. Furthermore, as prior findings imply that both internalising and externalising traits are linked to educational outcomes and to classroom relationships (e.g. Cornelius-White, 2007; e.g. Gregory & Ripski, 2008) there may be children with BESD who could derive particularly strong educational benefits from these relationships being positive.

2.3.2.iv - BESD and communication difficulties

An additional challenge to formulating a hypothesis about how relationships and learning influence one another among children with BESD is that these problems can often be comorbid with communication difficulties (Lindsay, et al., 2007; St Clair, Pickles, Durkin, & Conti-Ramsden, 2011). One area of investigation here has been around the causality of the relationship. Early evidence suggested that communication difficulties were a risk factor for BESD because behavioural problems diminished when communication difficulties were successfully addressed by interventions (Funk & Ruppert,
1984; Stevenson, Richman, & Graham, 1985). Furthermore, late identification of communication difficulties has emerged as a further risk factor for behavioural problems (Ripley, Barrett, & Fleming, 2001).

Ripley (2005) has suggested that the association may have developmental stages as certain communication difficulties were relevant at certain ages, for example primary school children excluded for poor behaviour were poor in terms of auditory working memory, whereas receptive problems are not linked to exclusion in secondary school. Expressive problems were linked to exclusion, echoing prior research (Pryor, 1998) that young offenders seemed to have specific language difficulties, with 64% having a significant discrepancy favouring receptive language over expressive language.

Theoretical explanations for the association have revolved around Vygotskyan (Vygotsky & Luria, 1929/1994) notions of language being an imported tool for cognitive and thus social and moral development. For example, Berk and Winsler (1999) suggest that language becomes a tool for self-regulation of thought and behaviour age 3 to 4 while Baker and Cantwell (1987) proposed earlier that communication difficulties disrupt behavioural development because children are forced to conform without understanding.

In terms of this investigation, this development suggests that there may be a subgroup within the BESD category for whom additional barriers to learning exists. This implies that efforts to improve classroom relationships would be less likely to result in improved academic scores, and perhaps that the most effective intervention for either issue might be to tackle underlying linguistic deficits. However, this is once again only a certain proportion of the overall group and therefore must not be over-interpreted.

2.3.2.v - Link to relationship-learning mechanisms
From the occasions where psychologists have assessed children within this category who may have a more precise disorder, it is clear that the issues in play can have complex interrelationships. Children presenting similar behaviour may be affected by very different causal risk factors, suggesting that interventions need to be considered on an individual basis. This presents a significant challenge for researchers and to this thesis. The heterogeneity of the group hampers the application of existing empirical evidence to hypotheses regarding whether classroom relationships might be any more or less significant for their learning than they would be for a sample of typically developing children.

For example, problems with classroom relationships may plausibly be a symptom of executive function deficits (e.g. ADHD) or they may be an indicator of earlier relational patterns such as in the case pupils with reactive attachment disorder (Carr, 2006). Poor classroom relationships could be a chief cause of low academic attainment for one child with BESD yet for a second, apparently similar, child they could merely be another consequence of a third factor, such as inattention, that is primarily responsible for their difficulties accessing lessons. For the latter child, one would hypothesise a reduced association between classroom relationships and academic achievement, whereas for the former an increased association would be expected.

While it may be difficult to make predictions about the BESD group, their heterogeneity also means that it is difficult to find reasons suggesting that the nature of relationship-learning association will be markedly different from those discussed in the first half of this literature review, and therefore at group level one would not suspect a reduced or increased strength of relationship-learning association relative to typically developing children. However it does seem particularly clear that few or no mechanisms will apply equally to all children in the category.
For example, children with predominantly externalising behaviours are likely to be influenced by the direct practical mechanism whereby teaching and learning practices are made more effective by positive relationships, given that positive relationships are associated with less disruptive behaviour (Murray, et al., 2008; Wentzel, 1993). However, children who tend to withdraw from relationships could theoretically also be affected by the lack of this mechanism as they are less likely to benefit from the warmth of their peers and the improved teacher understanding that can follow from classroom relationships and improve learning.

In terms of the motivational mechanisms, whereby classroom relationships influence academic outcome through changes in direct motivational variables such as academic engagement (Martin & Dowson, 2009) or less direct constructs such as self-esteem (Reddy, et al., 2003), both internalising and externalising subgroups appear at heightened risk of the mechanisms failing to deliver academic benefit or becoming a negative process. For example, it has been previously discussed that both subgroups are more likely to be rejected by peers, and peer rejection is linked to decreased self-concept (Buhs, 2005) or disaffection from school (Malmberg & Little, 2007). That said, there is evidence that some children within the BESD category, such as those with ADHD have positive illusory biases in that their academic self-concept and general self esteem is surprisingly unaffected by their increased peer rejection (Gresham, et al., 1998; Owens, Goldfine, Evangelista, Hoza, & Kaiser, 2007).

Affective mechanisms also seem likely to be relevant to children with BESD. These suggest that security in relationships is an important part of the environmental conditions needed by children in order to engage effectively with learning (Maslow, 1970; Raider-Roth, 2005). Murray and Greenberg (2001) report that among children with emotional and behavioural difficulties, satisfaction with teacher relationships is negatively correlated with anxiety and externalising behaviour.
The final relationship-learning mechanisms surmised from research presented earlier were mediated, downstream models, which suggest that ‘third’ factors can be responsible for correlations between classroom relationships and academic outcomes. These powerful influencing factors may occur on the individual level or in terms of systemic issues at school and at home. This is a plausible suggestion for children with BESD, where individual factors discussed above that could influence both relationships and learning include communication difficulties, or the impulsivity and inattention found the ADHD subgroup. There may also be a particularly high risk of damaging systemic factors. For example, poor home environment is a risk factor for poor teacher (Jerome, et al., 2009) relationships and low attainment (Tucker-Drob & Briley, 2012). Where peer relationships are also problematic, family adversity is correlated with externalising behaviour at school (Criss, Pettit, Bates, Dodge, & Lapp, 2002). Nearly 50% of children with BESD at School Action Plus or with statements in 2010 had been in state care for at least a year (Department for Education, 2011d). Family problems therefore seem to an be potentially relevant factor for the school functioning of a large number of children with BESD, and one possible relationship-learning mechanism for such children may be that disruptive behaviour is reduced when peer relationships are improved.

2.3.2.vi - Summary and predictions

Despite the complexity arising from the composition of the BESD group, the overriding impression is that these children are at particularly high risk of negative classroom relationships further damaging already poor chances of academic success. Although there may be some children within this category who have additional issues relating to those problems, there is no clear suggestion that improving classroom relationships cannot have knock-on academic benefits. Furthermore, there is every suggestion that if such strength of association exists, this is a group that would stand to benefit
strongly from appropriate intervention. For example, peer relationships may moderate the damaging impact of troubled home environments on classroom behaviour. Children in the group whose difficulties are predominantly relational in theory would have a stronger relationship-learning association. Contrastingly, the cognitive and communication deficits prevalent among other children in the group temper expectations because additional academic barriers appear to limit the positive potential of classroom relationships. For these children, a reduced relationship-learning association might be expected. As such barriers are only present for some children with BESD, one would not expect them to result in a strong reduction of relationship-learning association strength at group level. The predictions are summarised below.

Figure 9: Predictions of relationship-learning association for children with BESD

<table>
<thead>
<tr>
<th>Differences in nature of BESD causal factors</th>
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<tbody>
<tr>
<td>Relationship-learning association should still be detected at group level</td>
</tr>
<tr>
<td>Where cognitive or communication deficits exist</td>
</tr>
<tr>
<td>Reduced relationship-learning association</td>
</tr>
<tr>
<td>Where problems are predominantly relational</td>
</tr>
<tr>
<td>Increased relationship-learning association</td>
</tr>
</tbody>
</table>

Again, the heterogeneity of the BESD category reinforces Lewis and Norwich’s (2005) emphasis of individual pedagogic needs for individual pupils and theoretically supports the suggestion that teacher relationships could improve sensitivity to these and that the nature and strength of relationship-learning association will vary between individuals. As there
appear to be fewer common educationally relevant factors for children with BESD than children with ASD, group level findings are arguably less useful.

The qualitative enquiry of phase 2 therefore has an important role in generating a fuller understanding of whether classroom relationships are important to learning, and if so how that association occurs in light of the other issues influencing the children. The significance of contextual factors to relationship-learning association is more likely to be comprehensively covered by interviews than by the multiple regression analysis, which can only account for the contextual factors that have been included as predictors in its indication of how strongly teacher and peer relationship change predict academic attainment. However, the group level findings from the regression are also of practical relevance in terms of testing how strong the relationship-association is in terms of attainment and therefore suggesting whether or not classroom relationship interventions might have academic benefit.

2.4 - Rationale and research questions

2.4.1 - Rationale

The preceding literature demonstrates that there is mounting evidence suggesting an association between classroom relationships and learning. Some of this research relates specifically to academic attainment as an outcome of learning (Hattie, 2009), while other contributions have been made regarding learning more broadly in terms of the processes involved in it such as motivation (Martin & Dowson, 2009) or alternative learning outcomes such as creative thinking (Cornelius-White, 2007). Classroom relationships may thus act upon learning in multiple ways that may be direct or may be mediated by influencing a third factor, such as pupil affect, which in turn has an impact upon learning. However, beyond classroom relationships there are many other influences upon the learning process and
its outcomes such as attendance (Gottfried, 2010) or socioeconomic status (Tucker-Drob & Briley, 2012). In their influence upon learning, such factors may in certain cases act to alter the salience of the relationship-learning association.

There has also been a significant amount of research regarding pupils with ASD and certain subgroups of pupils within the BESD category as laid out in the SEN Code of Practice (Department for Education and Skills, 2001). Within this literature concerns have been expressed regarding both groups in terms of their increased risk of low academic attainment (Department for Education, 2011d) and poor classroom relationships (Reiersen, et al., 2008; Symes & Humphrey, 2010). Children within these groups also appear to be at heightened risk of other factors which may hamper either their learning process, their ability to form relationships or both, one common example being communicative difficulties (Cashin & Barker, 2009; St Clair, et al., 2011). There is also evidence to suggest that SEN are often more accurately and effectively conceptualised at individual rather than group level (Lewis & Norwich, 2005) implying that many of the factors influencing the education of children with BESD and ASD vary between pupils, particularly in the more heterogenous BESD group.

Thus far, although the relationship-learning association literature has occasionally included these groups within samples (e.g. Murray & Greenberg, 2006) there has not been an investigation of how the association is affected by the other educational factors influencing these children. It seems plausible that the relationship-learning association could be particularly important for such vulnerable learners, yet equally it appears likely that the potential for positive classroom relationships to improve learning process and outcome may be altered by other factors within the particular needs of each child.
Therefore, an investigation that expands the relationship-learning association discourse into the domain of pupils with ASD and BESD represents two crucial advances. Firstly, on a theoretical level the study advances concepts of the relationship-learning association and its multiple forms by exploring how these mechanisms are influenced by the other powerful factors in play for many of these pupils. Secondly, on a practical level the study may improve understanding of how to meet the educational needs of children with ASD and BESD by elucidating the contributions that classroom relationships can make to their learning both in terms of the strength of the association and the ways in which it operates to influence their education.

2.4.2 - Research questions

At the summary of the previous subchapter, evidence from previous chapters regarding relationship-learning mechanisms, other factors linked to attainment, and the populations of this thesis were drawn together in forming tentative hypotheses about the strength and nature of the relationship-learning association for children with ASD and BESD. It seems plausible that an association may exist between classroom relationships and academic attainment and that some of the specific factors influencing the educational experiences of these groups may influence the strength and nature of the association. The literature review therefore culminates in one principal research question with three subquestions:

Main question) - How important are classroom relationships to the education of children with ASD and BESD?

Subquestion 1) - To what extent does the academic progress of these children vary as a function of changes in (a) relationships with teachers and/or (b) relationships with peers?
Subquestion 2) - What factors influence the association between classroom relationships and learning for children in these groups?

Subquestion 3) - What is the nature of any association between classroom relationships and learning for children in these groups?

Subquestion 1 refers to relationship change. As stated in the rationale, this investigation is partly motivated by the desire for practically applicable research and justified by the apparent need for the education system to find new strategies to aid children with ASD and BESD. When measuring strength of association, change is of greater interest than a static measurement as it relates directly to the potential academic benefits of interventions that might improve classroom relationships. In this way it is a superior test of the practical implications of a possible association.

Subquestions 2 and 3 do not specify classroom relationship change, but remain committed to informing potential interventions. It is argued that while measurement of association strength specifying ‘relationship change’ may be useful, the theoretical basis of that suggestion must be that classroom relationships themselves are associated with learning and its outcomes. Therefore investigating the nature of the association or the factors influencing it does not require the more precise delineation of ‘change’.

Furthermore, one message emanating from the literature review is that many potential relationship-learning mechanisms may exist, and that within any group of learners relationships may influence learning in multiple ways.
Therefore research question 3 is more likely to prove fruitful for practitioners if it can relate to as many putative relationship-learning mechanisms as possible, as this makes more use of existing literature and for any given practitioner is more likely make connections that are relevant to their group of children. It is argued that narrowing the focus of research question 2 to relationship change, which is not the subject of the previously discussed mechanisms, would reduce linkage with prior research in a manner that would not improve the thesis' contribution to practical knowledge.

2.4.3 - Conclusion to chapter

The literature review chapter has culminated in a rationale for this study and the research questions that it will seek to address. The thesis now moves on to explain how these questions will be answered in the methodology chapter.
3 - Methodology

3.1 - Overall methodology

3.1.1 - Epistemological position

To fully explain the design of this enquiry, it is important to discuss the epistemological stance that the design is based on. The fields of psychology and education are not united in how truth is understood, and are therefore not united in views regarding how data should be collected, analysed or reported. Instead, there is an ongoing methodological debate and researchers therefore need to make certain epistemological choices before designing their research. This section aims to set out a clear argument as to the choices made here, which were based on the relative advantages of available options in terms of three concerns:

1. Primary purpose of enquiry: relating to and extending current knowledge of the topic

2. Broader purpose: informing educational policy

3. External constraints upon data collection

Capturing and presenting a statement of ‘truth’ about any given topic requires the use of evidence and reasoning (Cohen, Manion, & Morrison, 2009) but the manner of this process can vary. The competing notions of inductive and deductive reasoning date back to Aristotle (Russell, 1946/2004) and continue to frame the debate. Deductive reasoning involves applying a universal *a priori* rule to particular cases. Although this system was allegedly created to counter the spread of fallacy (Russell, 1946/2004) the merit of deductive reasoning clearly rests on the merit of the *a priori* statement being applied. Furthermore, the chain of logic is closed to new
discovery. As European culture changed in the Renaissance era, a priori
statements were increasingly based on authority views, and the ‘abuse’ of
deduction meant that ‘science became sterile’ (Cohen, et al., 2009, p. 6).

Conversely, inductive reasoning looks first at a small number of cases
before attempting to generalise by establishing hypotheses and theories.
Using inductive reasoning, a ‘truth’ is falsifiable because it is established on
the basis of observation as opposed to a universal fact. This falsifiability
enables scientific progress in a way that pure deductive reasoning cannot.

Induction and deduction can be combined so hypotheses formed
inductively could be tested deductively (Mouly, 1978). For example, if the
hypothesis that teacher relationships are important for cognitive
development among primary school children was established inductively by
collecting data regarding the two phenomena, deductive reasoning could
extend the research by testing an implication of this hypothesis: that
children with poor teacher relationships will make less academic progress.

Although current research rarely fits the deductive mould in terms of rigid
application of universal truths, enquiries often rest on theoretical bases and
other assumptions that are not being directly tested by the analysis. For
example, this thesis is not testing whether or not children within the ASD
and BESD sub-samples actually do present the characteristic traits
associated with their category. Flaws in underlying theories can undermine
research findings so it is important for a researcher to be aware of
theoretical assumptions, and of which parts of their reasoning are more
deductive than inductive. Without such reflection and transparency, any
claim as to how data answers research questions is less robust.

Referring to the three concerns listed above, the attempt to extend current
knowledge of the relationship-learning association necessitates some
deduction as it is an examination of the relationship between two
phenomena already proposed. The objective of informing educational policy is also served well by working deductively, as it means that the thesis findings can be linked to prior research to add to a broader evidence base. However, there is also a role for induction in informing educational policy. Having established whether or not the phenomena are linked, it is helpful to know more detail about how and why this is the case so that findings can lead to practical suggestions. For example, might relationship-learning mechanisms be altered by a child's SEN?

In terms of the third area of concern, making good use of available data, incorporating induction and deduction makes sense. There is scope for testing the relationship of pre-established concepts through the relatively large samples of teacher surveys, while the interviews at case study schools afford the opportunity to ask more detailed and sometimes inductively-oriented questions. For example, participants were asked if they saw a link between classroom relationships and learning, which was deductive in suggesting a relationship between two phenomena, and why or why not this was the case which was more inductive.

3.1.2 - Positivism, subjectivism, pragmatism and complexity theory

Paradigm is a term originally coined (Kuhn, 1970) to describe a template for scientific discovery -setting out procedures and instruments for gathering data, and guidelines as to how questions should be asked or how results should be interpreted. Consequently, although these perspectives are essentially philosophical they have a determining influence on the design of research. In social sciences considerable energy is expended regarding the merits of rival paradigms (Cohen, et al., 2009). Many of these alternatives could loosely fit under the banner of subjectivism (Burrell, Morgan, & Shavin, 1979) in that they reject the positivist epistemology of universal laws which can be discovered by dispassionate observers. Instead, subjectivism suggests that humans experience the world uniquely and seeks to represent
these perspectives faithfully. Within this grouping there are myriad paradigms, all prescribing certain types of questions, certain types of answers and thus certain methods of collecting data.

The simultaneous usage of deductive and inductive reasoning in this thesis has paradigmatic implications, particularly as deductive reasoning is predicated on testing given suggestions, which runs counter to the subjectivist assertion of unique human experience. The choice of paradigm for this thesis was therefore largely informed by the above discussion regarding induction and deduction, and meeting the objectives of the study within the constraints of the available data. In particular, the widespread usage of deductive reasoning negates the adoption of subjectivist paradigms and to some extent commits the enquiry to a positivist framework. Positivist features within this thesis include the methods used to collect and analyse the quantitative data and more generally the testing of the hypothesis that classroom relationships will be more important for the learning of children with BESD than that of children with ASD.

As a result, the findings of this enquiry must be considered in the light of the lengthy body of ontological and epistemological accusations directed at positivist research. Positivist ontology suggests that there is an external reality awaiting discovery (Cohen, et al., 2009) which leads in the social sciences to the epistemology of establishing laws of human behaviour. Noted philosophers including Kierkegaard (1974), Habermas (1978), Horkheimer (1972) and Wittgenstein (1974) have decried the perceived hegemony of positivism in social science given the apparent failings of the general to deal with the particular, the lack of acknowledgement of a researcher’s own bias, and the incompatibility of the positivist system with key aspects of human existence such as creativity, morals and beliefs. The rise of positivism has been suggested to alienate the perspectives of individuals through inappropriately mechanistic reductions. This has implications for the alienated, but also undermines positivist enquiry itself.
According to Wittgenstein (1974), even if all possible scientific questions had been answered, the problems of life have still not been touched at all.

While it is difficult to contest that positivism is reductionist and cannot capture all human experience, it is also difficult for research consumers to understand the policy implications of social research without a degree of reduction or generalisability. If we accept that there are a large number of researchers working on interconnected humanitarian issues, but forbid any reduction or generalisation, which individually representative vignette would the government official be persuaded by? Furthermore, if there is no means of estimating the generalisability of findings, might this choice run a greater risk of being strongly influenced by resonance with personal beliefs rather than the benefit of a population? As policy decisions are made on the societal level, it is argued here that research must also speak to policymakers with group-level findings where appropriate. Positivist research meets this objective. Furthermore, it allows concepts that seem useful to be carried forward into future studies and enables multiple findings to be brought together (e.g. Hattie, 2009). The subjectivist researcher has difficulty doing this as the deductive testing of prior suggestions reduces representative validity.

The ‘paradigm wars’ (Maxcy, 2003) between positivist and subjectivist researchers have not disappeared, but there is a growing body of methodological and epistemological support for researchers interested in combining elements of qualitative and quantitative enquiries in studies that may incorporate deductive and inductive discovery (e.g. Tashakkori & Teddlie, 1998). The paradigms of pragmatism and complexity theory provide contrasting rationales for combining findings from multiple methodologies.

Pragmatism advocates prioritising the goals of social enquiry above faithfulness to one’s epistemological position. As Maxcy explains, ‘a
pragmatic criterion for theory selection... [involves] ... setting theories against one another in terms of their usefulness in knowledge production’ (2003, p. 60). Pragmatists warn against a dominant paradigm or methodology: ‘the more realistic danger is that some preferred set of techniques will come to be identified with the scientific method as such. The pressures of fad and fashion are as great in science, for all its, as in other areas of culture’ (Kaplan, 1964, p. 28). As such, pragmatism is not always understood as a paradigm in itself even if it does engage with paradigms and act similarly as a foundation for methodological design. Although the thrust of pragmatism is the freedom to select the appropriate tool for the topic, the notion of mixed methods joining together is advocated by pragmatists not only for ‘effectiveness’ (Tashakkori & Teddlie, 1998) but also on the grounds that, relative to maintaining delineated and rival paradigms, mixed methods enquiry leads to more open discussion of research practices and implications (e.g. Bernstein, 1983).

Complexity theory (Morrison, 2002) is primarily located within the educational field and is concerned with replacing simple cause-and-effect models with ‘organic, non-linear and holistic approaches’ that posit phenomena as being within ‘interconnected networks’ (Cohen, et al., 2009, p. 33) as opposed to isolated, independent constructs. As such it could be described as relativist. Complexity theory is also oriented towards exploring change as individuals adapt to different contextual factors. This paradigm advocates gathering multiple types of information on a topic in order to capture more fully the different aspects of the process under review. In particular, employing multiple case studies is suggested to be an effective method. Complexity theory has a partial application to this thesis. It does not endorse the overall design of the study as the quantitative phase clearly sits outside its relativist remit, but it supports the aim of this enquiry to understand relationship-learning association in context (subquestions 2 and 3) because the theory asserts that variation in contextual factors acting upon phenomena like the relationship-learning association leads to
difference in how individuals are affected by such phenomena. The theory thus aligns with the transactional model (Parker & Asher, 1987) and the necessity of considering individual-level needs (Lewis & Norwich, 2005) and background information when formulating the practical application of social research and supports the rationale for the case-study approach used here.

3.1.3 - Position of this enquiry

Having set out a brief paradigmatic debate, it appears evident that the objectives of extending knowledge, informing policy and making good use of available data are difficult to locate securely within any paradigm other than pragmatism. While this thesis is keen to explore complexity and to be inductive, it is argued that applying such principle in full works against the research objectives. This research also hopes to satisfy the pragmatic imperative to connect usefully with prior research and to provide decision makers with data that has at least some group-level implications. As a result, this enquiry makes use of the pragmatic paradigm and employs a mixed methods design.

This study is therefore also open to criticisms made of these approaches. The flexibility and results-driven emphasis inherent within pragmatism has led to suggestions that the paradigm may be too open to manipulation so that research caters to the needs of research commissioners rather than retaining critical distance from their agendas (e.g. House & Howe, 1999). This critique turns the apparent advantage of pragmatism on its head, implying that the desire to ‘be useful’ results in a lack of rigour. However, it is argued here that rigorous research using any paradigm is obtained through following methodological protocols and transparent, reflexive reporting which is the intention within this thesis. Given that there is no external agenda beyond that of the researcher, it is argued that efforts to be explicit about researcher objectives and procedures are sufficient to negate
the threat of non-critical enquiry (Caracelli & Greene, 1997). To this end, a reflexive note explaining the researcher’s perspective and the steps taken to minimise its influence is included in the next subchapter.

Mixed method enquiries that include quantitative and qualitative data have also been criticised in a paradigmatic sense in that they combine conclusions that rest on incompatible assumptions (e.g. Guba & Lincoln, 1988). This issue is covered in a subsequent section on legitimation. Broadly, it is argued here, in line with earlier assertions at the root of this debate, that inductive and deductive thinking can be usefully combined. In practice, transparency and appropriate usage of each method (Caracelli & Greene, 1997) can tease apart chains of reasoning and clarify inconsistencies in reaching conclusions. Again, such practice would be vital regardless of methodology and is not a demand posed by an exceptional risk lurking within mixed methods. The researcher is sympathetic to the notion of ‘dialectical pragmatism’ (Johnson, 2009). This refers to an epistemology that integrates both context-specific and universal perspectives and considers the tension in their juxtaposition to provide useful inferences. Although there are difficulties in combining epistemologies, this is connected to the fact that both approaches may have limitations as a result of their assumptions. If the integration of methods is managed well, combining the two may highlight and reduce such weaknesses, improving the overall contribution.
3.1.4 - Overall project design

Within this project, the components are referred to as phase 1 (quantitative) and phase 2 (qualitative) for brevity. Despite the numbering, data collection and analysis were conducted independently over the same time period (see appendix 2 for full timescale). The design thus incorporates ‘simultaneous triangulation’ as opposed to ‘sequential triangulation’ (Morse, 2003, p. 190). Triangulation is understood here as the ‘combination of the results of two or more rigorous studies conducted to provide a more comprehensive picture than either study could do alone’ (Morse, 2003, p. 190). Triangulation within this study is termed simultaneous because it is only after the results of each phase have been analysed that the findings will be drawn together.

As phase 2 questions were not based on phase 1 analysis, they were able to yield more inductive findings. This maximises the central premise of mixed methods research improving understanding of a topic via the combination of multiple approaches and perspectives. Furthermore, a key objective of this study was to ask how the relationship-learning association is influenced by particular educational needs. Therefore although there are deductive components within the design (subquestion 1), the majority of the enquiry is inductive (subquestions 2 and 3) as it seeks to explore how the educational needs of the case study children influence the importance and nature of the relationship-learning association.

Morse (2003) stresses that induction and deduction cannot inform any one study equally, and that the researcher must be cognisant of the overall ‘drive’ of their research, and whether each component follows the pattern or contrasts with it. The unequal weighting has also been referred to as ‘dominance’ (Tashakkori & Teddlie, 1998) however this is not used here as it implies that the less frequent reasoning process is marginalised.
Following on from this, Morse states that ‘when used concurrently, one method usually drives the project theoretically’ (2003, p. 199). As subquestion 1 only measures one potential quantification of relationship-learning association, which is the ability of relationship change to predict attainment, whereas subquestions 2 and 3 are more able to give a comprehensive account of the association albeit at an individual, non-generalisable level, the case studies has greater potential to inform the overall research question and thus act as the dominant methodology. As triangulation is simultaneous, this design would thus be termed ‘quan + QUAL’ according to the scheme laid out by Morse (2003).

3.1.5 - Validity or legitimation

Having addressed some epistemological critique of mixed methods research, it is pertinent to consider issues raised within the ‘community’ itself. Relative to other paradigms there is not an established framework for appraising the quality of findings. This concept is often referred to as ‘validity’, but ‘legitimation’ is sometimes preferred in this field (e.g. Onwuegbuzie, Johnson, & Collins, 2011) as ‘validity’ may be considered to have positivist connotations of objective truths. Mixed methods researchers have often been deliberate in their phrasing to incorporate a ‘bilingual nomenclature’ (Tashakkori & Teddlie, 2003, p. 12) to reduce the need for paradigmatic assertions.

The tables below refer to a set of criteria set out by Onwuegbuzie et al (2011), which describe various obstacles to making legitimate meta-inferences that are inherent to any study combining quantitative and qualitative enquiries and provide a useful reference for improving the quality of this study. The legitimation types are presented alongside suggestions of how they relate to this project, actions taken to address the issues raised, and the residual level of risk posed to the study.
Having already set out a paradigmatic position of pragmatism, which justifies bringing methods together as the best response to the intentions of this enquiry, the legitimation types bring into focus the shortcomings of doing so. In fact the source was a response to strong criticism of the method (Yanchar & Williams, 2006) in terms of its failure to ‘adequately acknowledge that questions, methods and results will nonetheless be informed by a super-ordinate paradigm, or at least an implicit framework of assumptions’ (2006, p. 3). However, is argued that the measures taken to avoid these pitfalls as presented in the table overleaf, as well as appropriate acknowledgment and reflexivity in the discussion, will be sufficient to ensure that the findings of this project have some legitimacy.
<table>
<thead>
<tr>
<th>Legitimation type</th>
<th>Description</th>
<th>Concern for this study</th>
<th>Response</th>
<th>Remaining risk level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample integration</strong></td>
<td>Extent to which the relationship between the quantitative and qualitative sampling designs yields quality meta-inferences’</td>
<td>High - although both samples are purposive they differ greatly in size and therefore qualitative findings are much less generalisable to the respective populations</td>
<td>Use of simultaneous triangulation, which separates analyses of phase 1 and 2 data will enable appropriately different inferences.</td>
<td>Medium - with correct treatment the threat is reduced but the innate problems confounding any combination of inference remain</td>
</tr>
<tr>
<td><strong>Inside-outside</strong></td>
<td>Extent to which the researcher appropriately utilises the insider’s view and the observer’s view</td>
<td>Medium - different data types were collected to balance inside/outside views but there are limits to how fully each individual insider view can be represented</td>
<td>Multiple levels of triangulation between insiders gives ‘the outsider view’ a complementary summarising and reflecting role</td>
<td>Low - substantial insider-driven data has been gathered specifically to shed light on observer deductions from the quantitative evidence</td>
</tr>
<tr>
<td><strong>Weakness minimisation</strong></td>
<td>Extent to which weakness from one approach is compensated by strength from the other</td>
<td>Medium - phases 1 and 2 uniquely contribute generalisability and explanatory power overall, but this does not account for specific issues with data collection instruments</td>
<td>To deal transparently with quality issues relating to instruments and to be aware of sample integration factor mentioned above</td>
<td>Low - once specific weaknesses are accounted for, the general weakness minimisation arising from the design will be a strength of this study</td>
</tr>
<tr>
<td><strong>Sequential</strong></td>
<td>Extent to which one has reduced the interfering effect that the data collection sequence</td>
<td>High - teachers interviewed will have previously filled out the survey for the child and may respond differently as a result. Parents and children</td>
<td>Awareness of the potential survey influence must be demonstrated in the analysis of teacher</td>
<td>Low - survey items focus on relationships rather than the link between them and learning so it is not a</td>
</tr>
<tr>
<td>Paradigmatic mixing</td>
<td>Extent to which multiple paradigms are appropriately integrated</td>
<td>High - another innate risk of this design is that by combining qualitative and quantitative evidence the project loses epistemological credibility</td>
<td>Interview data</td>
<td>Assertion of pragmatic epistemology, while reference to legitimation issues enables focus on some of the problem areas in integration.</td>
</tr>
<tr>
<td>---------------------</td>
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</tr>
<tr>
<td>Commensurability</td>
<td>Extent to which researcher is able to flexibly shift between qualitative and quantitative lenses</td>
<td>Medium - the researcher is drawn to incorporating multiple perspectives in exploring the research topic, although inexperienced in the technique</td>
<td>Low - having the concept of ‘dialectical pragmatism’ helpfully informs the meta-analytical process</td>
<td>Awareness of both phases throughout the research process and use of reflexivity whilst making meta-inferences</td>
</tr>
<tr>
<td>Multiple validities</td>
<td>Extent to which the standard validity checks for each method are observed</td>
<td>High - if correct procedures are not followed during either phase the overall findings will be undermined</td>
<td>Low - the project should be in line with other research following the established guidelines</td>
<td>Each phase was conducted independently following established protocols</td>
</tr>
<tr>
<td>Political</td>
<td>Extent to which research consumers value inferences from qualitative and quantitative data equally</td>
<td>Medium - any biases of readers of this report are currently unknown and cannot be specifically addressed</td>
<td>Low - this threat clearly cannot be completely eliminated by clear argument but in any study design readers may not agree with researcher choices.</td>
<td>Clear explanation of the rationale for both research questions as well as the pragmatic underpinnings of the study design</td>
</tr>
</tbody>
</table>
3.1.6 - Ethical considerations

The University of Manchester ethics committee approved the data collection for both phases (ref 09226) of the AfA evaluation, but there are additional considerations to discuss in relation to this study. As a member of the British Psychological Society, the researcher was aware of the guidelines set out in their Code of Ethics and Conduct (BPS, 2009) and makes use of their four principles:

Respect - ‘Psychologists value the dignity and worth of all persons, with sensitivity to the dynamics of perceived authority or influence over clients and with particular regard to people’s rights including those of privacy and self determination’ (BPS, 2009, p. 10). This principle was of particular importance in a study that obtained evidence from a large body of participants that did not meet the researcher, and may have misconstrued the researcher’s level of authority due to his association with the Department for Education. Measures taken regarding informed consent and confidentiality included:

a) Clear communication regarding the additional use of AfA evaluation data in subsequent theses and publications in the information sheets for parents and teachers

b) Clear communication regarding the independence of the evaluation team from the Department for Education and the local authorities

c) Invitation for any parent, teacher or child to request further information from the evaluation team via email, telephone or letter

d) Full explanation of why data was collected and how it would be obtained, stored and used

e) Precautions during data transfer from local authorities and the Department for Education such as encrypting files and a protected website for upload / download

f) Unique passwords for the survey website for each school
g) Removal of any pupil identifiers other than the UPN from incoming data

h) Full, prompt and acknowledged compliance with parents requesting deletion of data on their child

i) Additional consent forms for case study parents or guardians with separate information sheet

j) Clear communication before interviews regarding anonymity of transcripts and the limits of confidentiality such as the legal obligation to report certain disclosures

k) Anonymisation of all interview transcripts prior to analysis

Competence - ‘Psychologists value the continuing development and maintenance of high standard of competence in their professional work and the importance of preserving their ability to function optimally within the recognised limits of their knowledge’ (BPS, 2009, p. 15). During case study visits, the researcher was keen to avoid inadvertently taking on inappropriate roles as explained below:

l) Clear communication that the researcher was neither inspecting teachers nor advising them on teaching practice

m) Where possible to avoid ‘counselling’ (King, 1996, p. 181) interviewees - some interviewees discussed topics that evoked strong emotions for them and the researcher made efforts not to probe into those emotions and to move the interview forward whilst remaining empathetic and supportive

n) Clear communication that the researcher could not pass feedback between interviewees, for example advising parents that the researcher could not represent any of their views to school staff

Responsibility - ‘Psychologists value their responsibilities to clients, to the general public, and to the profession and science of Psychology, including the avoidance of harm and the prevention of misuse or abuse of their
contributions to society’ (BPS, 2009, p. 18). Well-being of participants and accurate representation of study findings by any future practitioners, researchers or policy makers were both of utmost concern to the researcher and were safeguarded by these measures:

- o) Informing all interviewees that there was no obligation to discuss any upsetting topics and managing situations of upset as stated in point ‘m’ above
- p) Informing all participants that they were not included in the study as any reflection of individual factors, for example ensuring that case study children that they were not invited to be a case study on the basis of particular academic or behavioural problems beyond those already addressed by the school.
- q) Ensuring that a private and appropriate interview space was provided
- r) Making efforts in the planning of interviews for participation not to unduly disadvantage any interviewees. For example, allowing schools to suggest appropriate interview schedules and advising all participants that interviews could be conducted at their convenience over the telephone.
- s) Reminding interviewees that any criticisms of school policy would remain confidential
- t) Detailed and qualified expression of findings in the thesis including limitations and generalisability of inferences made and discussion of any ‘false’ applications that could arise from the its conclusions. For example, this research does not advocate that schools should not intervene directly on the academic progress of pupils.

Integrity - ‘Psychologists value honesty, accuracy, clarity and fairness in their interactions with all persons, and seek to promote integrity in all...endeavours’ (BPS, 2009, p. 21). Clear communication has underpinned many ethical considerations already stated and is an obvious pre-requisite of this study, both of large-scale research (phase 1) where contact with
participants is minimal and of case study research (phase 2) with its potentially substantial exploration of individual lives and situations. Integrity was ensured as follows:

u) Taking all possible measures to ensure accurate measurement of quantitative data, for example the psychometric testing of the WOST

v) Following existing criteria for analysis and presentation of both forms of data and their combined inferences, for example adoption of the legitimation standards from Onwuegbuzie and Johnson (2011)

w) Mindfulness of any researcher agenda that may influence the research and measures to reduce this as explained in the reflexive note below

3.1.7 - Reflexive note

At several points in the sections regarding legitimation and ethical considerations, the need for the researcher to be aware of the impact of his opinions, skills, feelings and behaviours has become evident. For example, in managing the complexities of switching between qualitative and quantitative evidence bases in drawing meta-inferences or in remaining within appropriate ‘researcher’ boundaries during case study fieldwork. Within various methodological guides (e.g. Cohen, et al., 2009; Richardson, 1996) this self-awareness is referred to as ‘reflexivity’, a concept which requires researchers ‘to analyse and display publicly their history, values and assumptions, as well as the interrelationship with their participants’ (King, 1996, p. 176). This is deemed necessary because ‘researchers are inevitably part of the social world that they are researching…they bring their own biographies to the research situation and participants behave in particular ways in their presence’ (Cohen, et al., 2009, p. 171).

In building the rationale for this study, the researcher’s opinions regarding education and its interaction with child development are evident if not
explicit. It is felt by the researcher that practitioners and academics should view the developing child as holistically as possible, because this is an appropriate response to research and is in the best interests of children. Their development is evidently a multifaceted process with aspects that can be distinguished from one another, including academic attainment or classroom relationships. Researchers or educators often derive these concepts for the purpose of clarity. This can enable specifically guided research or intervention, but as such the distinctions between aspects of development should not be taken to mean that they are not interconnected.

Further, it is the political view of the researcher that despite strong emphasis on academic attainment in general and on ‘closing the gap’ in attainment between children with SEND and their peers in particular, there is a lack of acknowledgement from policy-makers and some researchers that learning includes more than academic attainment. Although there is emphasis on broader pupil well-being within government publications such as the ‘wider outcomes’ strand of AfA (Department for Children Schools and Families, 2009a) this is generally separated from academic attainment, which remains the outcome upon which teachers and schools are judged (Armstrong & Squires, 2012). While this remains the case, it seems to the researcher that several problems exist:

a) efforts to improve social outcomes for pupils will tend to be a lower priority than ‘academic’ interventions
b) academic interventions will tend to focus on academic competences such as spelling
c) opportunities to address non-academic factors which may relate to academic ‘underperformance’ are missed
d) opportunities to address non-academic factors which are otherwise of key significance for optimal psychological development are missed

Therefore the researcher has an agenda, and one that was fundamental in the conception and execution of the project. Such an agenda may lead to
biases in the analysis and presentation of its findings or in the collection of evidence and therefore various measures have been taken to ensure balance within the process. The mixed methods design means that falsifiable and measurable quantitative findings may bolster qualitative inferences, which inherently lack those qualities. In phase 1, alternative predictors have been included which may show classroom relationships to be relatively unimportant for academic attainment. In phase 2, interviews were conducted and subsequently coded to gather information about why classroom relationships were not important for academic outcomes as well as about why they were. The researcher has thus attempted to facilitate the disproving of his personal sense that relationships may be particularly important for the learning of pupils with ASD and BESD, which is appropriate given the low levels of specific evidence of any such association among these groups of children.

3.2 - Phase 1: Quantitative enquiry

Having established that the overall design consists of two parallel data collection and analysis processes that are not combined until findings have been generated from each, the rest of this methodology deals with the phases separately. Phase 1 was a longitudinal study based on teacher ratings of pupils’ classroom relationships, academic scores and other variables that have been linked to academic outcomes in the literature review. The additional variables have been included to provide some context to the quantitative findings - if an association is found between either form of classroom relationship change and academic outcome, how does that association compare to others that academic attainment literature might predict such as with behavioural problems or attendance?

As explained further below, the most suitable analysis for this purpose was multiple regression, which is commonly used in this area of the field (e.g. Luckner & Pianta, 2011) and involves finding out how well a group of
independent variables predict a dependent variable (academic outcome) collectively, and how strongly each ‘predictor’ relates to the dependent variable after having controlled for the predictive effects of the others. This enables the research to state that any association found for teacher or peer relationships is not mediated by the other variables in the model. In other words, one can say that any association is not simply a reflection of another, deeper association with another factor - for example with gender or free school meal (FSM) eligibility. However, this clearly does not include the multitude of factors not included in the regression model.

Although change was measured for classroom relationships, the other predictor variables used static measures. This decision is partly based on minimising attrition, but there is also epistemological and practical justification. As the rationale for this study has an intervention context, in that the project aims to provide evidence for schools regarding whether or not improving classroom relationships can have ‘knock-on’ academic benefits for pupils with ASD and BESD, it is logical not to monitor change in the variables that would not be specifically targeted by a hypothetical intervention. Furthermore, the associations found with academic outcomes largely refer to static measures of behavioural problems (e.g. Yen, et al., 2004) and attendance (e.g. Gottfried, 2010) and therefore there is more empirical support for modelling them statically.

Although this could also be said of classroom relationships, relationship-learning association is the topic around which the thesis must make an original contribution, so it is more appropriate to test the implication of the largely static associations discussed in the literature reviews by measuring a dynamic association.

3.2.1 - Sample
The phase 1 sample is purposive because the children were all at schools participating in AfA. This limits the generalisability of results to populations of pupils with ASD and BESD, indeed this principle applies to the thesis as a whole. The tables below illustrate the attrition rates, demographic characteristics, and distributions of continuous variables for both groups.

Table 3: Demographic characteristics of sample

<table>
<thead>
<tr>
<th></th>
<th>ASD</th>
<th>BESD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Initial total</td>
<td>255</td>
<td></td>
</tr>
<tr>
<td>After attrition</td>
<td>158</td>
<td>61.9</td>
</tr>
<tr>
<td>After data screening (basis of figures below)</td>
<td>152</td>
<td>59.6</td>
</tr>
<tr>
<td>Male</td>
<td>129</td>
<td>84.9</td>
</tr>
<tr>
<td>Female</td>
<td>23</td>
<td>15.1</td>
</tr>
<tr>
<td>English first language</td>
<td>145</td>
<td>95.4</td>
</tr>
<tr>
<td>English as an additional language</td>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td>FSM eligible</td>
<td>127</td>
<td>83.6</td>
</tr>
<tr>
<td>Not FSM eligible</td>
<td>25</td>
<td>16.4</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>School Action</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>School Action Plus</td>
<td>77</td>
<td>50.7</td>
</tr>
<tr>
<td>Statement</td>
<td>58</td>
<td>38.2</td>
</tr>
<tr>
<td>Don’t know status</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Missing</td>
<td>8</td>
<td>1.2</td>
</tr>
<tr>
<td>Year 1</td>
<td>35</td>
<td>23</td>
</tr>
<tr>
<td>Year 5</td>
<td>52</td>
<td>34.2</td>
</tr>
<tr>
<td>Year 7</td>
<td>34</td>
<td>22.4</td>
</tr>
<tr>
<td>Year 10</td>
<td>31</td>
<td>20.4</td>
</tr>
</tbody>
</table>

The attrition rates were similar for both groups, and indicate that many teachers and schools were not under undue pressure from local authorities.
to complete surveys. Females and pupils who do not speak English as their first language are underrepresented in both groups. Free school meal eligibility saw a difference emerge in that the BESD group was more evenly split than the ASD group. In comparison to national populations of pupils with ASD and BESD, both samples are fairly representative in terms of FSM eligibility (Department for Education, 2011d, p. 21) and gender (p. 14). Frequency of non-English speakers is at typical level in the ASD sample, but this figure is relatively high in the BESD sample.

The most striking difference emerging from this table is possibly the difference between where pupils in these groups fall on the SEND register, which categorises pupils with SEND in ascending order of need from ‘School Action’ and ‘School Action Plus’ to ‘Statement’. Nationally pupils with ASD make up just under 20% of all those with statements of SEN, whereas those with BESD make up approximately 14% (Department for Education, 2011d, p. 14). Given that BESD is over four times more prevalent than ASD for girls, and over twice as prevalent amongst boys, the ‘register difference’ between the groups in the sample is also representative of national trends.

Finally, the age composition of the sample indicates relatively even splits. No ‘quarter’ of either group is much greater or lower than 25%, perhaps other than the 34.2% of pupils with ASD being in Year 5. In the case of children BESD, this is somewhat surprising. A skew toward older age groups might have been expected as nationally this group includes 18.2% of pupils aged 4-10 at School Action Plus or ‘Statement’, whereas among 11-15 year old pupils BESD accounts for 28.9% (Department for Education, 2011d, p. 17).

Overall, the demographic characteristics of the sample provide a reasonably accurate reflection of the national populations that they represent. This can
be taken to provide some confidence in the generalisability of phase 1 findings.

3.2.2 - Instruments

3.2.2.i - Academic attainment

Quantitative data was gathered through several means. Participating schools provided local authorities with academic and attendance data during AfA. The academic data measurement was based on national curriculum sublevels. This is a system whereby a hierarchy of subject specific stages, each with individual descriptors of how a pupil at that stage would function on a task, is used by teachers to appraise pupil understanding of that aspect of the subject. For example, in the reading framework there are seven different aspects of reading on which pupils are scored. Within the strand on retrieval of ‘information, events or ideas from texts and use of quotation and reference to text’ (Department for Children Schools and Families, 2010), a pupil at sublevel 4b will ‘skim and scan for information, take notes, produce pictures and diagrams to summarise information’. To move up to 4a, the pupil must ‘explain and justify evidence with a range of evidence from texts’. Teachers must then make a judgement as to where a pupil scores in that subject overall based on their performance in each aspect of the subject. This framework is not normally used for pupils in years 10 and 11, where performance is scored according to predicted grades that work of that standard would get in a GCSE scoring system, these predicted GCSE grades can be converted to the same hierarchy of scores and so during AfA teachers of the older AfA pupils also submitted academic data according to sublevels.

These ratings were obtained from teachers regarding reading, writing and mathematics. As the sublevels are on a scale, and are all based on age appropriate stages, it is viable to give them a numerical value and to get an
average value from scores in all three subjects. In a conversion similar to that for Year 10 pupils, low attaining students who were scored by teachers on ‘p levels’ were given an equivalent value that was deemed by the DCSF to be proportional to the scale based on national curriculum levels (Humphrey, et al., 2011, p. 129). This project made use of the average points score at the end of AfA (July 2011) as the dependent variable, while average points score at the time of the first teacher survey, which is taken as the baseline, was used as one of the predictor or independent variables. The decision to analyse academic outcome in this order will be discussed in the analytical strategy section below.

The use of teacher ratings rather than standardised assessment as the measure of academic attainment is a limitation of this study. As they are summative assessments based on pupil progress on specific recent topics, teacher assessments arguably lack content validity in relation to secondary attainment measures that can be used by other professionals such as educational psychologists, which can cover a comprehensive range of skills. The scoring procedure of teacher assessment is also far less standardised than secondary measures, meaning that it is likely to have weaker inter-rater reliability and thus be less suitable for group level analysis. Thus, in these terms attainment data collected by the AfA evaluation is less valid or reliable than it could have been. However, teacher assessment measures have superior ecological validity – they reflect the opinion of staff with a relatively thorough knowledge of pupils and are the values on which key decisions are made such as pupil placement within mainstream/special schools or higher/lower sets for particular subjects. They are also more reliable than standardised measures taken on one day in terms of not being affected by circumstances specific to the day of testing and arguably have greater relevance and face validity for teaching professionals.

Furthermore, throughout the AfA pilot a standardised framework for teacher ratings (‘Assessing Pupil Progress’) (Department for Children Schools and
Families, 2008) was explained and advocated to participating schools. Although the extent to which this framework improves the suitability of data for this enquiry is dependent on how effectively it was applied, which is unlikely to be even across all schools, it does represent an improvement on non-standardised teacher ratings. Ultimately, time constraints dictated that it was not viable to use standardised measures with a sample of this size, either for the AfA evaluation team or this researcher.

3.2.2.ii - Attendance

Attendance data was gathered relating to both academic years of the project, 2009-2010 and 2010-2011, and was expressed as a percentage of days present at school over the year. Values for both years were combined to give an attendance level over both years of AfA. This timeframe is slightly different to that of the other measures, which began in January 2010 rather than September 2009. This could have been standardised if termly attendance during Autumn 2009 was known, but it was not possible for the researcher to obtain additional pupil specific attendance data from schools.

3.2.2.iii - Gender, free school meal eligibility and first language

Demographic data that were used as additional predictor variables were gender, free school meal eligibility and first language. These were all obtained in January 2010 via school census submissions to the DCSF. Free school meal eligibility is calculated on household income and is used here as a measure of socioeconomic status. First language was converted into two groups, English and non-English to meet the requirements of multiple regression analysis that predictor variables are categorical (with two categories) or continuous.
3.2.2.iv - Behavioural problems, teacher and peer relationship change

Finally, along with behavioural problems, teacher and peer relationship values were provided by the following section of the Wider Outcomes Survey for Teachers (WOST) (Humphrey, et al., 2011) that was developed specifically for the AfA evaluation.

Figure 10: Behavioural problems scale in the WOST

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The pupil cheats and tells lies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The pupil takes things that do not belong to him/her</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The pupil breaks or spoils things on purpose</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>The pupil gets angry and has tantrums</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The pupil gets in fights with other children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The pupil says nasty things to other children</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 11: ‘Positive relationships’ scale in the WOST that generated classroom relationship scales

Positive relationships

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My child can compromise with other children (e.g. take turns)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>My child is helpful towards others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>My child is popular with other children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>My child can compromise with teachers (e.g. will complete a difficult task before moving on to a preferred activity)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>My child is kind towards others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>My child makes friends easily</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>My child can join in other children’s activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>My child has at least one good friend</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>My child has a good relationship with at least one teacher</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>My child can approach groups of children</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For behavioural problems, the range of responses to each item have equivalent numerical values from 0 (never) to 3 (often). In the development stage of these measures, the research team decided not to have a ‘middle options’ on scales to avoid a build up of middle scores, providing psychometric properties of the scale were sound during piloting and participants were clearly given the option of leaving individual items if unsure or unwilling to respond. The psychometric properties of the behaviour scale are discussed below including coverage of reliability and validity.

For classroom relationships, the range of responses to each item are also scored on a scale of 0 (strongly disagree) to 3 (strongly agree) and as is explained below mean values regarding the appropriate items are used to generate overall measures of peer and teacher relationship. Relationship change is measured in terms of difference between these mean values for each pupil in the first (January 2010) and final (June 2011) collections of the WOST. A limitation of this measure is that there is likely to be many cases where a different staff member completes the second survey for a given pupil. Therefore reliability is compromised as change in score may reflect difference in participant interpretation of the WOST. A future study in this area unconstrained by a pre-existing data collection procedure could attempt to improve on this investigation by ensuring that all measures were completed by the same staff member, although this will prove difficult to implement with a longitudinal sample of this or greater size due to staff
movement or unavailability and the lack of direct researcher presence at participating schools.

The WOST was compiled following a literature review that found no suitable measure for the particular range of outcomes that it measures and its psychometric properties were assessed using criteria set out by Terwee et al (2007):

Content validity - ‘the extent to which the concepts of interest are comprehensively represented by items in the questionnaire’ (2007, p. 35). The initial version of the WOST contained 10 items for classroom relationships as well as 9 each regarding bullying and behavioural problems. The items were generated based on the AfA guidance for schools (Department for Children Schools and Families, 2009a) and in reference to similar measures such as the Strengths and Difficulties Questionnaire (Goodman, 1997). After a satisfactory pilot in Autumn 2009 this version was used in the AfA evaluation in January 2010, but certain items were removed to improve internal consistency when this was reviewed after the January 2010 survey. For the purposes of this thesis, the researcher took the additional step of splitting items that constituted the classroom relationship scale into ‘teacher’ (items four and nine) and ‘peer’ relationships (items one, three, six, seven, eight and ten). This also meant disregarding items two and five that were non-specific. This decision was made following a confirmatory factor analysis explained below. A senior educational psychologist on the evaluation team ensured that the wording of questions was as accessible as possible.

Internal consistency - ‘the extent to which items in a questionnaire scale are correlated, thus measuring the same concept’ (2007, p. 36). Two approaches were taken to monitoring this criterion: confirmatory factor analysis (CFA) and Cronbach’s Alpha. CFA gives an indication of whether the data gathered in a survey fits the structure that researchers would
expect, in other words whether or not correlations between the entire set of items suggest the existence of the variables that are apparently being measured. Cronbach’s Alpha indicates correlations between items on a given scale.

The evaluation team established satisfactory scores in both measures with the overall AfA sample (Humphrey, et al., 2011, pp. 118-119) although for this report it is necessary to re-examine the Alpha values with the smaller and more specific sample used. Before doing so, the splitting of ‘classroom relationships’ mentioned above needs to be supported by an additional CFA.
Table 4: Output statistics from confirmatory factor analysis

<table>
<thead>
<tr>
<th>CMIN/DF</th>
<th>NFI</th>
<th>TLI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>55.7</td>
<td>.87</td>
<td>.75</td>
<td>.87</td>
</tr>
</tbody>
</table>

Various scores are generated by the ‘Amos’ software used for CFA, and in general the values suggest proceeding albeit with some caution. For example, the desirable value for the three above statistics to the right is .9 and so the model has not quite reached that standard. However, there is ongoing discussion about how absolute these standards are (Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004) and so as the values were approaching the optimal levels the model was deemed acceptable.

Table 5: Cronbach’s alpha values for survey scales

<table>
<thead>
<tr>
<th>Alpha value</th>
<th>Peer relationships</th>
<th>Teacher relationships</th>
<th>Behavioural problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha value</td>
<td>.876</td>
<td>.725</td>
<td>.897</td>
</tr>
</tbody>
</table>

Accepted cut-off points for this statistics are also open to debate. In this case, although the value for the teacher relationships scale is between the higher commonly accepted value of 0.8 and the lower value of 0.7 (Field, 2005, p. 668), this is likely to reflect the fact that the scale comprises of only 2 items, whereas the behavioural problems scale contains 9 and peer relationships 6. Overall, the internal consistency of the three scales is satisfactory based on the two measures.
Construct validity - ‘the extent to which scores on a particular instrument relate to other measures in a manner that is consistent with theoretically derived hypotheses concerning the concepts that are being measured’ (Terwee, et al., 2007, p. 36). This was established by successfully testing the hypotheses that behavioural problems and classroom relationships would be negatively correlated with one another, and that these measures would be able to discriminate between pupils with ASD or BESD and the rest of the AfA sample (Humphrey, et al., 2011, p. 119).

Floor and ceiling effects - these concern the proportion of the sample that receive the maximum or minimum score on a scale. Values above 15% have been suggested by Terwee et al (2007) as indicative of a level that may reduce the sensitivity of a scale. The table below demonstrates that the only significant build-up of scores was well beneath that limit.

*Table 6: Floor and ceiling frequencies for survey scales*

<table>
<thead>
<tr>
<th></th>
<th>Peer relationships</th>
<th>Teacher relationships</th>
<th>Behavioural problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASD</td>
<td>Floor %</td>
<td>0</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Ceiling %</td>
<td>0</td>
<td>13.2</td>
</tr>
<tr>
<td>BESD</td>
<td>Floor %</td>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>Ceiling %</td>
<td>4.0</td>
<td>12.7</td>
</tr>
</tbody>
</table>
3.2.3 - Data collection procedure

In December 2009, participating schools were given various documents regarding the surveys that were to be used in the evaluation. These included information sheets for parents (appendix 3) explaining the aims and process of the evaluation and how data gathered about their children would be used and protected. This sheet stressed the confidentiality and safe handling of pupil data, and provided an opt-out form, which could be sent at any stage of the study should the parent wish to remove their child’s data from the evaluation. Although distributed by schools, the documents came with freepost return envelopes to the evaluation team. They were translated into the 9 most prevalent foreign languages across the local authorities. Schools were invited to request copies of whichever translations were appropriate for their parent bodies. These measures facilitated a good level of inclusivity and enabled parents wishing to opt out to do so easily and discreetly.

Schools were given similar information sheets explaining the evaluation for the teachers that they were asking to complete the surveys, as well as instructions for completing the survey online. They were asked to ensure that staff completing surveys knew the individual students well enough to complete the survey. The evaluation team was clear throughout the process that paper copies of the survey were available but that online submission was preferred. This was to reduce any chance of human error in inputting several thousand surveys, as well as to reduce the environmental cost of the operation. Teachers were given the option of completing the survey with a member of the evaluation team over the telephone for explanation of any survey items. Schools had unique passwords to the survey website and were given the contact details of several members of the evaluation team for general enquiries or technical support. When children were opted out of the evaluation by parents, schools were notified to avoid unnecessary survey completions.
The survey was first collected between January and March 2010 (time 1), and included scales on classroom relationships, behavioural problems and bullying, as well as demographic data such as gender and SEND category. The unique pupil number (UPN) for each child was also requested so that the subsequent surveys could be matched to the initial collection. The survey was collected again in June 2011 (time 2). During this period, the evaluation team also obtained academic and attendance data from the Department for Education, as well as further demographic data such as free school meal eligibility, which is included in the phase 1 analysis. This data was matched to survey entries using UPNs.

3.2.4 - Pre-analysis procedure

Having collected the quantitative data, there were several steps to complete before running the inferential analysis.

3.2.4.i - Classroom relationships

Following the confirmatory factor analysis and examination of Cronbach’s alpha values described above, items from the ‘positive relationships’ scale of the WOST were computed to form scales for the variables ‘teacher relationships’ and ‘peer relationships’. Change scores were obtained by subtracting time 1 values from time 2 values.

3.2.4.ii - Academic outcome

A composite variable was also computed from the English and Mathematics points scores, which warrants explanation as the choice of phase 1 dependent variable has obvious importance to the study. Although it could have been of interest to keep them separate in that classroom relationships might have had differential impact on the subjects, in a study that relates to
two pupil groups and contains two methodologies it was considered that priority must be placed on parsimony for the sake of generating clear findings. This was in line with advice from the PhD panel after the first year of the study.

A decision also had to be made regarding how to model academic outcomes. There was an option of using academic progress as a dependent variable (final score minus baseline score). Given the intervention context mentioned above, findings regarding progress could be of practical use. However, measuring change does not account for variation in score itself. For example, a pupil moving from 4c to 4a has the same change value as one moving from 7c to 7a. Ultimately as little research on the association between classroom relationships and academic attainment has been conducted for these groups, the contribution of this research to the field is to provide some insight into this association rather than to test its implications for academic progress.

Another issue to consider was that, as one would expect pupil attainment on a standardised scale to be affected by year group, the broad age range (7-16) in the sample could undermine the analysis. To account for this effect, baseline attainment was included as a predictor variable. This means that any association discovered between classroom relationships and final attainment is independent of baseline attainment. This in turn should theoretically account for the influence of age, which should be no more influential on final attainment than it is on baseline attainment. Although this could be disputed, controlling for age by including baseline attainment appeared the best available solution to the problem. As stated previously by Gottfried (2010), this procedure also has the advantage of accounting for additional factors linked to attainment but not included in the model, such as position on the SEND register, as long as they are equally likely to influence attainment at both timepoints.
3.2.4.iii - Additional predictors

As behavioural problems and attendance were measured three times and twice respectively there was a decision to make regarding how many measures to use. Computing a mean from multiple measures adds test-retest reliability (Field, 2005, p. 747) However, using only pupils with all measures completed would have caused more sample attrition, so the following t-tests were conducted to see pupils with missing measures should be excluded from the analysis.

Little difference in mean level of behavioural problems was found between pupils with two measures completed ($M=1.02$, $SE=0.69$) and those with three measures completed ($M=1.01$, $SE=0.71$). This difference was not significant $t(800) = 0.12, p < .05$, and the effect size was small (Cohen's $d = 0.01$, $r > 0.01$). There was also little difference in mean attendance level between pupils with one annual measure ($M=91.23$, $SE=20.62$) and those with both annual measures completed ($M=92.25$, $SE=7.79$). This difference was not significant $t(790) = 0.54, p < .05$, and the effect size was small (Cohen’s $d = 0.04$, $r = 0.02$). The negligible group effects reported above suggest that there is no cause to exclude pupils with one missing value for behavioural problems or attendance. Pupils missing two out of three behavioural problems measures or both attendance measures, were excluded from the regression analyses on a pairwise basis.

Finally, non-English first language groups were combined as the numbers within more specific categories were insufficient for them to be coded as dummy variables.

3.2.5 - Analytical strategy
Multiple regression analysis was a clear choice for answering subquestion 1, as it is well positioned to account for the ‘complexities’ (Morrison, 2002) thought to surround the relationship-learning association in the form of alternative predictors of attainment. It was also hoped that findings regarding relationship-learning association strength would be more helpful to practitioners if comparable to correlations with other theoretically relevant factors. A basic explanation of this technique follows.

Single regression between ‘x’ and ‘y’ generates a correlation between the two by plotting the values for each case and drawing a straight line between the points that represents their distribution as accurately as possible. This line gives an approximation of how much increase (or decrease) in ‘x’ that we might expect if the ‘y’ value for any given case rises by a certain amount (which can be standardised to units of standard deviations). The approximation is based on the trend observed for the cases that have been already plotted, meaning that more confidence in the results will arise when more cases are plotted. The approximation is expressed as a correlation, which ranges from 0 (no relationship) to 1 (perfect correlation such as relationship between height in metres and height in centimetres). In other words, simple regression gives an approximation of how much ‘y’ increase is theoretically predicted by ‘x’ increase.

Multiple regression extends this principle but accounts for multiple predictors (e.g. $x_1$, $x_2$, $x_3$) at the same time. The model gives a predicted $y$ value based on the given values in all of the predictor variables. It examines the correlations between individual predictors and the outcome variable and weights these predictors accordingly in estimating the outcome. These weightings are reported as beta values, and they can be used to assess how influential any given predictor is in determining the outcome variable. Crucially, their reported level of influence takes into account the influence of all the other predictor variables in the model, making it a measure of unique influence within the model.
In both forms of regression there is a level of error, which is the difference between the ‘y’ value that the model predicts and the ‘y’ value that has actually been reported. Clearly, more error means less confidence in the results of the model, but in the case of multiple regression the distribution of ‘error’ between the cases is appraised according to several criteria, as discussed in the ‘assumptions’ section of the results. These criteria are known as assumptions because in generating the values described above the model has assumed that the criteria have been met. If they have not, the findings are undermined.

Multiple regression analysis has been criticised on epistemological grounds (e.g. Rubinson & Ragin, 2007). While there were no alternatives to this method in the case of this enquiry, it is still worth acknowledging the existing critique. It has been pointed out that in comparing variables, multiple regression analysis does not discuss cases. ‘In regression analysis, cases do not constitute anything in and of themselves, they are merely the carriers of information about relationships among variables’ (Rubinson & Ragin, 2007, p. 375). For some researchers therefore, findings from multiple regression analyses do not connect with their own understandings of the given phenomena. This can be related to the ‘reductionist’ critique of positivism discussed earlier in terms of a loss of individual representativeness. While the point is irrefutable, it is hoped that such researchers would appreciate the efforts made in this thesis to relate phases 1 and 2 with one another and gain the benefit of case study insight to address that weakness. To some extent ‘cases’ are considered in phase 1 as the sample consists of two distinct groups, which are separated in all phases of the analysis. Furthermore, considering the phenomena in terms of variables enables this study to suggest whether or not classroom relationship change is important to learning for these groups when compared to other factors, which helps to put the findings into context.
The regression model used was ‘forced’ rather than ‘hierarchical’ meaning that all predictors were entered into the model at the same time rather than in blocks. This was because there was not a theoretical rationale for using splitting factors into different groups.

3.3 - Phase 2: Qualitative enquiry

3.3.1 - Data collection

The transcripts analysed in this thesis relate to two case study children with ASD and two with BESD. Multiple semi-structured interviews of between fifteen and thirty minutes with parents, school staff and in three cases with the child were conducted by the researcher in case study schools between April 2010 and July 2011 (see appendix 7 for sample transcript, appendix 8 for sample interview schedule). There was some scope for the researcher to add in supplemental questions to the schedule while interviewing participants who were likely to be involved in this investigation – either in terms of pre-planned or improvised questions. Where pre-planned, these were based on themes from the classroom relationships literature or previous interviews. Appendix 8 provides more detail on the development and use of interview questions. The communication difficulties presented by one of the children with ASD precluded an interview. Interviews were conducted as part of the Achievement for All evaluation, although participants consented to the additional use of their data in this thesis (appendix 5).

As discussed in the introduction, collecting data for dual purposes imposed constraints on the scope of material that was relevant to the thesis. For example, there was generally not sufficient time during case study visits to observe thesis case study children and there was not a guarantee that participants relevant to the thesis case study would be available for interview on visit days. The use of multiple cases, with multiple interviews
and participants allowed the researcher to have the necessary flexibility to collect enough data for the thesis – but this does mean that each case study has a slightly distinct array of sources rather than a standard number of teacher, parent or pupil interviews. This breadth of data also highlights the advantage of working within AfA in terms of access to multiple participants within several school over an 18-month time frame.

3.3.2 - Data presentation

The data will be grouped on two levels. The primary units of analysis are the individual children interviewed or discussed in the interviews. Each set of transcripts forms a case study. Within each case study, relevant extracts will also be organised by theme, at every point attempting to make inferences that synthesise data from across all interviews in that case study, as well as researcher observations, contextual information and quantitative data where appropriate. This is outlined in Figure 12.
An advantage of this strategy is the opportunity for triangulation between professional and parental perspectives in each case, along with the child’s own views in all but one instance. Triangulation is understood here as the use of multiple methods or sources to corroborate each other and is viewed within case study methodological texts (e.g. Yin, 2011) as a means of making findings more robust. However, warnings are given about triangulation between data sources which vary in their underlying epistemological assumptions (Silverman, 2000). Such concerns are similar to the criticisms of mixed methods discussed in the overview.

While integrating different data forms is a challenge, it is argued that the addition of pupil level quantitative data to case study discussion is an example of making quality meta-inferences (Onwuegbuzie, et al., 2011). There is an opportunity to compare perceptions of classroom relationship quality and academic achievement suggested in interview with the survey responses and the achievement data sent by schools to their local authorities. This is an example of good mixed methods practice in that one
data set is used to improve a potential weakness of the other, which is the reliability of comments made in the interviews. For example, the concept of ‘researcher effect’ (M. B. Miles & Huberman, 1994, p. 165) suggests that academic achievement may be overestimated or underestimated during interviews as the researcher may have been associated with an external institution monitoring school practice or pupil progress.

Phase 2 design provides triangulation on multiple levels, firstly between participants within each case study, for example between parent and teacher. Secondly, as multiple parent and staff interviews were conducted there is also triangulation within participants in several cases. This somewhat reduces the risk of reporting opinions that are not fully representative of participants because they are affected by particular circumstances at the time of interview. Finally, cross-case synthesis can provide some triangulation between cases (Morrison, 2002) although it must be stressed that the emphasis within this phase is on representing individual children rather than generalisation.

One alternative strategy would have been to use participant groups (e.g. teachers versus parents) as the primary unit of analysis in order to facilitate between-group comparisons, such as whether teachers placed more importance on classroom relationships than pupils or parents did. However, as stated above, the purpose of phase 2 is to complement the generalisability of phase 1 results with more representative, contextually rich detail regarding any influence that classroom relationships might have on academic attainment. The ability of multiple interviewees speaking about one child to corroborate one another in deepening the picture of each child seemed most suitable for achieving this purpose. Generalisations about teachers’ views regarding classroom relationships would likely be a poorer complement to phase 1 results and thus yield lower quality meta-inferences (Onwuegbuzie, et al., 2011). Furthermore, preserving individual cases
arguably has the ethical advantage of making it more difficult to bend findings to suit the agenda of the researcher (BPS, 2009) during analysis.

3.3.3 - Case study methodology

Case study methodology has a disproportionately small amount of methodological literature in relation to its prevalence in social science research (Yin, 2011) although a number of texts have begun to address the gap. Yin defines case study designs as single or multiple, and holistic or embedded. The latter distinction refers to whether there is more than one unit of analysis within each case. As this is so, this case study design is embedded and multiple. Multiple cases ‘can provide greater confidence’ in findings (Yin, 2011, p. 7) as they present a form of replication. This is not to suggest that the research is insensitive to the differences between cases or that the replication is akin to that of an experimental design. Instead, ‘theoretical replication’ has been defined as selecting cases that may produce ‘contrasting results but for anticipatable reasons’ (p. 8). The reasons in this study include the individual educational needs of each child, which may interact with relationship-learning mechanisms. Yin also points out that no rule exists regarding the number of cases that need to be included in a multiple-case study as there is no number of cases where a tally of findings could lead to an ‘unqualified result’ (p. 9).

3.3.4 - Validity and reliability

Robust mixed methods research relies on ensuring that each method employed is done so reliably and that valid inferences are drawn (Greene, 2007). While there has been discussion of these issues throughout this subchapter, it may be useful to those appraising the rigour of phase 2 to summarise measures taken to improve reliability and validity. Silverman describes the main threat to validity and reliability in qualitative research as
‘anecdotalism’ (2000, p. 177) which is the practice of presenting instances of data that confirm a preferred explanation without accounting for how representative those instances are of participants. This is an inherent problem for qualitative researchers, who are required to reduce their data for brevity and clarity and to comply with requirements regarding length of submissions. Silverman’s (2000) suggestions for tackling anecdotalism are discussed below in terms of their application to phase 2.

1. Triangulation - various forms of triangulation allow conclusions to be verified according to multiple sources. To this end the presentation of case studies will report agreement or disagreement between participants within each case and present illustrative quotes.

2. Respondent validation - the practice of inviting participants to verify tentative results is not possible as the accounts are drawn together and would therefore compromise anonymity.

3. Refutability principle - seeking to refute initial assumptions, analysis of transcripts will include the search for evidence of classroom relationships not being important for learning.

4. Constant comparative method - ‘the qualitative researcher should always attempt to find another case through which to test out a provisional hypothesis’ (Silverman, 2000, p. 179). This is satisfied by the inclusion of multiple case studies.

5. Comprehensive data treatment - attempting to test inferences against every available piece of data. While this is not fully possible due to the number and irrelevant content of portions of the interviews, extensive case discussions saturated with illustrative quotations are provided to make the data treatment as comprehensive as possible.

6. Reliable transcription - although the interviews are not transcribed using detailed conventions such as those of conversation analysis (Silverman, 1997), they were professionally transcribed and verified.
against the audio recording by the researcher, who conducted the interview.

3.3.5 - Using Nvivo

Early phases of analysis made use of computer software ‘Nvivo’ to organise documents into case study groups, code relevant extracts into themes, and to reorganise data by theme per case study e.g. all excerpts from case study 1, his mother and teachers relating to peer relationships. Additionally, ‘memos’ were attached to particular excerpts where a piece of additional contextual information or recollection from the interview assisted interpretation. Computer usage has been widely recognised to reduce practical difficulties of qualitative research (e.g. LeCompte & Preissle, 1993).

Excerpts were selected in a manner that preserved the conversational context of the relevant comment to assuage the loss of meaning associated with such textual reductions and manipulations (Kelle, 2004). Nonetheless it is recognised that despite this measure inferences drawn from this process may lack the sensitivity and thus validity of analysis that worked from original transcripts throughout. However, this data reduction also improved the validity of the analysis by facilitating triangulation. Furthermore, the mental difficulties involved in the non-computer alternative may likely have resulted in human errors.

The theoretical process of generating them is described further below, but another advantage of using Nvivo was that the themes or ‘nodes’ could be organised in a hierarchy with unlimited subdivisions, which could be added at any point in the process. This feature made it easier for the researcher to reorganise the material in an order that related clearly to research questions and yet allowed the response to emerge inductively from the analysis where appropriate. In this way, the analytical process drew close to the aspiration of incorporating both inductive and deductive reasoning simultaneously.
3.3.6 - Analytical strategy

In qualitative analysis, a choice is often presented between a deductive approach, such as content analysis (Weber, 1990), where a priori categories are applied to the data before the final stages of analysis, or an inductive approach, such as grounded theory (Glaser & Strauss, 1967), where tentative hypotheses emerge only from observations. As Yin (2011, p. 9) suggests, a priori theory can help to develop research questions, compose a study design, organise data analysis and generalise findings in a manner similar to hypothesis testing. However, he also warns that adopting a demarcated theoretical approach may constrain an analytical process from novel discoveries.

A pragmatic take on the deductive/inductive choice in line with the overall stance of this enquiry requires the selected analytical strategy to consider the available data and theory for the particular topic of analysis. While a substantial amount of theory regarding relationship-learning mechanisms is available, relatively little refers to ASD and BESD-specific populations. Indeed, one purpose of this enquiry is to address this shortcoming. Therefore, while the mechanisms discussed earlier are useful in providing ‘sensitising concepts’ (Blumer, 1969) for analysis, it makes sense to balance these with a more inductive approach that might suggest different mechanisms.

Grounded theory itself seems unviable in this case as the data does not meet the criteria of ‘theoretical sampling’ and therefore is unlikely to produce ‘theoretical saturation’ (Glaser & Strauss, 1967, p. 45). This practice involves collecting data and adding cases to the sample on an iterative basis with on-going analysis until sufficient data is captured (Cohen, et al., 2009) which was clearly not possible within the AfA evaluation.
As explained previously, this research considers that inductive and deductive processes may work in tandem as deductive principles are tested against emergent explanations in how they make sense of data. It appears sensible neither to disregard a rich body of literature nor to rely on it too heavily given that it may not relate to the sample. This necessitates an analytical strategy that can balance inductive and deductive processes, leaving a non-exclusive role for theory in looking for patterns in the data. These specifications are almost met by thematic analysis, which can either be inductive or deductive (Braun & Clarke, 2006). Braun and Clarke (2006, p. 78) argue that thematic analysis is a method ‘in its own right’, rather than a tool that falls within the methods of other traditions (Boyatzis, 1998) because much published research has already been thematic in nature but has not been identified as such by the researchers, who either claim to be using a different analytical strategy or do not explain their choice.

Thematic analysis essentially seeks to locate patterns within data before analysing and presenting them. It does not necessarily move towards building a theory, which is the usual end-point of an inductive process, although this is possible. There are good reasons to use an approach similar to thematic analysis in that it allows individual reports of cases before cross case synthesis and identification of themes both within and between cases. Given the importance of these strategies to the reliability and validity of phase 2, this flexibility is a pre-requisite.

However, while thematic analysis is perhaps the closest match of known named approaches to the analytical strategy, it is not the used here as the analysis in this project incorporates inductive and deductive processes simultaneously. Additionally, the structure of the codes used in the analysis was initially based on the research questions, which is a departure from thematic analysis where codes arise from the initial reading of transcripts.
As the analysis continued, new codes were added in response to emergent findings, which is a closer fit to the principles of thematic analysis.

The table below builds on Braun and Clarke’s framework (2006: p. 87) in providing a summary of the steps taken in the analysis of case studies within phase 2.

*Table 7: Phase 2 analytical process, adapted from Braun and Clarke (2006, p. 87)*

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Setup</td>
<td>Importing transcriptions into Nvivo and organising them into cases</td>
</tr>
<tr>
<td>2- Familiarisation</td>
<td>First reading of transcripts to examine the qualities of the data</td>
</tr>
<tr>
<td>3- Generating initial codes</td>
<td>Adding the starting set of codes for analysis based on a priori concepts, e.g. ‘reasons why teacher relationships are important for learning’</td>
</tr>
<tr>
<td>4- Reviewing and applying themes*</td>
<td>Using Nvivo, transcripts coded according to the themes, which were simultaneously expanded in an iterative response to the data</td>
</tr>
<tr>
<td>5- Reorganisation</td>
<td>Using Nvivo to reorganise material to group coded sections from all participants within each case study by theme, allowing triangulation</td>
</tr>
<tr>
<td>6- Producing the report</td>
<td>Presenting emergent themes within and across the cases</td>
</tr>
</tbody>
</table>

*a map of themes is presented in appendix 9

**3.4 - Conclusion to chapter**

This investigation asks one overall research question that comprises three subquestions. In answering the first subquestion regarding the extent to which changes in classroom relationships predict attainment, quantitative data was collected and has been analysed using multiple regression. In answering the latter subquestions regarding the factors influencing relationship-learning association and nature of the association for individual pupils, case study data was obtained and will be discussed in terms of
individual cases and any patterns common across them. The qualitative analytical strategy will be similar to thematic analysis (Braun & Clarke, 2006).

The overall multimethod (Morse, 2003) design incorporates different forms of evidence in the belief that their combination will provide a more insightful view of how the relationship-learning association may operate for children with ASD and BESD. Despite this hope, drawing meta-inferences from both data types requires the researcher to be cautious because of differences in the ontological and epistemological assumptions underpinning each method (Onwuegbuzie, et al., 2011). For this reason, data types are used to answer specific subquestions and are only combined to answer the overall question once sufficient attention has been given to their individual findings and any concerns regarding their validity.
4 - Results

4.1 - Phase 1

These quantitative results address subquestion 1, which asked the extent to which changes in peer and teacher relationships can predict attainment for pupils with ASD and BESD. Continuing adherence to the earlier directive for mixed methods research to carry out each aspect of analysis rigorously (Greene, 2007), there were essential procedures to follow before the inferential statistical analysis, or that which addresses research questions, could be undertaken. The results of these steps will be outlined before presentation of the inferential statistics, which in this case was a multiple regression analysis.

4.1.1 - Descriptive statistics

*Tables 8 and 9: descriptive statistics of continuous variables for each group*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer relationship</td>
<td>150</td>
<td>-2.0</td>
<td>1.5</td>
<td>0.16</td>
<td>0.6</td>
</tr>
<tr>
<td>Teacher relationship change</td>
<td>147</td>
<td>-1.5</td>
<td>2.0</td>
<td>0.16</td>
<td>0.6</td>
</tr>
<tr>
<td>Baseline attainment</td>
<td>152</td>
<td>3.0</td>
<td>46.0</td>
<td>17.1</td>
<td>9.0</td>
</tr>
<tr>
<td>Final attainment</td>
<td>152</td>
<td>3.0</td>
<td>63.0</td>
<td>22.9</td>
<td>11.2</td>
</tr>
<tr>
<td>Behavioural problems</td>
<td>146</td>
<td>0.0</td>
<td>2.8</td>
<td>0.72</td>
<td>0.6</td>
</tr>
<tr>
<td>Attendance</td>
<td>143</td>
<td>69.5</td>
<td>100</td>
<td>94.2</td>
<td>5.4</td>
</tr>
</tbody>
</table>
These tables suggest that both samples are reasonably representative of their populations according to recent national statistics (Department for Education, 2011d). The groups made similar academic progress through the study. The mean attainment values for the ASD group were approximately 1.5 sublevels below that for the BESD subgroup at both timepoints, as 2 points on the attainment scale equal one national curriculum sublevel. Given the higher proportions of children with statements of special educational need in the ASD group (Department for Education, 2011d), the slightly lower attainment values may be expected yet the similar progress levels are surprising. However ‘register status’ is not necessarily a reliable indicator of academic ability, particularly when comparing two need categories. National statistics (Department for Education, 2011d) show that pupils with ASD are more likely than pupils with BESD to reach expected academic levels in Key Stage 4 (age 14-16) but less likely to do so at Key Stage 2 (age 8-10). The higher level of behavioural problems in the BESD group is naturally expected as these issues are one ‘symptom’ of BESD (Department for Education and Skills, 2001), while their lower mean attendance level than the ASD group is in line with national figures (Department for Education, 2011d).

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer relationship</td>
<td>662</td>
<td>-1.8</td>
<td>2.8</td>
<td>0.15</td>
<td>0.6</td>
</tr>
<tr>
<td>change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher relationship</td>
<td>656</td>
<td>-2.0</td>
<td>2.5</td>
<td>0.12</td>
<td>0.7</td>
</tr>
<tr>
<td>change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline attainment</td>
<td>670</td>
<td>4.5</td>
<td>45.0</td>
<td>19.7</td>
<td>8.4</td>
</tr>
<tr>
<td>Final attainment</td>
<td>670</td>
<td>5.0</td>
<td>60.0</td>
<td>26.2</td>
<td>9.6</td>
</tr>
<tr>
<td>Behavioural problems</td>
<td>655</td>
<td>0.0</td>
<td>2.7</td>
<td>1.1</td>
<td>0.7</td>
</tr>
<tr>
<td>Attendance</td>
<td>648</td>
<td>85.6</td>
<td>100.0</td>
<td>91.9</td>
<td>8.1</td>
</tr>
</tbody>
</table>
4.1.2 - Data screening

Following data screening protocol set out by Tabachnik and Fidel (2007, p. 61) regarding accuracy and indicators of inflation or deflation of correlations, the accuracy of the data file in terms of human error was acceptable as all values were within range, with plausible means and standard deviations.

Correlations arising from the dataset are unlikely to be inflated by the use of a composite measure for classroom relationships because the instrument did not contain reworded multiples of the same items and thus does not risk inflating correlations by measuring the same phenomena twice. However, there does appear to be a risk of deflated correlation for some of the categorical variables arising from highly uneven splits as discussed in the descriptive statistics. One response could be to subdivide them in the analysis, for example grouping participants by gender and by having BESD / ASD. However this would result in samples too small for the analysis, as will become clearer in the ‘assumptions of multiple regression’ section.

Tabachnik and Fidell (2007) recommend reporting any unusual patterns in the distribution of values of individual variables entered into multivariate models, although univariate normality is not a requirement of this form of analysis. Attendance was the only predictor variable with worrying indicators as kurtosis (ASD 5.2, BESD 13.3) and skewness (ASD -2.1, BESD -2.8) were evident for both groups. In line with the stance taken regarding non-normal distribution of final attainment, it was decided not to transform this data but to advise readers of the result. In the case of attendance figures, this distribution is a reflection of national trends (Department for Education, 2011b). Attendance was also the only predictor variable to have outliers (5 in the ASD group, 12 in the BESD group), which were removed from the sample as there the accuracy of these extreme values was unclear. Although there is discussion surrounding the necessity or desirability of removing outliers, the position taken was to obtain the ‘most honest
estimate of population parameters possible’ (Osborne & Overbay, 2004, p. 7).

Table 10: Distribution of academic attainment scores

<table>
<thead>
<tr>
<th>Group</th>
<th>Sample size (N)</th>
<th>Mean score</th>
<th>Standard deviation</th>
<th>Skewness z-score</th>
<th>Kurtosis z-score</th>
</tr>
</thead>
<tbody>
<tr>
<td>BESD</td>
<td>670</td>
<td>26.21</td>
<td>9.57</td>
<td>2.13</td>
<td>-0.37</td>
</tr>
<tr>
<td>ASD</td>
<td>152</td>
<td>22.88</td>
<td>11.19</td>
<td>2.83</td>
<td>0.92</td>
</tr>
</tbody>
</table>

As subquestion 1 posits final attainment is the dependent variable, the unusual distribution of these scores require discussion. Table 10 illustrates that the BESD group on average achieved a higher level of final attainment, and that final attainment values were slightly more narrowly distributed around the mean in the BESD group than the ASD group. The relatively high z-scores for skewness in both groups illustrate that final attainment values are concentrated to the left of the distribution. It is generally accepted that these findings should be compared to histograms (of the distribution of final attainment values) for each group because the skewness statistic is influenced by sample size - it is likely to be higher in a larger sample (Field, 2005).

Histograms displayed relatively normal distribution for the BESD group, but a bimodal distribution for the ASD group. A bimodal distribution contains two peaks, illustrative of two different modal scores. It is difficult to speculate as to a reason for this distribution, despite having investigated this further. For example, when the ASD group was split into those with and without statements of special educational need or into year groups, bimodal and other non-normal distributions of final attainment were found even within those sub-groups. It was decided that the final analysis would be better served by not transforming this variable to make the distribution more normal, as this could confound any conclusions that might be made from the multiple regression models. As there is no non-parametric equivalent to multiple regression, the analysis continued as planned but with a proviso regarding dependent variable distribution in the ASD group.
4.1.3 - Assumptions of multiple regression

Multiple regression analysis depends on certain criteria being fulfilled by the data that is used. Where these assumptions are violated, the generalisability of the results is compromised and the analysis may not provide satisfactory responses to a research questions. The data were checked thoroughly according to guidelines from multiple sources regarding the assumptions of the technique (e.g. Field, 2009; Menard, 1995), the results of which are contained in the following tables. Several of the assumptions relate to the ‘residuals’ within the regression models, which is the difference between the values in the dependent variable that the model predicts and the values that actually exist. This concept can also be referred to as ‘error’. These values are charted in scatterplots of outcome against predicted outcome, or expected versus observed values. Brief explanations of certain assumptions are given below:

Sample size - As more data is gathered, the conclusions that can be drawn from the analysis become more reliable. In multiple regression, random data can appear to have an effect on the outcome variable if the sample size is too low. Acceptable sample size is based on how many predictor variables are entered into the model.

Multicollinearity - If two predictor variables are strongly correlated with one another, they will predict very little unique variance in the outcome variable. This means that the regression model contains predictors that contribute little to its capacity to predict the outcome. In this case it is also impossible for this analysis to determine which of the two highly correlated predictors is the most important.
Multivariate outliers - Isolated cases that differ substantially from the general trend in how the regression model predicts scores in final attainment can exert a disproportionate influence on the results.

Independence of residuals - There should be no correlations between the amounts of error for any two cases entered into the model.

Normality of residuals - There should generally be little error in the model (small residuals) and where larger residuals occur they should be randomly distributed. This can be judged by observing the scatterplot.

Linearity - The relationship between the dependent variable and the predictor variables entered into the model should be linear, illustrated by a straight line in the scatterplot.

Homoscedasticity - The variance in the size of residuals should not be related to the level of the predictor variables, illustrated by a lack of tilt in the straight line mentioned above.
Table 11: BESD model meeting assumptions of multiple regression

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Value</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>N=648</td>
<td>The larger BESD subgroup is comfortably large enough for a model with 8 IVs (Tabachnik &amp; Fidell, 2007)</td>
</tr>
<tr>
<td>Correct variable types</td>
<td></td>
<td>All predictor variables categorical or continuous. Dependent variable is continuous.</td>
</tr>
<tr>
<td>Non-zero variance</td>
<td></td>
<td>All predictor variables have variance greater than zero</td>
</tr>
<tr>
<td>Missing data</td>
<td></td>
<td>Participants missing dependent variable data were removed from the sample. Cases of missing independent variable data were excluded (as advocated by Tabachnik and Fidell (2007)) from the regression model on a pairwise basis, and for no variable does this exclude more than 3% of the sample.</td>
</tr>
<tr>
<td>Multivariate outliers</td>
<td></td>
<td>No outliers exceeded the critical Mahalanobis distance (31.264) (Tabachnick &amp; Fidell, 2007). Cook’s distance value (1) (Field, 2009: 200) or centred leverage value (0.044) (Field, 2009).</td>
</tr>
<tr>
<td>Independence of residuals</td>
<td>Durbin-Watson: 2.020</td>
<td>Value is comfortably within acceptable range (1-3) (Field, 2009).</td>
</tr>
<tr>
<td>Normality of residuals</td>
<td>See appendix 6</td>
<td>Residual plot indicates normality</td>
</tr>
<tr>
<td>Linearity</td>
<td>See appendix 6</td>
<td>Plot of expected versus observed values indicates linearity</td>
</tr>
<tr>
<td>Homoscedasticity</td>
<td>See appendix 6</td>
<td>Plot of expected versus observed values indicates homoscedasticity</td>
</tr>
</tbody>
</table>
Table 12: ASD model meeting assumptions of multiple regression

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Value</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size N &gt; 50 + (8 x number of IVs)</td>
<td>N=143</td>
<td>The smaller ASD subgroup is above the threshold (114) for a model with 8 IVs (Tabachnik &amp; Fidell, 2007)</td>
</tr>
<tr>
<td>Correct variable types</td>
<td></td>
<td>All predictor variables categorical or continuous. Dependent variable is continuous.</td>
</tr>
<tr>
<td>Non-zero variance</td>
<td></td>
<td>All predictor variables have variance greater than zero</td>
</tr>
<tr>
<td>Missing data</td>
<td></td>
<td>Participants missing dependent variable data were removed from the sample. Cases of missing independent variable data were excluded (as advocated by Tabachnik and Fidell (2007)) from the regression model on a pairwise basis, and for no variable does this exclude more than 4% of the sample.</td>
</tr>
<tr>
<td>Multicollinearity</td>
<td>Tolerance</td>
<td>Variation Inflation Factors are within acceptable range (Menard: 1995, Field, 2009).</td>
</tr>
<tr>
<td></td>
<td>(1/TIF) range: 1.043 - 1.565</td>
<td>Average: 1.27</td>
</tr>
<tr>
<td>Multivariate outliers</td>
<td></td>
<td>No outliers exceeded the critical Mahalanobis distance (31.264) (Tabachnik &amp; Fidell, 2007) or Cook’s distance value (1) (Field, 2009: 200) but one exceeded the critical centred leverage value (0.044) (Field, 2009) and was therefore deleted.</td>
</tr>
<tr>
<td>Independence of residuals</td>
<td>Durbin-Watson: 2.239</td>
<td>Value is comfortably within acceptable range (1-3) (Field, 2009)</td>
</tr>
<tr>
<td>Normality of residuals</td>
<td>See appendix 6</td>
<td>Residual plot indicates normality</td>
</tr>
<tr>
<td>Linearity</td>
<td>See appendix 6</td>
<td>Plot of expected versus observed values indicates linearity</td>
</tr>
<tr>
<td>Homoscedasticity</td>
<td>See appendix 6</td>
<td>Plot of expected versus observed values indicates homoscedasticity</td>
</tr>
</tbody>
</table>
The tables above show that, except for one multivariate outlier that has been removed, the data was acceptable for multiple regression analysis. The major proviso emerging from screening and checking assumptions is that uneven splits in categorical variable groupings may deflate correlations between those variables and the outcome variable. As these measures are not central to answering the subquestion 1, this only a limited threat but has an impact on how much this data can contribute to subquestion 2. However, some caution must be exercised when comparing the relative importance of categorical to continuous predictors. The difference in sample size between the BESD and ASD groups does not threaten the generalisability of either model, but again necessitates caution in any comparisons between the groups.

4.1.4 - Inferential statistics

For both BESD and ASD groups, standard multiple regression analysis was undertaken using SPSS REGRESSION. Mean English and Maths score at time 2 (final attainment) was the dependent variable and the independent variables were as follows:

- change between time 1 and time 2 in teacher relationship score
- change between time 1 and time 2 in peer relationship score
- gender
- language group (English versus non-English as primary language)
- free school meal eligibility
- mean behaviour score
- attendance level across the project
- time one mean English and Maths score (baseline attainment)
Tables 13 and 14: Results of multiple regression analyses

ASD group (N = 143)
Dependent variable = final attainment

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer relationship change</td>
<td>0.03</td>
<td>0.56</td>
<td>.00</td>
</tr>
<tr>
<td>Teacher relationship change</td>
<td>-0.08</td>
<td>0.54</td>
<td>-.01</td>
</tr>
<tr>
<td>Baseline attainment</td>
<td>1.17</td>
<td>0.04</td>
<td>.94**</td>
</tr>
<tr>
<td>Behaviour</td>
<td>-0.48</td>
<td>0.54</td>
<td>-.03</td>
</tr>
<tr>
<td>Attendance</td>
<td>0.10</td>
<td>0.06</td>
<td>.05</td>
</tr>
<tr>
<td>Language group (e.g. 1 = English as an additional language)</td>
<td>-2.54</td>
<td>1.53</td>
<td>-.05</td>
</tr>
<tr>
<td>FSM eligibility (e.g. 1 = eligible)</td>
<td>-1.04</td>
<td>0.88</td>
<td>-.04</td>
</tr>
<tr>
<td>Gender (e.g. 1 = female)</td>
<td>-0.33</td>
<td>0.90</td>
<td>-.01</td>
</tr>
</tbody>
</table>

Note: $F = 139.59$, $R = .947^{**}$, $R^2 = .90$, adjusted $R^2 = .89$.

BESD group (N = 648)
Dependent variable = final attainment

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer relationship change</td>
<td>0.92</td>
<td>0.31</td>
<td>.06**</td>
</tr>
<tr>
<td>Teacher relationship change</td>
<td>0.50</td>
<td>0.28</td>
<td>.04</td>
</tr>
<tr>
<td>Baseline attainment</td>
<td>1.04</td>
<td>0.02</td>
<td>.91**</td>
</tr>
<tr>
<td>Behaviour</td>
<td>-0.91</td>
<td>0.24</td>
<td>-.07**</td>
</tr>
<tr>
<td>Attendance</td>
<td>0.05</td>
<td>0.02</td>
<td>.04*</td>
</tr>
<tr>
<td>Language group (e.g. 1 = English as an additional language)</td>
<td>0.55</td>
<td>0.48</td>
<td>.02</td>
</tr>
<tr>
<td>FSM eligibility (e.g. 1 = eligible)</td>
<td>-0.25</td>
<td>0.33</td>
<td>-.01</td>
</tr>
<tr>
<td>Gender (e.g. 1 = female)</td>
<td>-0.06</td>
<td>0.38</td>
<td>-.00</td>
</tr>
</tbody>
</table>

Note: $F = 387.78$, $R = .912^{**}$, $R^2 = .83$, adjusted $R^2 = .83$.

*p < .05

**p < .01

4.1.5 - Interpreting the inferential statistics

In terms of the overall regression models, the adjusted $R^2$ values of .83 and .89 respectively mean that both models predict more than four fifths of variance in final attainment, while the similarity between $R^2$ value and
adjusted \textit{R}^2\textit{ value in each model suggests that these findings may be generalisable. Furthermore, an ANOVA demonstrated that both models were significantly better than a ‘best guess’ (Field, 2005, p. 189) at predicting final attainment as seen in the \textit{F} values, which are both significantly greater than 1.

Within the ASD model, only baseline attainment was a significant independent predictor of variance, with a high beta value of .94 and therefore again it appears that the vast majority of variance explained by the model is accounted for by that single variable. A difference of 4.5 sublevels in baseline attainment predicts a difference of 5 sublevels in final attainment. In terms of research question 1, the chief finding requiring interpretation is that among children with ASD neither relationship change measure was a significant predictor of final attainment, whereas for children with BESD peer relationship change was a significant predictor and teacher pupil relationship change was not. However, the following table and discussion below suggest that even the ‘positive’ result regarding PPR (pupil-pupil relationship) change for pupils with BESD must be interpreted with caution.

Within the BESD model, several independent variables were significant predictors of variance in final attainment after controlling for the other independent variables in the model. At the \( p < .01 \) level, peer relationship change, baseline attainment, behaviour and attendance all made independent contributions, although the substantially greater beta (\( \beta \)) value \(^6\) (or effect size) for baseline attainment demonstrates that the majority of variance explained by the model is accounted for by that variable alone as one would expect. The value of .91 means that for every 1 standard deviation increase in baseline attainment, which is approximately 4 national curriculum sublevels, the model predicts that final attainment will increase by 0.91 standard deviations, or just under 5 sublevels.

\(^6\) Statistic is subsequently referred to in the discussion as ‘effect size’
Table 15: Descriptive statistics for selected variables (BESD group)

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPR</td>
<td>0</td>
<td>3</td>
<td>1.76</td>
<td>.56</td>
</tr>
<tr>
<td>Scale equivalent</td>
<td>0</td>
<td>18</td>
<td>10.56</td>
<td>3.36</td>
</tr>
<tr>
<td>PPR change</td>
<td>-1.8</td>
<td>2.8</td>
<td>0.15</td>
<td>0.6</td>
</tr>
<tr>
<td>Scale equivalent</td>
<td>-10.8</td>
<td>16.8</td>
<td>0.9</td>
<td>3.6</td>
</tr>
<tr>
<td>Final attainment</td>
<td>5</td>
<td>60</td>
<td>26.2</td>
<td>9.6</td>
</tr>
<tr>
<td>Sublevel equivalent</td>
<td>2.5</td>
<td>30</td>
<td>13.1</td>
<td>4.8</td>
</tr>
</tbody>
</table>

As responses were scored from 1 to 4 on each item, the highest possible score on the PPR scale is 24 (6 responses of strongly agree), the lowest possible score is 6 (6 x strongly disagree). All items are positively worded. The range of the PPR scale is therefore 18 points. In other words, the maximum change, which would mean all six responses moving from ‘strongly disagree’ to ‘strongly agree’ would be an 18 point increase on the scale. However, PPR scores were converted to a mean score so that they were directly comparable with TPR (teacher-pupil relationship) scores, which had fewer items and thus a shorter scale. The maximum possible PPR change value is therefore 3, and the highest recorded change was 2.8.

One standard deviation of PPR change, which is the unit used by the beta value indicating the independent predictive strength of PPR change on final attainment, was 0.6. This equates to gaining 3.6 points on the scale. The table shows that using the formula of converting mean values back to the scale, a 3.6 point increase represents a positive change of just over 1 standard deviation in the original PPR score, which was 3.36.

The beta value of .06 for PPR change indicates that a 3.6 point gain on the PPR scale predicts a gain of 0.06 standard deviations in final attainment. One standard deviation in final attainment was 9.6 points, which translates to 4.8 national curriculum sublevels (2 points per sublevel). A 3.6 point gain
on the PPR scale therefore independently predicts 0.288 sublevels of academic progress. According to this ratio, in order for positive PPR change alone to predict one sublevel of academic improvement a 12.5 point increase would need to take place.

Such an increase is within the range of PPR change measured, but is extremely unusual. It is over 10 times greater than the mean level of change which was a 0.9 point increase. It would also represent an increase of 3.72 standard deviations in the original measurement of peer relationships. To give an idea of how much change this is in the context of possible school interventions, a 3.72 standard deviation improvement is six times greater than the mean level of change attributed to social and emotional literacy interventions reviewed in a recent meta-analysis (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Put more practically, if this 12.5 increase is rounded down to a 12 point for simplicity it would mean that on all 6 items the teacher response either moved from ‘strongly disagree’ to ‘agree’ or from disagree to ‘strongly agree’. However, the mean level of change (if 0.9 is rounded to 1) was only a movement of 1 point (for example from agree to strongly agree) on one of the six items.

Therefore although there is a significant association between PPR change and final attainment, the effect size may not be strong enough to suggest that tangible academic benefits will accrue from successful peer relationship interventions as will be addressed in the discussion. However, while the beta value was small it was also similar to values relating to behavioural problems (-0.07) and attendance (0.04).

Behavioural problems were negatively correlated with final attainment, which was expected, as this measure was a negative scale. Attendance was the only significant independent predictor of variance at the $p < .05$ level, with a difference of 8% in attendance predicting a difference of one quarter
of a sublevel in final attainment, while teacher pupil relationship change was approaching the lower significance threshold \( (p = .08) \).

Therefore in terms of research question 1, the findings appear to suggest the following patterns within the sample:

1. For children with BESD, peer relationship change is a statistically significant predictor of final attainment, which is independent of the strong predictive effect of baseline attainment.

2. For these children, teacher relationship change does not appear to be a significant predictor of final attainment, although this measure was approaching the \( p < .05 \) threshold for significance.

3. For these children, behaviour and attendance also emerged as significant predictors of final attainment, while language group, gender and free school meal eligibility had no significant effect on final attainment.

4. For children with ASD, no classroom relationship measure or any variable other than baseline attainment was a statistically significant predictor of final attainment.

There are a number of caveats to these findings. Firstly, while adjusted \( R^2 \) value in both models imply some generalisability, the difference in size between the two sub-samples means that there is a greater chance of finding significant predictors in the larger BESD group, as regression analysis is strongly effected by sample size (Field, 2005).

Secondly, when comparing peer and teacher measures it must be stated that the questionnaire used to obtain the data contained six items regarding peer relationships compared to two regarding teacher relationships. While
the confirmatory factor analysis supported the suggestion that two distinct constructs were measured, it is not possible to estimate the impact of the unequal number of items on the relative reliability of the two measures. Therefore caution is advised in interpreting the comparison between the measures.

Thirdly, although peer relationship change was a significant predictor of final attainment, the effect size suggests that the association may not be strong enough for relationship interventions to have tangible academic benefit. However, the strength of the predictive effect is similar to that of behavioural problems or attendance.
4.2 - Phase 2

4.2.1 - Case study 1: Sabbir

*Table 16: Selected quantitative data regarding Sabbir*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Sabbir’s score</th>
<th>Year 5 / BESD mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline TPR</td>
<td>3.00</td>
<td>1.91</td>
</tr>
<tr>
<td>Baseline PPR</td>
<td>1.50</td>
<td>1.72</td>
</tr>
<tr>
<td>Baseline APS</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>APS change</td>
<td>3.50</td>
<td>7.42</td>
</tr>
</tbody>
</table>

Sabbir began the project in Year 5 and was at ‘School Action Plus’ for BESD. The second teacher survey was not completed so relationship change scores are unavailable. As we shall see below, this loss of triangulation is unfortunate as during the project his school undertook an apparently successful intervention around his peer relationships, which according to the baseline teacher survey were slightly below the mean for pupils in Year 5 with BESD. His baseline teacher relationship score was well above the mean at maximum score, and attainment was also relatively high. Sabbir made academic progress during the project, although the rate of progress was less than half the mean rate. Sabbir’s English score actually improved 7 points from 19 to 23 to 26, but his Maths score did not change from 25.

4.2.1.i - Academic context

Sabbir described his challenges in lessons succinctly:

*I—So do you have any difficulties in class?*

*S—Yeah paying attention, sometimes I can pay attention. Finding the right time to listen and not to listen. Finding more times to be friends.*
This level of self-awareness seemed to reflect the substantial amount of time that school staff had spent with Sabbir, particularly as his chosen phrases sounded like the advice of teachers. Sabbir also claimed that he liked to be independent and that he preferred answering questions in front of the class in some subjects more than others. Although he had made good progress in literacy by this point, in his final interview Sabbir told me that it was his least favourite subject because he didn’t like writing. Given his ability to reflect, it was surprising that in both interviews Sabbir claimed to be unaware of how well he was doing academically. Sabbir’s mother told me in her first interview that he was a bright and intelligent boy, and that reports showed that he was making academic progress but was held back by poor behaviour.

4.2.1.ii - Emotional context

Sabbir’s Year 6 teacher had previously taught him in Year 4 and by the time of the interview had developed insights into the emotional difficulties that he exhibited in class, which included negative self-regard, low confidence, and high anxiety:

T: the anxiety is going to physical complaints
(Sabbir’s Y6 teacher)

She drew links between these problems and his family context, and suggested that if the school had access to a psychotherapist she would have put him forward for therapy. This comment probably relates to the particular challenges that this teacher faced in her relationship with Sabbir as presented later.
4.2.1.iii - Family context

Relative to the other case study children, Sabbir’s family life figured prominently in discussions of his problems at school. His father had been absent for a long time according to his mother:

P: I think that was making a big problem for him, hard to concentrate at school and because he wanted to seek the attention he was in a negative way through his school and I think that now has become a habit for him because it’s gone on for such a long time.
(Sabbir’s mother, visit 5)

Sabbir’s mother had a lot of contact with the school, and her perception of the school was quite poor. This stance reflected her view regarding the schools’ response to a previous bullying incident when her daughter attended the school. Sabbir’s Year 5 teacher told me that:

T: his mum was only interested in that he was being bullied, nothing to do with academic. But he had never said anything to me about it. But that was all the mum wanted to talk about so that was quite interesting.
(Sabbir’s Y5 teacher)

The school alerted educational welfare officers about Sabbir’s mother’s inability to get him into school, which she readily admitted had been a problem. This did not seem to have created any additional tension between her and the school, as she viewed the educational welfare officer’s involvement positively.

4.2.1.iv - School context
The school implemented a range of interventions for Sabbir including allocating him a mentor, getting him to spend 1-to-1 time with the school groundsman, behaviour charts, educational welfare officer help with attendance, a ‘circle of friends’ initiative, and getting him to support younger children to boost his confidence and reduce his anxiety. The majority of these interventions were targeted toward social or emotional outcomes, which reflected the school’s agreement with Sabbir’s mother that the root of his difficulties was not academic.

Sabbir’s mother was generally positive about school interventions, for example the introduction of a ‘male role model’ (visit 2). Sabbir seemed to be more aware of his social and behavioural progress than he was of his academic progress:

I: Oh right are these targets all to do with behaviour?
I: Do you have any that are to do with your subjects?
P: No.
I: Okay and how are you doing with you behavioural targets?
P: Very good.
(Sabbir, visit 5)

Sabbir’s Year 6 teacher felt that the school was particularly good at providing for children with SEND:

T: To be honest I think that this school has like... is so inclusive and has such a high priority for these children
(Sabbir’s Y6 teacher)

4.2.1.v - Social context
If the family context was often framed as the origin of Sabbir’s difficulties, the difficulties themselves were largely social. All parties told me that Sabbir only got on with particular pupils and teachers, even after the various interventions:

_I:_ What about his relationship with teachers?

_P:_ On and off, sometimes he gets on very well with other teachers he doesn’t get on so well.

(Sabbir’s mother, visit 5)

_I:_ Do you get on well with all your classmates or some of them?

_P:_ Some of them well just one or two of them.

(Sabbir, visit 5)

Sabbir’s social problems and poor classroom relationships appeared to stem from provocative behaviours:

a lot of the girls didn’t used to want to go anywhere near him or found him quite difficult to be around ‘cause he’s showing them parts of his body or saying quite disgusting things to them or hurting them.

... earlier this year a child in the class left a trainer print on his face that stayed for a week so that’s how much he wound up the other child.

(Sabbir’s Y6 teacher)

His Year 6 teacher also described this as a typical scenario when teaching Sabbir:

_T:_ he’ll find himself asking questions which he knows the answer to so sometimes they’re provocative questions because he knows its a difficult answer or he’ll ask it I think for attention from other children to make other children laugh so a lot of the time he’s sort of not
following not just getting on with what he could actually be doing he's kind of going on some strange diversive route to distract you
(Sabbir’s Y6 teacher)

Sabbir’s mother agreed that his oppositional behaviour with teachers was 'some form of way of seeking attention' (visit 2). She added that it was triggered by his sensitivity to how other children were interacting with him. Sabbir’s mother also intimated that there was a particular problem with the Year 6 teacher for reasons which will be discussed later. Despite the Year 5 teacher downplaying his mothers concerns about bullying, Sabbir claimed on the same visit that he had been involved in bullying, which he felt was partly a result of a negative social reputation:

P—Yeah I have been a victim and I have been a bully too.
I—How did it make you feel when you were a victim?
P—Like really really sad. Some people just tell you do you want to beat up someone and I say I don’t want to. I have a reputation for having problems
(Sabbir, visit 3)

Although he repeated that only got on with a minority of peers, Sabbir told me in the final interview that the bullying had stopped and several peers were now helping him with his behaviour. This seemed to reflect to the ‘circle of friends' intervention, although Sabbir viewed the peer support as reciprocal friendship.

4.2.1.vi - Context summary

Sabbir appeared to be a bright and reflective boy who was held back at school by fairly severe antisocial behaviours that may relate to a difficult family history. The teacher who was most familiar with him felt that his
issues warranted psychotherapy, which had not been available. Sabbir was quite sensitive to classroom relationships both when they were positive and negative, for example his mother suggested that negative peer reception was a behavioural trigger. Although the school had directed numerous interventions towards his social functioning with some success, Sabbir remained relatively isolated from peers. His class teacher was clearly upset that her relationship with him had descended into conflict despite having worked with him for two years and forging what seemed to be a detailed understanding of him.

4.2.1.vii - Peer relationships

There was a clear sense across the interviews that peer relationships were important for learning:

I: And do you think that his difficulties in relating to classmates and teachers, do you think that has an impact on his learning?
P: I think it slightly does mostly, in many different kinds of ways
(Sabbir’s mother, visit 2)

I: Do you think their relationships with each other influences they way they learn?
T: I had not thought of that. I think it would.
(Sabbir’s Year 5 teacher)

Various reasons for this importance emerged. Adding some complexity were comments about why the helpfulness of positive peer relationships varied and could be a distraction. Sabbir seemed very interested in his peers and when his interactions with them became more positive at the end of the project, he said that both he and other children could be more
effective in providing academic support than teachers who were inconsistent and harsh:

\[ P: \text{the teacher can't help them if they're speaking and saying 'calm down' … one moment they can be really horrible to you then the next moment not, like if another child comes in then after they're different. But if a child does something they can like understand you because you're in the same place.} \]

(Sabbir, visit 5)

Sabbir’s sensitivity to teacher mood was interesting given the teacher’s earlier suggestion that he deliberately aggravated her, but it seems that peer relationships can be a learning resource for Sabbir when the teacher relationship is faltering. He told me during this interview that his peers helped him to focus on his work by encouraging him to speak to the teacher if something was on his mind. A year earlier, Sabbir’s mother suggested that his problems in focusing were largely the result of negative peer interactions and relationships, even if the underlying cause was his father’s absence. This also meant that his naturally high confidence ‘went slowly down’ (visit 2), but when she felt that peer relationships had picked up at the end of the project she felt that this had motivated Sabbir to come in to school. He agreed with this.

Both teachers also intimated that peer relationships helped children to focus during lessons but that this did not always apply to Sabbir, who worked well with the most responsible children from his intervention group, but not necessarily with his friends:

\[ I: \text{Do you think that pupils’ relationships with each other influence the way they respond to your lessons?} \]

\[ T: \text{Yes. If there is some sort of issue in the playground or something like that they can’t get past that and that comes into the classroom.} \]
(Sabbir’s Y5 teacher)

T: in terms of actually focusing and learning sort of getting down to his own work I wouldn’t say anyone’s really that been that helpful from his friends.

... 

T: often I’ll spot one of those two children who take their role particularly seriously just trying to motion to him or sort of pulling him over you know somehow trying to that that address that

(Sabbir’s Y6 teacher)

Further comments addressed the variability in the extent to which peer relationships were helpful for learning. Both Sabbir and his mother suggested that girls were better to work with than boys, for example Sabbir’s mother said that ‘the boys sometimes just egg each other on’ (visit 5). She also told me that Sabbir struggled to keep calm in large peer groups but would be very different in a small group. Peer academic helpfulness also varied with characteristics of friends:

I: Does having friends in your class make it easier or harder to learn?

P: Well some make it harder, like saying something funny that will distract me, and some will be like help me. So it helps a little.

I: What do you think makes the difference between a friend that will help you and a friend that will distract you?

P: Like someone that makes you laugh.

(Sabbir, visit 3)

The Year 6 teacher added that good peer relationships were crucial to Sabbir being able to do group work and to his peers recognising the need to support him. Sabbir had said that he particularly enjoyed working with others and that other pupils had helped him improve on his behaviour in lessons by telling him when he was showing warning signs of bad behaviour.
or by giving him strategies to cope with frustration such as going out of the room.

Sabbir also gave a more direct suggestion about how other pupils aided learning when they were interacting positively:

I: What can they do to help you?
P: Like stuff that I did not listen to.
I: Oh so there will be some things that they have heard that you have not hear?
P: Yeah
I: And can you help them in the same way as well?
P: Yeah because sometimes they did not pay attention and sometimes I did not.
(Sabbir, visit 5)

4.2.1.viii - Peer relationships summary

Sabbir was convinced that his peers could be a valuable learning resource, and perhaps more valuable than teachers. Reasons ranged from motivation to attend school and exchanging task information to focussing and not misbehaving in class. His mother felt that peer relationships were crucial to the problems that seriously threatened his learning - his behaviour in lessons and his reluctance to come in to school. While his Year 5 teacher saw peer relationships as important for learning to most pupils, she did not draw a link between them and Sabbir’s difficulties. The Year 6 teacher felt that only the most responsible children were able to help him focus on lessons, and that while they had a positive relationship with him these peers were not his friends, having been introduced to their role by the ‘circle of friends’ intervention. Sabbir conceded that some of his friends were a distraction from work but also felt that he had some sensible friends. There
seemed to be different understandings of when a positive peer relationship becomes a friendship, but overall Sabbir and his mother viewed peer relationships as important for his learning and the teachers were more dubious.

4.2.1.ix - Teacher relationships

During the last visit it became apparent that the fractious relationship Sabbir had with his Year 6 teacher had taken a toll on her. I was interested in whether there were any characteristics of the teacher that had made the relationship difficult. His mother said that he wasn’t happy when teachers raised their voice at him, which supports the sensitivity to teacher mood that he had revealed. The Year 6 teacher when observed had fluctuated in tone and volume when dealing with Sabbir’s class. This did not seem a controlled strategy - the class was difficult during that lesson and there were times when she seemed exasperated, particularly with an uncooperative Sabbir. Sabbir’s mother felt that although the teacher was doing her job, the way she was doing it was unpopular with a few children:

she’s a teacher... she can’t let them obviously get away with whatever they want to do... but it’s not just Sabbir, other children have obviously made remarks with regards to the teacher.
(Sabbir’s mother, visit 5)

In contrast, when describing teachers that he had positive relationships with, Sabbir used the words ‘fair’ and ‘understanding’ (visit 5) and his mother said ’a calm sense and not raising voice’ and ‘she doesn’t put him down’ (visit 5). The breakdown in the relationship between Sabbir and his teacher seemed from the observation and the teacher’s comments to have become self-perpetuating in that his behaviour got the exact emotional reaction from her that he claimed not to like, and as his mother said this lack
of calmness caused him to ‘retaliate by winding her up even more’ (visit 5). The teacher felt that this dynamic had been the same when she taught him in Year 4. She described his daily challenging behaviour that year:

> it felt like he was continually doing things to push me away so he’d constantly try and almost make me hate him by doing as many different you know annoying things or difficult things

…

> I kind of thought right okay you know lets put it behind us now and each day let him know that he was still accepted, still cared for and that felt like it had paid off by the end of the was it the first term or second term of this year

(Sabbir's Y6 teacher)

When this pattern resurfaced after the teacher thought she had finally made a breakthrough, it was difficult for her to take:

> I can get quite emotional about it … it’s hard not to take it personally when he's ended up making it very personal in the last few months with so much behaviour directed very directly at me

…

> I’ve got feelings of failure. I get frustrated. Frustrated with him, frustrated with myself for not being able to make it work…and from the point of view of the class because he’s once he sets them off they’re very hard to stop giggling

(Sabbir's Y6 teacher)

As the teacher shared these feelings, the observation and the comments from Sabbir and his mother were put into a different perspective in that neither they nor I had been aware of how low the teacher had felt as a result of the broken relationship with Sabbir despite sustained efforts, even contemplating ‘leaving teaching’.
Of the four case studies, this was the sole instance yielding rich information about a teacher relationship breaking down, and through its impact on teacher stress it seemed this was not just to the detriment not just of Sabbir’s learning but the learning of his class. It would be overstating the case to suggest that the relationship was the only issue in this scenario, but there was a striking contrast between these interviews and those conducted the previous year when his relationship with the Year 5 class teacher was apparently not an issue. Sabbir had referred to her as ‘in the middle’ although at that point his only favoured teacher was his 1:1 support. The Year 5 teacher seemed to have a style that suited him:

we were doing a spelling activity and he just blew up and got angry for no reason and I talked to him calmly and he explained that it was because it was too hard  
(Sabbir’s Year 5 teacher)

This teacher listed several ways in which teacher relationships could make a difference to how much pupils could benefit from her lessons, which were corroborated by comments from other participants. Firstly, she said that creating a situation where pupils were not afraid to ask her for help required:

T: a trust environment where they feel that they can come up to me. It is probably a relationship as well, that they are not scared to come up and talk to me without me sending them away.

She added that pupils took more risks, for example in giving answers in front of the class, when they weren’t afraid of her giving negative feedback. Other participants supported this. Sabbir felt more able to ask for help from teachers who were ‘friendly’ (visit 3) and his mother told me that
P: when you feel bonded to someone you can actually relate to them 
and obviously you like to speak to them

Sabbir’s Year 5 teacher commented that she felt more engaged with the class and effective in delivering a lesson when her relationships with pupils were positive, that she would ‘put a lot into’ lessons, and pupils would pick up ideas quicker as the way pupil and teacher respond to each other would improve with a positive relationship. The Year 6 teacher added that Sabbir had been engaging with lessons more during the positive phase of their time together, and distracting or absenting himself less.

The Year 5 teacher seemed to be able to use her social awareness and relationships to make useful, sensitive interventions. She was aware for example that he liked to be independent and did not like to lose face in front of his peers, and so when he worked on his writing, he did so without help initially and the help was eventually delivered away from the group. Given that he said this was his least favourite activity and that he made good progress during that year, triangulation shows this strategy to have been particularly good.

4.2.1.x - Teacher relationships summary

Sabbir’s volatility in class was not only a product of poor teacher relationships, as it could also be a response to difficult tasks, but it was a characteristic that made it harder for positive teacher relationships to develop. It seems that these relationships had a strong bearing on his ability to access the lesson for better or worse. Where they were negative, he would often disengage from the lesson and become drawn into a destructive cycle of winding up the teacher and then reacting to her anger and frustration, which distracted the class and nearly led to a teacher leaving her job. Where teacher relationships were positive, teachers and his
mother reported that Sabbir was more engaged and could occasionally receive help despite preferring to be independent. A calm response to his volatility seemed crucial in building an understanding with Sabbir, but once this was established teachers were more able to give him appropriate and successful academic support.

4.2.2 - Case study 2: Marcus

<table>
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<th>Measure</th>
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<th>Year 7 / BESD mean</th>
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Marcus began the project in Year 7 and was at ‘School Action’ for BESD. Relationship change statistics are not available for Marcus, although at the baseline he scored just below average for a pupil with BESD in Year 7 on both scales. He was very slightly above average in his baseline attainment. The most obvious departure from mean trends for Marcus is the worrying drop in attainment during the study, as he apparently regressed at the same rate as most of his group were progressing. Marcus is the only case study pupil to decline in attainment. His maths score in fact fell at each interval, from 21 to 17 to 13, whereas the English score remained at 27.

4.2.2.i - Academic context

There is some suggestion that the attainment attributed to Marcus by his primary school was inflated, which may be partly responsible for the decline. His grandmother said that Marcus’ primary school had prepared
him 'parrot fashion' (visit 2) using intensive TA support where needed. This resulted in SAT scores which were ‘too high for him’ and ‘misled’ his current school. Marcus also attributed the drop in his academic levels to the way it was measured rather than knowing any less than before.

Marcus’ grandmother told me in all three of our interviews that he had problems processing verbal information such as instructions, which needed to be given to him slowly. The exact nature of what was holding Marcus back academically was hard to identify. For example there appeared to be some confusion and dispute about the nature of his primary need, with his grandmother stating that sight, attentional and affective problems arising from his premature birth were the key issues and school staff intimating outside interviews that these difficulties were exaggerated by Marcus to gain attention. In the final interview Marcus’ grandmother told me that:

\[ \text{It was decided by the psychologist that he was putting it on a bit to get a TA. But you see he really comes across like that but he is not actually, if you push too much at him he just shuts right down.} \]

\[(\text{Marcus’ grandmother, visit 5})\]

At no stage was he classified by the school as visually impaired rather than as having BESD, although teachers began to make resources for him in larger fonts.

4.2.2.ii - Emotional context

Whether or not he was exaggerating his sight problems, both Marcus and his teacher were in agreement that he struggled to regulate his emotions in the classroom and was quite demanding of teachers as a result:
if there's something that stops him getting started or he finishes early then he can become um disrupted because he then wanders round or demands attention
...
he will also likewise get very frustrated and angry if some he perceives somebody is distracting him or taking his resources or taking attention that he needs
(Marcus’ teacher)

Marcus’ grandmother also said that he often presented a confident ‘front’ (visit 2), which may be borne out by his claim in our interview that he liked working independently, despite strong indication from his teachers that he was often heavily reliant on support:

I was getting a lot better on my own
...
P: I never ask for help.
I: You never ask for help?
P: No.
I: Even when you need help?
P: I do ask occasionally when I need help but not as much.
(Marcus)

4.2.2.iii - Family context

Having been born prematurely, which his grandmother blamed for his emotional problems, Marcus was brought up by his grandmother. She was a willing talker, and came in to school for interview on more occasions than any other case study participant. She also appeared to be committed to improving his behaviour, emotional regulation and reading as she told me
that they had been working on these issues at home since he was young. Her level of commitment to his education is witnessed in this passage:

_"I was so overwhelmed I burst into tears. I could not believe the amount of help Marcus will be getting."

(Marcus’ grandmother, visit 2)

Although I did not find out what happened to his parents, it seemed that Marcus’ family context was a positive factor. Unlike Sabbir, there was no suggestion that his behavioural problems were connected to a lack of relationship and therefore the socio-emotional context in which classroom relationships were operating for Marcus was arguably quite different. Where both boys were sensitive to classroom relationships, Sabbir was testing of them and ambivalent towards teacher assistance, whereas Marcus did not appear to push teachers away and perhaps had come to expect an intensive level of adult support.

4.2.2.iv - School context

Marcus joined his new school in the term before the project started and did not settle well according to his grandmother. As discussed, his behaviour in lessons deteriorated if he did not grasp the task or was unoccupied at the end of a task, which according to Marcus had resulted in ‘quite a few’ internal suspensions, meaning working for one day a week in isolation with his ‘house leader’. In Year 7 Marcus received some 1:1 support in English and Mathematics, but this did not continue despite the fact that he was still struggling both according to his scores and his own admission.

Marcus’ grandmother was impressed with the school as they acted on her concerns about his vision and arranged for him to see specialists, even if ultimately this resulted in further ambiguity about the nature of his problems.
Other than moving him to the front of the classroom and making sure his learning resources were printed in large fonts, the main response of the school to Marcus’ difficulties was to move him to the low ability class within his year group:

*dropping a group um has worked for him in in that respect that he finds the work now well within his abilities so he’s building his confidence.*

*(Marcus’ teacher)*

4.2.2.v - Social context

Marcus’ grandmother and teacher both felt that he was a popular pupil within his class group. His grandmother added that he had contact with classmates outside of school:

*Marcus is not tied into one friend. He will go with anyone if they are skating or biking, he will talk to anyone.*

*(Marcus' grandmother, visit 3)*

This indiscriminate approach to peers was a contributor to Marcus’ behavioural issues according to his grandmother, but although his teacher admitted that he was in a ‘live wire’ group that enjoyed being boisterous together she did not think this was related to his problems, which were still present at the end of the project:

*it was mainly that he can be very distracting, easily distracted and confrontational*

*(Marcus’ teacher)*
Based on the teacher’s comment about his frustration with her when he was not getting attention or with peers if he thought they were getting attention when he wanted it, it seemed that this confrontation could be with teachers and other pupils. From these comments, there did not appear to be a deep social problem with Marcus as these seemed to be isolated instances that were determined by the classroom situation.

4.2.2.vii - Context summary

Marcus’ apparent decline in attainment during the project was against a backdrop of confusion regarding how much he really understood of what he appeared to know at primary school, and what the issues underlying his needy and confrontational behaviour in class actually were. The school seemed to conclude that he should be pushed to be more independent despite his sight problems, but this was a challenge given his inability to control anxiety and frustration. Furthermore, according to his grandmother he remained unable to follow more than one instruction at a time. Although his grandmother was supportive and he was popular with peers, Marcus had academic and behavioural difficulties throughout the study.

4.2.2.vii - Peer relationships

Discussion of peer relationships in the case of Marcus revolved around the concept of friendship. This may reflect the fact that Marcus was the most popular of the case study children, but it also seemed to make a difference to how Marcus, his teacher and grandmother understood peer relationships and their role in the classroom. Although friends helped his motivation and confidence, they and other pupils in general presented problems for his learning process.
A common view was that Marcus could be quite easily distracted from work by his friends:

*It can be a problem because they all know each other so they do distract each other.*

(Marcus' grandmother, visit 3)

*I: So what difference does it make to being in a class where you've got quite a few mates ...?*  
*P: Its like hard to concentrate.*

(Marcus)

However, although his grandmother thought he did misbehave to fit in with some of his badly behaved friends, it was not simply that his boisterous friendship group that disrupted Marcus' learning:

*I: So do you think you learn better when you're in classes where you've got fewer mates around you?*  
*P: Yeah or fewer people.*  
*I: Fewer people in general?*  
*P: Yeah.*

(Marcus)

*he doesn't like people encroaching on his space and so even though he thinks he wants to work with people he finds it quite difficult to do that at times.*

(Marcus' teacher)

Several reasons were given for Marcus’ need for space from others whilst working. His teacher felt that he was similar to other low-achieving pupils of
his age, particularly boys, in that he was not emotionally mature enough for friendship not to distract him:

*but further down it tends to be because they’re still working through some of the basics of their relationships with their friends.*

*(Marcus’ teacher)*

Less emotionally mature pupils often prioritised these processes over ‘listening to instructions’, Marcus’ teacher continued. This was the only point in which she touched on difficulty with instructions and it appeared that she was not aware of the processing difficulties that his grandmother disclosed. Contradicting his teacher, Marcus mentioned that he did not like working in pairs or groups:

*I: Right what don’t you like about it?*

*P: Um say if you were trying to say something um and they might not listen something like that.*

*I: Okay so its hard harder to kind of get your point across?*

*P: Yeah communicate with them sort of.*

*(Marcus)*

His grandmother also felt that communication was a key barrier to Marcus working with peers, although she thought that his communication difficulties were more receptive than expressive. This was apparently a result of his attentional problems.

A view common to all participants was that Marcus was not confident enough to get the most out of working with others. His teacher told me that whilst the staff where building that up, group work was ‘actually not a helpful thing’, while at several points his grandmother suggested that he could misbehave or not engage with the lesson if he didn’t think he understood it because ‘he doesn’t want to look thick in front of his peer
group’ (visit 2). Marcus, who admitted that he didn’t want classmates to know when he didn’t understand part of a lesson and so wouldn’t ask them for help, supported these sentiments.

Having established these points, having friends appeared vital to the small amount of confidence Marcus did have. His grandmother felt that they were an important source of security ‘because he is very frightened of making a big fool of himself’ (visit 5). She added that if he had no friends in the classroom the situation would feel ‘threatening’ to him. Marcus told me that seeing his friends helped him come in to school on days when he was reluctant and that his problems communicating during group tasks were reduced if they were in his group.

4.2.2.viii - Peer relationships summary

Marcus’ relationships with other pupils appeared to be strongly influenced by the emotional and cognitive factors that held him back academically: anxiety, insecurity and difficulties maintaining attention or processing verbal information. In the main, the participants seemed to imply that peer relationships combined with these factors could to hold him back further. Nevertheless, his teacher felt that this reflected his developmental stage. Marcus and his grandmother added that his generally positive peer relationships gave affective support to his learning through reducing anxiety and increasing motivation to attend school.
4.2.2.ix - Teacher relationships

All three participants appeared to think that teacher relationships were important for learning:

I: Do you think it is important for Marcus' academic progress that the teachers build a positive relationship with him?
P: Oh god yeah. You don't get anywhere unless the teacher is behind you.
(Marcus' grandmother, visit 3)

I: Do you think pupils' relationships with you influences how they learn?
P: Oh definitely oh definitely
(Marcus' teacher)

I: Could you describe what makes some of these teachers better?
P: Doing active stuff in the lesson, going somewhere with it cause most teachers if you say you don't understand it just kind of keep going.
I: Right okay so they don't really pay attention to whether you're following?
P: No.
(Marcus)

Although Marcus' point could be interpreted as being more about teaching style than relationships, he went on to say that teachers who were most helpful academically were friendly, fun and had a sense of humour and it was also clear that the way in which a teacher related to him made a big difference to his mood. His teacher described some of the steps that she took to build relationships with pupils, with friendliness and attentiveness
featuring again. She stressed that ‘seeking popularity’ would undermine her
teaching, but that it was important to attend to all the class members within
a couple of lessons and to smile or talk to them around the school. Marcus
was also in agreement with his teacher that some strictness was a good
thing.

Marcus’ grandmother and teacher suggested that Marcus was a pupil who
particularly responded to positive relationships with teachers because of his
need for encouragement and praise to help his confidence and focus.

_He needs encouragement to focus when he focuses he really does
work well_

_(Marcus’ teacher)_

_I: What difference do you think it makes for that positive relationship
to be there?_

_P: Well Marcus will work harder and he will try. He will try because he
does like praise, but he also likes to think people see him as he is._

_(Marcus’ grandmother, visit 3)_

The latter quote demonstrates another facet of positive teacher pupil
relationships, which is their association with a pupil’s sense of being
understood or known. Marcus certainly became frustrated when teachers
were unaware of his barriers to learning. His teacher told me about an
incident where a supply teacher did not give him the correct resources and
he ‘got very unhappy very quickly’, and his grandmother mentioned that at
one point he was insistent on going to a school with 1:1 teaching. It
seemed that Marcus’ SEN meant that attentive and supportive teacher
relationships were of particular importance:

_I: what do you try and do to help Marcus?_
P: Mostly he just needs your calm attention he just needs you to support him in what he's doing...

... you have to be quite tactful about finding a way to develop his work... without him feeling that he's almost been punished by being given something else, it's like I've done it why do I have to do, they haven't finished why aren't you going on at them? Sort of thing so you have to be tactful and work on it carefully.

(Marcus' teacher)

I: what does she do when she picks on you?

P: If I've got my hand up she'll just point to me see if I know the answer but if I don't put my hand up I don't know the answer.

(Marcus)

Where teachers paid Marcus attention in a way that was not mindful of his anxiety and low confidence, his confrontational behaviour was more likely to emerge and cause further problems. His teacher’s awareness of the need for tact arguably indicates that she built up a relationship with him that enables her to intervene effectively.

Marcus’ grandmother expressed limitations to the importance of teacher relationships for learning. When I asked her if he would benefit from teachers spending more time with him or from changing their style, on both occasions she answered that the characteristics of his class were more important. She felt that many children in the group needed more attention than Marcus and were ‘destructive’ (visit 3). She also felt that teacher relationships were less important than whether or not Marcus was on report, which motivated him in every lesson regardless of the teacher.
The way in which Marcus’ teachers related to him appeared to have a significant impact. Marcus needed teachers to be positive and encouraging to help him manage his emotional state and boost his academic confidence and he needed them to be not simply attentive but attentive in a way that catered for those issues and his cognitive difficulties. All parties felt that where this was achieved, Marcus was capable of making substantial academic progress. However, when teacher attention was absent or inappropriate it seemed to be a trigger for his behavioural problems. Despite this, his grandmother also pointed out circumstances where she felt that class group characteristics and school interventions were more significant than these relationships for Marcus’ progress. Marcus’ education was a particularly complex situation involving a dynamic and varied set of factors, but it is argued that the most consistently influential factors were Marcus’ emotional and cognitive issues, both of which raised the importance of teacher relationships.
4.2.3 - Case study 3: Katie

Table 18: Selected quantitative data regarding Katie

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<th>Measure</th>
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</tr>
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</tr>
<tr>
<td>APS change</td>
<td>5.00</td>
<td>5.89</td>
</tr>
</tbody>
</table>

Katie started the project in Year 5, at which point her development was severely delayed relative to typically developing peers in her year group. She had a statement of SEN from the age of four and has speech and language problems as well as autism. Katie’s mother described some of her autistic traits as getting into ‘a flap’ when things were not ‘done a certain way’ (visit 2) and asking the same questions repeatedly rather than ‘learning new things’ (visit 3). A further problem with cyclical vomiting meant that Katie was regularly away from school for a week every six weeks until new medication reduced the vomiting in Year 5. Katie’s mother was happy to be involved with the thesis although she did not feel it would be appropriate to interview Katie due to her communication difficulties and unease with new people. Once again, the final teacher survey was not completed. At baseline, her classroom relationship scores were both above the mean level for pupils with ASD in her year group. Interviews were conducted with Katie’s individual needs assistant, her class teacher in Year 6, and on three occasions with her mother.

4.2.3.i - Academic context

As the table above confirms, all participants told me that she was well behind the typical academic level of pupils with ASD in the sample. Katie remained with her class of same age-peers throughout her time at the
school, but had English and Maths lessons with year 2 children and went out to an ASD specialist school for two mornings per week. Her statement required her ‘individual needs assistant’ (INA) to be in every lesson and this assistant remained with her when she was at the other school. Over the project she progressed at a similar rate to other pupils with ASD in her year group.

All participants agreed that Katie benefitted from having lessons with the younger pupils where the work is ‘tailored to her abilities’ (Katie’s INA) and that she was making ‘steady progress’ (Katie’s mother visit 5). Katie’s mother worked with the school to make sure that Katie got a full-time place at a specialist secondary school at the end of the project as both her and the INA agreed she was happier when at school with peers that were similar to her.

4.2.3.ii - Emotional context

At one point Katie’s INA mentioned that as her regular class moved up the school Katie was becoming increasingly anxious during lessons as more work was ‘totally over her head’. This anxiety was not touched upon by the Katie’s mother or the Year 6 teacher.

4.2.3.iii - Family context

Katie’s mother was very positive about the school and clearly very willing to support her daughter’s learning at home:

I have taken responsibility for helping Katie going from A, B,C to saying them properly. It has been something that has worked quite
well, you know actually having a task for me to do
(Katie’s mother, visit 3)

School staff were particularly complementary about Katie’s mother and it seemed clear that, similarly to Marcus, Katie’s family was a positive factor in her learning.

4.2.3.iv - School context

Aside from the INA support and spending time in year 2 classes, the school put a range of strategies into place to support Katie. For example, a computer programme where words typed in were matched to symbols was used to help her communicate, with her taking laminated versions of the symbols that she knew into lessons to use with the teacher if she didn’t want to speak or have eye contact. Her mother was consistently ‘impressed’ (visit 2) with the school’s efforts:

They’ve been ready each stage for whatever she needs to learn next and umm, you know I’ve got complete confidence in that
(Katie’s mother, visit 5)

4.2.3.v - Social context

As discussed above, one of the principal reasons Katie’s mother gave in favour of specialist secondary school was her inability to socialise with typically developing children as she and they got older. Katie’s mother felt that this was about not having things in common with other children of her age, as she was ‘still very much liking Peppa pig and more childish things’ (visit 2). Katie’s INA told me of several other ‘manners’ that put other
children off socialising with Katie, such as not controlling the volume of her voice and ‘blundering her way through corridors’. Her teacher added that she could ‘get a bit rough in the playground’ which would ‘annoy other children’.

Katie’s mother felt that her only friend in school was another autistic child in her class who had a similar learning delay and also spent time with the year 2 children. They played together and copied each other. Katie’s mother wanted her to attend a mainstream primary school so that she could copy appropriate behaviour and it was clearly a concern that she was not doing this when around her friend, although the comments above demonstrate that she was not copying typical social behaviours enough to participate.

All participants praised the generally kind and understanding attitude of her peers, and a distinction emerged between pupils being friends or playing and pupils being respectful or supportive of one another. The latter was available to Katie even if the former was not. Katie’s mother had no concerns about bullying.

Despite this Katie gravitated towards adults and needed their company during breaktime, as she would otherwise ‘just be standing there on her own’ (Katie’s INA). Katie preferred adults but as discussed later, it took a long time for her relationships with teachers to develop enough for her to approach them for help. This was exacerbated by the constant presence of her INA:

*I am there working with Katie so much and she has to come out of class, so I think it is really difficult for teachers to build those relationships*  
(Katie’s INA)
Katie’s reliance on the INA was a concern for her mother throughout the project, and by the end of 5 preparing Katie to be without her and ‘able to manage herself’ (Katie’s mother, visit 5) was a key priority in school and parent strategies. As far as encouraging her to work and bond with other staff was concerned, this was of limited success. By the end of Year 6 her class teacher still felt that she had little involvement and was unable to describe Katie’s barriers to learning.

4.2.3.vi - Context summary

Katie’s particular combination of educational needs had quite a severe impact on her academic and social functioning. However, Katie did make steady academic progress and the interviewees were largely upbeat on all the visits, albeit with reduced expectations. School decisions to support Katie appeared to be successful, such as her participation with year 2 lessons. A two-tone impression of Katie’s social context emerged in that despite being isolated in some ways, having only one friend and preferring to interact only with her INA, she was also well supported by an understanding peer group and a resourceful set of school staff.

4.2.3.vii - Peer relationships

When asked direct questions about whether relationships with peers were important for Katie’s learning, both her mother and her INA referred to peers at the specialist school that she attended twice a week. The INA felt that Katie’s speech and language development had benefitted from being able to have conversations with peers, which was very difficult in the mainstream school while her mother said that feeling part of a group was ‘vital’ (visit 3) for her learning process. In light of this, it is interesting that most of the
factors emerging more inductively connecting peer relationships and academic progress related to peers at the mainstream school.

Firstly, Katie’s friend (who also had autism) at the mainstream school was a boost to her confidence and level of comfort when among typically developing peers of her age. This is broadly the same point as above - contact with peers that have a similar developmental status enables Katie to feel more included and to express herself. However, several academic benefits also arose from the positive relationships that Katie had with her sympathetic peer group, many of which had known her since the group came together in year 1.

All parties agreed that friendly and familiar classmates could encourage Katie to do academic work. They often listened to her reading and were keen to praise her, for example when she was finally able to join in with the class paper mache activity. The Year 6 teacher told me that ‘they do like to be seen to support her’ and the INA added that following peer praise Katie ‘then feels that she has achieved something’. Class members also modelled activities to Katie when she was struggling to follow instructions:

*There are some children in the class particularly that are very keen to work with her and she does respond to that because she is a great copier. So if you were doing something in PE ... if one child leads then Katie will follow.*
(Katie’s INA)

*They were Katie come on we need to go this way now, Katie you need to do this, Katie you need to do that and really guiding her and it was really lovely to see*
(Katie’s mother, visit 5)
Particularly encouraging was that Katie was appropriately initiating reading support, asking friendly peers during lunch if she could read to them. Given her communication difficulties and mounting anxiety this seemed to be a positive outcome in itself. My impression of the benefits that Katie derived from her ‘particularly nice class’ (Year 6 teacher) was reinforced when her Year 6 teacher said that this would all have been quite unlikely had she been in the year below, who were a ‘totally different kettle of fish’.

While the positive relational environment of the class was something that Katie responded to, it was not enough to cancel out her growing sense of difference from the group. Katie’s INA revealed that she was more self-conscious when in the Year 6 class and less willing to give answers. This was a level of awareness and reticence in class that Katie’s mother didn’t seem to be aware of, as she had said during the same visit as the INA interview that Katie ‘was not one for holding back’.

4.2.3.viii - Peer relationships summary

Although her age group peers in the mainstream school were helpful, this clearly could neither bridge the widening developmental gap between Katie and her year group nor reduce the uncomfortable feelings that this generated for her. It was apparent that her happiness at school and possibly her academic progress would have been reduced if the social atmosphere in the group had been less supportive and accepting. When Katie was in the company of more similar peers she was able to communicate more and fully engage with the lesson. One of the main reasons her mother gave for the move was that her peer relationships would be stronger and more like friendships, which was ‘vital’ for her learning.

Therefore it seemed clear overall that the participants did view peer relationships as important for learning, even in a case where other
restrictions on learning were severe and the potential for peer interaction was curtailed.

4.2.3.ix - Teacher relationships

The excerpts coded here unsurprisingly tend to refer to Katie’s relationship with her INA, which her mother said was ‘absolutely fundamental to everything she’s achieved’ (visit 5). As discussed above, the disadvantage of this seemed to be that class teachers were quite unfamiliar with Katie. Her Year 6 teacher didn’t feel able to describe her barriers to learning and admitted being ‘daunted’ by her communication problems. While this meant that Katie missed out on specialist academic knowledge, the approach was generally viewed as a good solution. This was not simply because Katie ‘needs the adult direction to be engaging in things and learning’ (Katie’s mother, visit 3) but because the trust and understanding that she established with the INA gave her ‘the confidence to cope in class’ (Katie’s INA). For Katie’s mother, the INA became:

- the gateway between the pupil and the teacher and the other children in the class you know, they sort of facilitate the whole relationships that Katie’s built with umm, with everyone

(Katie’s mother, visit 5)

Although the constant presence of the INA seemed to monopolise Katie’s interactions and block teachers or peers out, when compared to how the lesson might develop without the INA, the relationship actually made her more open to other involvement. This was because of the calming affective difference it made to her, and also because it reduced her level of disruptive behaviour. According to her teacher, it took other members of staff a long time to know Katie well enough to stop her being ‘vociferous’ and ‘running rings around them’. This agrees with her mother’s view that Katie would not be interested in learning ‘if she was left to her own devices’ (visit 3).
Katie’s level of engagement with the lesson seemed to have strong underlying consideration of relationships. The INA told me that until she had a relationship with a teacher she would not respond to them verbally other than during the register, and could not be encouraged to approach them for help on a task. Only when she knew the teacher well enough would she have the confidence to do these things. This understanding of Katie’s classroom functioning put the teacher’s behavioural concerns into a different perspective in that it was not simply Katie’s will to disobey or not engage when the INA was absent but that her presence had been enabling Katie to do things which felt more difficult to her than they probably seemed to others, such responding to a question or asking for help.

It appeared that the extent of Katie’s particular educational needs meant that teacher relationships were more significant than they might have been otherwise. Again, this was because Katie needed staff to relate to her in a way that was sensitive to her emotional and cognitive challenges relative to other children:

I think that because her teacher knows her so well, the same as at home, we kind of do things the way they need to be done so that we don’t aggravate things but if things don’t go according to plan that could set her off for the whole day and she would be upset and tearful and just not concentrating.

(Katie’s mother, visit 2)

This level of understanding enabled the INA to develop and implement successful strategies for some of Katie’s most challenging problems such as her physical speech difficulties and her continuing reluctance to respond to relatively unknown teachers.
4.2.3.x - Teacher relationships summary

It seems that although her autism and speech difficulties made forming and maintaining relationships with teachers hard and slow for Katie, they also made those processes more important. There was a resounding across interviews that her relationships with teachers were of fundamental importance to all aspects of her life at school, and that without at least one member of staff that understood her particular mixture of traits and difficulties her steady academic progress would have been impossible. Unfortunately the relationship that facilitated much of Katie’s academic development and improved her functioning also monopolised interactions with Katie and left her heavily reliant on one person. However given the scale of Katie’s challenges and the improvements that having the INA seemed to make, including with other classroom relationships, the participants felt that this had been a price worth paying.
4.2.4 - Case study 4: Joanna

Table 19: Selected quantitative data regarding Joanna

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<td>Baseline PPR</td>
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<td>1.48</td>
</tr>
<tr>
<td>PPR change</td>
<td>-0.83</td>
<td>0.16</td>
</tr>
<tr>
<td>Baseline APS</td>
<td>19.50</td>
<td>20.89</td>
</tr>
<tr>
<td>APS change</td>
<td>2.50</td>
<td>5.71</td>
</tr>
</tbody>
</table>

Although she also had a statement for autism, Joanna’s academic and social difficulties were not as severe as Katie’s. She was in the lower ability class within the year group, but attended a mainstream school without extensive individual support. Her academic attainment was broadly in line with other Year 7 children with ASD within the phase 1 sample. Joanna was happy to be interviewed and seemed comfortable during our conversation. Although she began the project with a relatively high score for teacher relationships, there apparently was a decline in both forms of classroom relationships and slightly substandard academic progress and final score relative to the Year 7 ASD group in the sample. Looking at subject scores, Joanna made gradual progress in English from 18 to 19 to 21 and faltering progress in Mathematics from 21 to 19 to 23. She is the only case study pupil for whom all the quantitative data was submitted, and therefore presents the best opportunity to compare the two sets of findings.

4.2.4.i - Academic context

Joanna came across as a determined pupil. She told me that in Mathematics, which was the subject she was finding hardest, she would
offer answers in class. She claimed that she would try her ‘best to get it’ and would participate in the lesson even though she was ‘really confused with some subjects’. According to her mother, Joanna struggled with vocabulary when reading or writing, with understanding abstract concepts in Mathematics and with retaining information in non-practical subjects. Although by the end of the first year she added that the school had been effective in helping Joanna with vocabulary, her class teacher seemed to feel that the other issues were still a problem at the end of the project:

We can do percentages, and she can do pretty well on it, but because you don’t have a test at the end of the topic, it comes 4 weeks later at the end of a whole series of topics, she then can’t recall that...

She doesn’t always see the links between 6 over 6 is equal to 1. You’d have to slow down and have a picture or a diagram, or a game, or something.

(Joanna’s teacher)

4.2.4.ii - Emotional context

Although Joanna was coping well, her mother emphasised affective challenges that she faced when coming to school, particularly when she was new. Joanna had been ‘quite scared’ about new teachers, while expectations about her development into a teenager caused ‘stress’ as ‘she still likes to play with children’s things but she knows she can’t because she’s growing up’ (visit 2). This stress was evident to her mother in the anxious double-checking of her schoolbag contents on the way to school.

Joanna’s mother and teacher agreed that she was a pupil who worried more than others, for example after the whole class got a detention for talking
early on in her time at the school. Her teacher added that the worrying if unacknowledged could prevent her from working:

If she hasn’t done her homework for the next lesson she might be worrying all your lesson about that. So you really need to sort out the issue to then be able to get a focus on the task.

(Joanna’s teacher)

4.2.4.iii - Family context

Joanna’s teacher mentioned at several points how much support and effort Joanna’s mother offered. Joanna’s mother communicated well with the school and backed them in all their strategies for her provision. The family were also praised for being ‘grounded’ and ‘realistic’ in their expectations. The family was seen to be a crucial factor in Joanna’s settling within a mainstream environment, which had been more successful than other pupils with ASD that the teacher had worked with. Given that Joanna’s teacher was also long established as the school SEN co-ordinator (SENCO) and liaised with over 50 parents at any one time, this endorsement of Joanna’s family carried particular weight.

4.2.4.iv - School context

Joanna’s teacher felt that the school was ‘quite a supportive atmosphere’ for pupils with SEN and that it had ‘really clamped down’ on pupils ‘being horrible to each other’. Joanna’s mother was happy with the school, and had attended several meetings with them regarding provision for Joanna. The teaching assistants were not individually allocated to Joanna as many children in the class had SEN, but she was one of the pupils who received
more of their attention. They helped her with specific aspects of the lesson content that she did not grasp, dealing with issues as they arose rather than working on formal interventions.

4.2.4.v - Social context

Despite Joanna being less impaired than Katie by her particular SEN, a common finding emerged regarding peers:

*She’s got good relations but no good friends*
*(Joanna’s mother, visit 2)*

One of the teaching assistants from Joanna’s class felt that she would never have any ‘proper friends that she could go out and about with’, but that despite this she had positive peer relations among her class group:

*they have got quite a nice class and because Joanna is a bit different they feel a bit protective I think now, they have sort of build up a bit of a bond*
*(Joanna’s second teaching assistant)*

This teaching assistant admitted that initially a ‘couple’ of her classmates tried teasing Joanna, but she protested vocally and ‘they were squashed really quickly’. The teasing made Joanna quite ‘upset’ and the teaching assistant felt that her learning would have been affected if it had continued. Interestingly, Joanna told me during the same visit that nobody had ever been mean to her at the school. Contradicting teaching assistants and her mother, Joanna told me at the end of Year 7 that she had friends in her class, which she understood to mean people who she knew liked her and who she trusted. Her comments did not indicate that she was indifferent
towards having friends or unaware of the concept. She also didn’t share her mother’s worries about how long it took her to establish friendships:

And my other friends are really nice to me and when I am with them they are very helpful and they are very nice to me when I just came to this school for the first time.

(Joanna)

According to Joanna’s teacher by the time of the final interviews Joanna had a good friend who also lived close by. They met outside school, got on the bus together and socialised at lunchtime with a wider group. She added that Joanna was ‘popular’ with teachers ‘because she’s a nice girl’ and that teachers told her so, but that she did not understand the concept of popularity.

4.2.4.vi - Context summary

Joanna seemed to be happy at the school despite her continuing academic difficulties. She struggled to follow abstract ideas and often needed teaching staff to explain things at a slower pace using illustrations and other techniques to simplify the lesson content. This was exacerbated by her poor memory, which often hampered performance in exams and tests. Her mother was happy that the school were doing a good job supporting Joanna and was also committed to doing what she could to help her at home. Joanna was popular with teachers and bonded with her classmates, who happened to be a protective group within a school that Joanna’s teacher felt had a tolerant atmosphere. The class and school environments resulted from firm staff boundaries around teasing. By the end of the data collection, she had formed a social group including one particular friend despite one teaching assistant fearing that this would be impossible. There seemed to be a general air of positivity around Joanna even if there was
also a call for realism from her teacher about how much she could achieve academically.

4.2.4.vii - Peer relationships

Joanna's mother did not think that the perceived lack of friendships in her class was relevant to her academic progress because she 'called the assistant' more often than she 'integrates' in the group' (visit 5). When the second teaching assistant was worrying about Joanna having no friends, she also felt that 'it doesn't seem to affect her learning', because Joanna was 'quite self-sufficient'. Joanna herself seemed determined to 'stop asking people for help'. She thought that she could learn more doing a task independently than she could working with others. While these accounts may seem to clash, my interpretation of the assistant's comment was that Joanna was not distressed by her relative isolation rather than that she functioned as an independent learner:

You know she doesn't seem unhappy, whereas perhaps a 'normal girl' it would get to her.

(Joanna's second teaching assistant)

Her teacher agreed that Joanna was unaware that other pupils had closer peer relationships than her because 'she's not got the level of maturity'. Joanna's mother added that she 'likes to be alone sometimes' and would reject some peer interactions. However, Joanna felt that she did have friends in her class who helped her to learn, even if she didn't know why:

I: Do you think having friends in your class or feeling happy about the people in your class makes it easier to learn?
P: I think so yes.
I: Why do you think that makes a difference?
P: I don’t know.
I: But you just feel that it helps?
P: Yes.

(Joanna)

Joanna also said that she didn't mind working with girls who weren't her friends, which was supported by comments from her mother. Overall it seemed that the level of bonding or socialising that the adults felt identified friends, largely mixing outside school, was not part of Joanna's definition and that she used the word to describe the peers which the teaching assistants felt were 'very nice' (Joanna's first teaching assistant) to her but not friends. However we understand the term it is unsurprising that looking across the comments as a whole suggests to the reader that it is the in-class peer interactions which are relevant to learning rather than what children do outside school hours. This was demonstrated by other comments regarding ways in which peer relations had helped Joanna.

Her first teaching assistant felt that when the social atmosphere of the group was less amicable than normal it disrupted Joanna’s concentration, because other pupils and the staff made more noise. Echoing an earlier quote from Joanna, her mother said that she was happy to participate in the lesson even when she found it difficult, and that she would give answers even when she was often incorrect. However, crucially she added that this was possible because 'the rest of the class is kind with her' whereas she would be 'scared to say' if she thought that the others might 'laugh at her' (visit 3). This perspective was backed up the second teaching assistant. Like Katie, Joanna seemed fortunate to be in her particular year group and not the one below, as the positive relational environment boosted her motivation to come in to school and participate:
8A are a really good group I think and they work so well, the lessons are always really…They come in and they just get on with it and they are really nice to each other

...  
TA: I think Joanna would be suffering in a different form group, if she had come a year later
I: And would that have an impact on her academic progress?
TA: Yeah, I should think so, it would do, I am sure. She probably wouldn’t be so keen to come, maybe.
I: OK and in terms of participating in lessons could it have an impact there as well?
TA: Yes, she probably wouldn’t say, whereas she is not afraid to put her hand up and give an opinion.
(Joanna’s second teaching assistant)

Echoing her mother’s point, both teaching assistants and the teacher felt that fear of embarrassment did put Joanna off giving answers and led to her doubting her knowledge, and that this factor was largely determined by how supportive peers among her group or class were:

If she’s in a group with people who consider themselves to be more grown up or superior to Joanna she’s definitely quieter and has to be more pushed to take part and contribute.
(Joanna’s teacher)

I: If you could think of one of the girls that you find easy to ask about work what is special about that person?
P: That they are nice to me, that they are sort of my friend and they really help.
(Joanna)
The children that Joanna describes above are also those she felt were more likely to help her more practically on a task, for example explaining things or exchanging information, which again was endorsed by comments from her mother and the teaching staff.

4.2.4.viii - Peer relationships summary

The two-tone theme that emerged with Katie was also evident for Joanna in that while adults felt that she struggled to make friends and was relatively socially unaware, they also felt that she thrived academically in a class where her peers were respectful and supportive. From Joanna’s perspective, kind and helpful classmates were ‘friends’ and she agreed with the adults that the positive interactions with these individuals aided her learning. This help came through several channels including willingness to participate in lessons, more faith in her understanding of the subjects, less noise and distraction coming from the social environment and improved motivation to attend. It seems that while friendships are clearly significant, a lower level of bonding with peers may be sufficient for them to aid learning because in a positive social environment children were supportive of others even when they weren’t friends.

It is important not to overstate the case, as despite these factors being in her favour for most of the project according to the teaching assistants Joanna made slow progress through the academic levels. While the effect of positive peers may be present, it is clearly not able to overturn the substantial cognitive deficit that Joanna appears to have relative to others of her age.
4.2.4.ix - Teacher relationships

Given the amount of support that Joanna received from school staff, it was not surprising that all of the adults interviewed offered reasons for teacher relationships being significant to learning. Again, one must remember that much of the academic benefit derived by Joanna from teachers is associated with direct, subject-related support and the educational content of their interactions is crucial in its own right. However, the relationships that underpinned the academic support seemed to have an impact on its effectiveness according to the staff members and Joanna's mother:

> when they have got new teachers or new teaching assistants they have to make that sort of relationship before they start

*(Joanna's first teaching assistant)*

Some of the ways in which relationships with teachers helped Joanna's learning were similar to those of peer relationships, such as improving her engagement with the lesson and confidence:

> I think there’s quite good relations and that’s given her more confidence this year. If she’s happy with her teacher and she’s confident to ask any question if she doesn’t understand. And I think yes that’s been important.

*(Joanna's mother, visit 5)*

> I was having a conversation with her the other day and she said I always don’t know anything, but I said you do, you have shown you do

*(Joanna's second teaching assistant)*

All the school staff told me that Joanna tended to assume that she didn’t know anything and required much reassurance. This was not necessarily
related to her autism, as there was another girl who did not have autism but required the same sort of emotional support. The first teaching assistant added that when Joanna was with a new staff member and the relationship was not established she could not draw the same affirmation from them and was 'held back' until a bond had formed. According to her mother, relationships were an important factor in Joanna feeling able to approach an adult for help:

*that was one of my main worries when she started secondary school, actually it has been quite very good relationships, better even than in primary, so if she has to ask something she will*

*(Joanna's mother, visit 3)*

The teaching assistants compared the positive social environment of Joanna's class group with less constructive dynamics in other classes that they worked in during the week and both felt that the form teacher was the key difference because he consistently focussed on social rules and building up 'team spirit' (second teaching assistant). Although this teacher had a reputation with staff for being 'loud' and 'fairly strict' (Joanna's teacher), the teaching assistants felt that the pupils liked him. They did not want to contravene the class ethos because 'they would have to talk to their tutor and they seem to have a good relationship with him and don't want to upset him' (Joanna's first teaching assistant). Therefore boundaries were seen to be made more effective by the teacher relationship.

Finally, some of the descriptions given by school staff regarding how they worked with Joanna revealed what could be done with the information gathered by sustained, positive teacher relationships. The application of the detailed understanding of her, built up by attentive working over time, led to effective interventions that were responsive to her particular affective or cognitive needs:
we tend to sit more at the back or the side. Or when I take her out, well I haven’t taken Joanna out because she seems to work quite well with that. And she does work where she can with the girl next to her who is quite supportive.

... This girl always seemed to pick Joanna, and she always really asked her a really difficult one, like twelve nines. That was really beyond Joanna... But I invited her to Hub Club as well so they could get used to each other. And it seems to have stopped.

(Joanna's teacher)

As with peer relationships, the importance of these bonds can be overstated. There were factors that reduced their impact. Both teaching assistants felt that despite their affirmation Joanna retained a very low level of confidence in her abilities. This may be expected, as she was aware of being one of the lowest achievers in her class. The second teaching assistant also felt that compared to other girls, Joanna would behave well for any teacher and did not need a positive relationship with them for that purpose, which was supported by comments from her mother.

4.2.4.x - Teacher relationships summary

Joanna appeared to be a girl who needed the reassurance of warm relationships with staff in order to function at her best during lessons. At times, all participants expressed that she needed to become more independent from staff. This was a major challenge for Joanna, as her relationships with teachers and frequent contact with them during lessons seemed to compensate for her low confidence, poor memory, difficulties with abstract ideas and high levels of anxiety. As staff got to know Joanna and understand her needs, they became more effective in supporting her learning. Although Joanna did make progress during the project and could
sometimes be persuaded that she was more capable than she thought, her
difficulties still held her back relative to other children in the class and there
was a clear limit to how much difference the positive teacher relationships
could make to achievement.

4.2.5 - Phase 2 summary

Having presented each case study in detail and provided evidence for the
inferences made from the interview material and researcher observations
during the school visits, table 20 overleaf illustrates key points in terms of
how classroom relationships influence education for each child and the
additional factors influencing the relationship-learning association. This is
not an exhaustive document, but is designed to give an overview of
common and unique findings across the case studies. Common findings
are italicised.
<table>
<thead>
<tr>
<th></th>
<th>Sabbir</th>
<th>Marcus</th>
<th>Katie</th>
<th>Joanna</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P</strong></td>
<td>+ Peer group enabled working together</td>
<td>+ Friends reduced problematic anxiety levels</td>
<td>+ Peer group reduced problematic anxiety levels</td>
<td>+ Peer group improved confidence through not teasing</td>
</tr>
<tr>
<td></td>
<td>+ Peer group helped him to regulate behaviour in classroom</td>
<td>+ Friends improved motivation to attend school</td>
<td>+ Peer group improved confidence through praise</td>
<td>+ Peer group enabled more participation</td>
</tr>
<tr>
<td></td>
<td>+ Friends improved motivation to attend school</td>
<td>+ Found friends easier to communicate with</td>
<td>+ P.G enabled more participation</td>
<td>+ Peer group increased motivation to attend school</td>
</tr>
<tr>
<td></td>
<td>+ Sabbir felt good PPR could compensate poor TPR</td>
<td>- Distracted by friends</td>
<td>+ Peer group encouraged reading and gave instructions</td>
<td>+ Peer group enabled working together</td>
</tr>
<tr>
<td></td>
<td>- Distracted by certain friends</td>
<td>- Struggled to communicate with other pupils about work</td>
<td>+ Friend improved comfort in classroom</td>
<td>+ A more fractious group would have been a major distraction</td>
</tr>
<tr>
<td></td>
<td>- Struggled with behavioural control in large peer group</td>
<td>- Liked to work 1:1 for undivided attention and concentration</td>
<td>- Developmental delay and speech problems were a barrier to sustained peer interactions</td>
<td>- Factors were positive but progress was limited</td>
</tr>
<tr>
<td><strong>T</strong></td>
<td>+ Better engagement with lesson</td>
<td>+ Encouragement from teachers reduced anxiety</td>
<td>+ Key TPR ‘vital’ to any progress</td>
<td>+ Improved confidence to approach staff for task help</td>
</tr>
<tr>
<td></td>
<td>+ Enabled Sabbir to accept help and correction of work</td>
<td>+ Praise from teachers improved low academic confidence</td>
<td>Katie made at school said mother</td>
<td>+ Slightly improved academic confidence through praise</td>
</tr>
<tr>
<td></td>
<td>+ Poor TPR triggered escalating confrontational behaviour in the classroom</td>
<td>+ Enabled teachers to support him sensitively / appropriately</td>
<td>Key TPR gave confidence to cope in class</td>
<td>+ Form teacher’s relationship with class group crucial to making it positive for Joanna</td>
</tr>
<tr>
<td></td>
<td>+ Poor TPR associated with him absenting himself during lesson</td>
<td>- Being on report and class group traits were more key to his focus said grandmother</td>
<td>Key TPR facilitated tentative relationships with others</td>
<td>+ Enabled teachers to support her sensitively / appropriately</td>
</tr>
<tr>
<td></td>
<td>+ Enabled teachers to support him sensitively / appropriately</td>
<td></td>
<td>+ Total reliance on key TPR</td>
<td>- Despite affirmation Joanna’s confidence remained low</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reduced academic input from more trained staff</td>
<td>- Would try hard for any teacher</td>
</tr>
</tbody>
</table>
4.3 - Conclusion to chapter

The results chapter gives the reader an understanding of the data that has been generated by the processes described in the methodology and an indication of the findings that will be considered in the discussion. Phase 1 results were largely negative in that of four potential illustrations of relationship change acting as a predictor of attainment, only one demonstrated a statistically significant link. Phase 2 results show that some form of relationship-learning association was felt by participants to be relevant in each case study and that the range of factors acting upon the association for each pupil was varied and complex as predicted. In the discussion chapter, the thesis will progress by analysing this data in the light of prior methodological and theoretical evidence.
5 - Discussion

This chapter addresses the research questions set out at the end of the literature review and also considers how these findings relate to prior research regarding ASD and BESD and the relationship-learning association that was discussed in the literature review. Finally the limitations of this study are summarised and the discussion is concluded with a presentation of the contribution this investigation has made to knowledge in terms its illuminative insights and its implications for method, theory, future research and practice.

5.1 - Responding to research questions

To answer whether or not classroom relationships can be considered important for learning, subquestions focussed on the capacity of relationship change to predict attainment, the factors influencing the role of classroom relationships, and finally the nature of any relationship-learning associations which emerge from case study data. The former subquestion draws on phase 1 data while the latter subquestions refer to phase 2 data.

5.1.1 - Does academic attainment vary as a function of changes in teacher relationships or peer relationships?

5.1.1.i - ASD

As the test of an association, the phase 1 results relating to children with ASD are a null result. While the group of predictors included as a whole was able to account for 89 per cent of variance in final attainment, this group consisted of one very strong predictor (baseline attainment) and
seven other predictors that had no statistically significant association with the dependent variable. This finding was not a complete surprise following the literature review, although it is not necessarily in line with predictions. These were that the association would be weak due to potentially low levels of cognitive ability (LoVullo & Matson, 2009) and relationship willingness (J. Scott, et al., 2000) or awareness (Bauminger & Kasari, 2000) among a sample of children with ASD and that teacher relationships would be more important than peer relationships due to the high demands that children with ASD may put on teachers in terms of consistently requiring additional effort and understanding.

While there may be predictable reasons for a weak association, it is surprising given some of the evidence about children with ASD that no significant association between classroom relationship change and academic attainment exists at all. For example, this is a group that is more likely to be rejected by and isolated from peers (Symes & Humphrey, 2010), which can frustrate teachers (Emam & Farrell, 2009) and which is disproportionately likely to be excluded from school for assaults on either (Department for Education, 2011d). It is also likely that children within this sample work more closely with staff than most other children (Hemmingsson, et al., 2003), which theoretically increases the potential for enhanced staff relationships to have an academic impact. Therefore it is worth tentatively considering factors that might have led to a potentially misleading null result.

Might the results be explained by weak relationship change values? If there was very little mean change in classroom relationships for the group, it would be less likely for it to register as a significant predictor. The descriptive statistics show that among this group, the mean change in both forms of classroom relationship was .16. This relates to the mean scores on scales with items that consist of four Likert style responses. The maximum change in either direction is 3, which would mean the teacher response to
all relevant items had shifted for example from strongly disagree to strongly agree. No pupils’ score moved more than 2 in either direction on either scale. The positive change of .16 for each measure represents a change of just over one quarter of a standard deviation in the baseline relationship scores.

Interpreting this amount of change is rendered difficult by two factors. Research in the field of classroom relationships often uses sociometric measures (e.g. Kochel, Miller, Updegraff, Ladd, & Kochenderfer-Ladd, 2012) or self-report (e.g. Mikami, et al., 2011), which are not directly comparable. Secondly, comparable quantitative research often does not measure change at all or refers to stability (e.g. Blacher, et al., 2009). Broadening the frame of reference to gain a sense of how much relationship change took place, a recent review of emotional literacy interventions (Durlak, et al., 2011) found that the average effect of an intervention was just under two-thirds of a standard deviation. This is between two and three times as much change as seen in classroom relationships for pupils with ASD. The comparison is limited because classroom relationships and emotional literacy are distinct phenomena, and the interventions evaluated in the review generally involved about an hour a week of explicit social and emotional literacy teaching. As a comparison of change, the contrast suggests that while the shift in classroom relationships within the sample may have been relatively modest, it was not so small that this alone can explain the null result.

Looking beneath change values levels of classroom relationship quality were surprisingly high at either end of the project for a group that is suggested to be at risk of poor classroom relationships. Mean scores were not below the midpoint of either relationship scale during the project, indicating that this sample of pupils with ASD generally had positive classroom relationships throughout. Mean values for peer relationships rose from 1.50 to 1.76, and teacher relationships from 1.76 to 2.04. The
latter value indicates that by the end of the project, mean levels of teacher relationships were so high that the average response to a positively worded item was ‘agree’.

Overall these levels do not reflect the suggestion in the literature review that pupils with ASD will struggle with classroom relationships. This may indicate an unusual sample. However this might also give cause to question the reliability of the Wider Outcomes Survey for Teachers (WOST). There are plausible reasons for this. Although teacher surveys were anonymised, the evaluation team provided schools with feedback on their scores at school level after each survey was collected. Some teachers may therefore have felt under pressure to respond positively to classroom relationship items, particularly if the school had chosen to focus interventions on that area. Given the surprisingly high scores even at the time of the first survey when most schools had not fully implemented the programme (Humphrey, et al., 2011) this divergence from the literature seems to suggest some unreliability in the results.

Two further methodological issues may have unduly influenced the result. It is not possible to determine the prevalence of intellectual disability among the sample. Although speculative, it is plausible that if the prevalence was atypically high this may have reduced the potential for academic improvement following relationship change. The sole, powerful predictor of final attainment among these children was baseline attainment, which suggests that the non-measured factors theoretically located within baseline attainment accounted for 89 per cent of variance in academic achievement. Given the comorbidity of ASD with cognitive difficulties, such difficulties are very likely to be among those factors (LoVullo & Matson, 2009). However, the null result cannot be explained away by such speculation. Instead, a recommendation for future research must be to take cognitive ability at baseline into account as a predictor and to report on the prevalence of intellectual disability in the sample.
Secondly, the relatively small number of teacher relationship items (2) compared to the number of peer relationship items (6) may have influenced the findings. It was predicted that because children with ASD are likely to work closely with staff and may have reduced awareness of peer relationships, teacher relationship change would be more strongly predictive of final attainment than peer relationship change. If the teacher measure did not refer to as many aspects of relationships, it may have been less sensitive than the peer measure at detecting change. This imbalance was a shortcoming of working within a pre-existing investigation. However, as discussed earlier the positive outcome from the confirmatory factor analysis suggested that two distinct phenomena were being measured by the original ‘classroom relationship’ scale and each measure once separated had sound psychometric properties as did the original. Although this factor could explain the failed prediction of teacher relationship being most important, the overall quality of the instruments appears to be acceptable. Again, a more comprehensive measure of teacher relationships would improve future enquiries into this area.

Another caveat to these findings is that the sample was significantly reduced by the analytical requirements and attrition in the dataset from 255 to 152, which reduces generalizability and may have skewed the results of the analysis. However this does not seem to explain the high classroom relationship values as while they appear more positive than one might expect, when compared to the other SEND groups for whom the WOST was also used during the AfA evaluation children with ASD registered comparatively low scores (Humphrey, et al., 2011). This confirmation of the trend that would be expected restores some faith in the reliability of the data.

Conclusion
The results indicate that attempts to improve peer and teacher relationships will not have academic benefits to children with ASD. Whilst this does not diminish the importance of improving such relationships, one must infer that factors external to classroom relationships are more important in determining academic outcomes for children with ASD. Such a conclusion arguably supports the earlier suggestions that these children either have a desire for aloneness (J. Scott, et al., 2000) or low awareness of any affective response to relationships (Bauminger & Kasari, 2000). This quantitative finding would be more useful practically and theoretically if such factors were directly accounted for as predictors in the model rather than floating within the baseline attainment measure. Unfortunately, none of the other theoretically relevant available predictors were statistically significant, meaning that this part of the research is unable to give a direct suggestion of why relationship change has no impact on academic attainment.

There are reasons to be cautious in interpreting this result however, as the data used shows surprisingly high levels of classroom relationship throughout the project. Contrary to research indications, mean scores for peer and teacher relationships were either on the midpoint or the positive side of the scales throughout the project. Therefore, although it is difficult to be certain of whether it is an issue of reliability or of sampling, these results may not be representative of the ASD population. Relative to other children surveyed in the AfA evaluation, children with ASD had lower classroom relationship scores, an intuitive trend which may imply that a sampling issue across the entire evaluation dataset is the more likely. Again, this is a limitation of using data that was collected for another purpose.

5.1.1.ii – BESD

There were some similarities between ASD and BESD group findings, as the BESD model as a whole accounted for 83 per cent of variance in final
attainment, with a very large contribution coming from baseline attainment and the various factors that lie within it. However, in this model there were other significant predictors including peer relationship change, behavioural problems and attendance and not including teacher relationship change, language group, FSM eligibility or gender. Of the non-significant predictors, teacher relationship change had the strongest association with final attainment. The beta value of the association, indicating strength of predictive effect, was similar to that of attendance, but the p value was .08, slightly outside the most tolerant significance threshold of .05, indicating a marginal non-significant trend.

This juxtaposition is surprising given that there is a greater volume of research on relationship-learning association in terms of teacher relationships than peer relationships (Cornelius-White, 2007) and that authors have hypothesised (Hamre & Pianta, 2001) with some empirical support (Roorda, et al., 2011) that teacher relationships will be more important for pupils who are academically at-risk, which certainly seems to include pupils with BESD according to national statistics (Department for Education, 2011d).

Although the non-significant result for teacher relationship change was unexpected, the significant predictive effect of peer relationship change for this group is in line with the predictions at the end of the literature review. Confidence in the methodology can be drawn from the significance of behavioural problems and attendance as predictors of attainment, as this echoes previous research (Buhs, et al., 2006; Gottfried, 2010). Although peer relationship change was a statistically significant predictor of final attainment, the effect size\(^7\) of the association suggests that sizable improvements in peer relationships may be needed in order for a tangible academic benefit to be derived.

\(^7\) Referred to in the results section as beta value
If the results of the regression generalise to the population, as the satisfactory meeting of model assumptions suggests, the effect size for peer relationship change indicates that pupils need to gain 12.5 points on the scale in order for that change to independently predict an improvement of one national curriculum sublevel. Such a change would be unusual as there is only an 18-point range on the scale and among the BESD sample, the standard deviation was 3.4 points and the mean change was an improvement of 0.9 points.

Whether or not this makes the association practically significant is open to interpretation and requires a consideration of what a sublevel of progress represents in the school context. It has been suggested that one useful means of evaluating practical importance of academic attainment change is to compare it to a ‘typical year of growth for a given target population of students’ (Hill, Bloom, Black, & Lipsey, 2008, p. 173). Quantifying these results in terms of progress over time, the UK government’s expectation for all children is that they make at least two national curriculum sublevels of progress per year. The descriptive statistics show that the mean academic progress over the five terms of this project among the BESD sample was 3 sublevels, indicating that they were progressing slightly slower than expectations.

If pupils were hypothetically progressing in line with government expectations at constant pace, taking the teaching year as 39 weeks (Department for Education, 2012c), one sublevel of progress would be achieved every 19.5 weeks. Each teaching week thus ‘should’ bring just over 0.05 sublevels progress. If the mean peer relationship improvement of 0.9 points independently predicted just under 0.1 sublevels of progress, this change is therefore roughly the equivalent of two ‘acceptable’ weeks of teaching. Although progression is unlikely to be linear in nature, this seems a practical way of quantifying the results.
If a future peer relationship intervention had a similar level of effectiveness as the 213 social and emotional literacy interventions reviewed by Durlak et al (2011), which would move the target variable by 0.59 standard deviations, the effect size would predict a knock on academic benefit of 0.2 sublevels or the equivalent of four teaching weeks. If there was a 1 point increase in 3 out of 6 items on the peer relationship scale (e.g. from strongly disagree to disagree), a benefit approaching half a term of progress would be predicted. While the above discussion is based on a simplistic formula in terms of progress over time, it does suggest that despite the relatively small effect size peer relationship change may yield tangible, knock-on academic benefits.

As discussed in the results section, the low effect sizes for all but one of the predictors in the model is likely given the very high value for baseline attainment (.91). As such a large portion of the variance in final attainment that the model accounts for is predicted by baseline attainment, the strong statistical significance of peer relationship change as a predictor independent of baseline attainment is in itself a striking result. Of the five alternative predictors included, which all have evidence suggesting their importance for attainment, only two emerged as significant predictors. While the non-significance of gender, first language or free school meal eligibility to final attainment may be a valid finding it also suggests that the choice to include baseline attainment led to a fairly stern test of all other predictors.

This may have influenced the result regarding teacher relationships. To illustrate this point, an influential study with typically developing children (Hamre & Pianta, 2001) offers a useful comparison. Investigators utilised a similar methodology with regression analysis including multi-subject, teacher-rated composite academic scores as the dependent variable. While teacher relationship negativity (comprising conflict and dependency) was a statistically significant predictor with an effect size of -.23 among lower elementary children, there was no baseline attainment data available for this
young group. When lower elementary attainment data was included as a predictor with the upper elementary and middle school groups, it became the strongest predictor in the model with effect sizes of .41 in the upper elementary group and .37 in the middle school group. The unique contribution of teacher relationship negativity almost disappeared with effect sizes of .01 in both age groups. However, outside the regression analysis conflict and dependency remained significantly negatively correlated with attainment for older children. The authors concluded that although the relationships were an important predictor of academic outcomes, their effect was mediated by prior attainment.

Relative to Hamre and Pianta’s (2001) regression models, $R^2$ value in phase 1 results were more than double (for both ASD and BESD groups), suggesting that there was more variance available to be attributed to predictors than in Hamre and Pianta’s analyses because the model as a whole explained more variance. This theoretically makes it more possible to have several strong predictors with high effect sizes. However, the effect size of baseline attainment was also more than double at .91 (.94 for ASD) the equivalent in the earlier study, meaning that it was less likely for other predictors in this analysis to have high effect sizes than in Hamre and Pianta’s study. Therefore if the association between teacher relationships and academic attainment is mediated by prior attainment, the high beta value for baseline attainment in these results may explain the null result regarding teacher relationship change for both this group and the ASD group.

However, one of the advantages of measuring relationship change, which the above study did not, should be that it is less directly connected to prior attainment. The implication of mediation by baseline attainment would therefore be different. Teacher relationship effect on attainment being mediated by prior attainment suggests that children benefitting academically from positive teacher relationships are those who achieved
well in the past. Given that teachers are likely to prefer students that they find easier to teach (Van Maele & Van Houtte, 2011), this is unsurprising. If, hypothetically, teacher relationship change was positively correlated with attainment but its predictive effect was mediated by prior attainment, it would suggest that low-achieving students are less likely to derive academic benefit if teacher relationships improve. This would suggest in turn that relationships are less important predictors of attainment for low achievers, perhaps because of additional academic risk factors such as cognitive difficulties, which are not prevalent among higher achieving children.

The null result for teacher relationship change in phase 1 when there seems to be a wealth of evidence suggesting that teacher relationships are both problematic for children with BESD and crucial to academic outcomes for typically developing children leads us to two questions. Is there an association between teacher relationship change and (final) attainment that is mediated by prior attainment? And are they, similarly to the apparent findings regarding children with ASD a lesser predictor of attainment than other factors that may be holding them back? In other words, could there be factors which moderate the association between teacher relationship change and attainment?

As discussed in the ASD section above, the lack of availability of cognitive ability data is a weakness of this investigation. This is also true regarding the BESD sample, as the literature review demonstrates that within the category there are groups of children with specific difficulties, for example in attention span or in receptive communication. In Hamre and Pianta’s (2001) study, verbal IQ was measured throughout and remained a significant predictor of attainment when prior attainment was included, although the effect size went from .31 to .20 and remained at .20 in middle school. This stability relative to the diminished contribution of teacher relationships implies that among this non-SEN sample, verbal IQ did not influence the
relationship between teacher relationships and academic outcome. Therefore verbal ability difficulties did not appear to reduce the academic benefit of positive teacher relationships. While this may seem to suggest that cognitive difficulties might not influence relationship-learning associations, as this was a non-SEN sample the finding does not necessarily apply to children with BESD.

Whether or not cognitive difficulties are among them, phase 1 results suggest that factors other than teacher relationship change are the significant predictors of attainment for children with BESD. Might they also suggest that children with BESD do not benefit from teacher pupil relationship change because these relationships remain relatively poor? Mean levels of teacher relationships for this group at the start of the project were 1.9 on a scale with a maximum score of 3. At the end of the project this figure was still high, at 2.1. This means that the average teacher response to a positively worded teacher relationship item for children with was ‘agree’, indicating broadly positive relationships among the group and seemingly dismissing the suggestion that change was an insignificant academic predictor because relationships remained poor.

However, this mean level is surprising given the evidence presented in the literature review that children with BESD are at particular risk of poor teacher relationships. While this may be a reliable indicator of the benefit of the Achievement for All initiative in some cases, it also may imply that results might not be reliable, as discussed in the ASD section above. Mean peer relationship scores for this group were also surprisingly high throughout the project, moving from 1.8 to 1.9. In other words, there were more positive than negative scores for both peer and teacher relationship items throughout the project. If this data is not reliable, it reduces the amount of confidence readers can have in all findings regarding subquestion one. If this data is reliable, it questions how representative the AfA sample of BESD children is of children in this category nationally.
A further methodological concern in the ASD section regarding the teacher relationship null result in that group that applies equally to the BESD group was that the instrument contained fewer items than the peer relationship scale. This could have made the instrument a less sensitive measure of relationships despite the fact that psychometric testing and the confirmatory factor analysis did suggest that the scale was satisfactory. However tempting it may be for a researcher to dismiss null results, the non-significance of teacher relationship change does suggest that the association is not strong enough to yield knock on academic benefits. There are reasons to be cautious about this finding, but in terms of questions of the staff response reliability these also apply to the ‘positive’ result for peer relationship change.

Let us consider the practical implications of the finding. If peer relationships are more important predictors of attainment than teacher relationships one would expect improvements to peer relationships to be more likely to yield academic improvements. Why might this be the case? As pupils with BESD are less likely to have a statement than other children with SEND apart from those with specific learning difficulties (Department for Education, 2011d) they are likely to have less contact with assistants. Peer relationships may therefore be more important than staff relationships simply because children with BESD have more frequent interactions with peers than staff. However, the comparative general roles of staff and pupils in the classroom suggests that staff interactions are more likely to be task-related than peer interactions, so simply comparing interaction frequency is arguably misleading.

Teacher relationship change may be less important because adults are more likely to interact constructively with these children in spite of poor relationships. While one would expect teachers to be more emotionally mature and to feel more responsible for learning than peers, the literature
review did present evidence that teachers do discriminate in how they relate to pupils (e.g. Van Maele & Van Houtte, 2011), often unknowingly (Newberry & Davis, 2008) and that differences in this relationship predict academic performance (e.g. den Brok, et al., 2010; Pianta, et al., 2008). As this prior evidence was not collected using BESD samples, one could interpret the results of this enquiry as suggesting that teachers are more likely to make efforts to ‘override’ poor relationships if a child is labelled within the BESD category. This may emerge in phase 2 and would be an interesting angle for future research.

A final explanation for the discrepancy in academic relevance between peer and teacher relationship change could be that factors common to pupils with BESD mean that they are more affected by peer relationships than teacher relationships. Putative suggestions of what these factors might be are hampered by the diversity within the BESD group, but if the sample was predominantly characterised by externalising, disruptive behaviour it may be that peer relationships are more predictive of that behaviour than teacher relationships. Reducing disruptive behaviour could be a part of how peer relationship change improves attainment. However, this possibility is discussed in relation to subquestion 3 and the quantitative evidence suggests that behavioural problems and peer relationship change do not interact in predicting attainment. Again, phase 2 data may provide an understanding of why pupils could be more academically influenced by peer relationship change than teacher relationship change, should that pattern be replicated in either case.

Conclusion

The statistically insignificant association between teacher relationship change and final attainment runs counter to predictions and suggests that within this sample of children with BESD there are alternative factors that
are more predictive of attainment. While the majority of these are unknown as they were within ‘baseline attainment’, peer relationship change emerged as a significant predictor along with attendance and behavioural problems. The strength of the association between PPR change and final attainment was weak in comparison to the association between baseline and final attainment, but is strong enough to suggest that a rather modest level of peer relationship improvement had knock-on academic benefits roughly equivalent to two teaching weeks. Should an intervention in this area prove as effective as those reviewed by Durlak et al (2011), these findings suggest that this academic benefit could be doubled.

As with the findings for the ASD group, these results should be interpreted with caution because the mean levels of classroom relationship quality among the sample throughout the project were surprisingly high in comparison to prior research indications. The high levels of relationship quality either question the reliability of the measure or the representativeness of the sample, either of which are plausible in the AfA context. Arguably the early positivity of classroom relationships in the group may also have reduced the potential for relationship change, which could have influenced these findings. Equally if some responses were biased by a desire to demonstrate school level progress, poor reliability could have inflated relationship change levels. As this is speculative, it is unclear whether any potential distortion of the data might have increased or decreased the likelihood of relationship change being a significant predictor of attainment.

Phase 2 findings would complement these results if they are able to shed light on the other factors which relate to attainment and which may moderate the potential impact of relationship change, particular teacher relationship change. If the pattern of peer relationships seeming more important than teacher relationships is replicated in either case study, it will
be interesting to see whether any of the reasons suggested above explain the difference.

5.1.2 – What factors influence the strength and nature of the proposed association between classroom relationships and learning?

5.1.2.i – ASD

Relative to phase 1 data, more information is available about the two factors hypothesised to reduce the relationship learning association: cognitive difficulties and limited awareness of relationships. Therefore inferences about relationship-learning association strength can be better contextualised.

Both case study children with ASD apparently had cognitive difficulties, although this was far more severe in the case of Katie who was about to leave mainstream education and by the end of the project was taking English and Mathematics lessons with pupils who were four years younger than her. Joanna was in a mainstream secondary school and adapted quite well according to staff, but still required more help than most other pupils in her bottom-stream class and by the end of the project was struggling to the extent that the school were considering alternatives to GCSE. Joanna had particular difficulties with long-term memory and in understanding abstract concepts. She frequently required staff to provide alternative explanations, and these were typically based on converting verbal explanations to a more visual logic. This is in line with the discussion in the literature review of typical cognitive traits associated with ASD, where research indicates verbal processing weaknesses and the predominance of a more visual processing style.
Participants reported that Katie and Joanna were definitely aware of their classroom relationships. As will be discussed in greater detail later, a key finding for subquestion 3 is that Katie and Joanna relied on respectful relationships within the peer groups. Staff and parents unanimously informed me that classmates being kind and patient towards these children gave them the confidence to participate in the lesson. However if compared to typically developing children, awareness of peer relationships may have been limited in both cases. There were concerns that neither girl had friends within their class as a result of their difference from non-ASD peers. Katie’s mother gave this a key reason to move her to a specialist school, but although she felt Katie would enjoy school more if she was able to make friends by being with more similar peers her mother did not think the lack of friendships at the mainstream school had occurred to Katie. Similarly, early interviews gathered parent and staff consensus that Joanna did not have friends in her class but was unaffected by this ‘whereas perhaps a ‘normal girl’ it would get to her’ (Joanna’s second teaching assistant’).

In terms of teacher relationships the pupils differed although both certainly seemed to be aware of them. Katie was silent with ‘new’ adults and would take months to build trust with the new class teacher each year according to her individual needs assistant (INA) whereas Joanna told me that all teachers were helpful and according to her maths teacher was popular with all staff. Teaching assistants working with Joanna did feel that she was aware of relationships building over time because her confidence was greater when working with a staff member that she was used to.

Given their views regarding relationship awareness it is unsurprising that in the main participants did feel that teacher relationships were important to academic progress. Katie’s mother was unambiguous when she told me that Katie’s relationship with her INA was ‘absolutely fundamental to everything that she’s achieved’ (visit 5). This relationship had been fostered over five years. Although it was clear that this high level of delegation left the
year 6 class teacher unaware of Katie’s needs and struggling to cope if the INA was absent, mother and INA felt that this was the only way of helping Katie through mainstream primary school. The implication is that because her communication difficulties and anxiety made relationship-forming both very difficult and very important Katie required the specialist knowledge of an INA or an ASD school.

Joanna also had high levels of anxiety that increased the significance of teacher relationships. She was very aware of being behind her peers and had very low academic confidence despite constant staff reassurance. Given her academic difficulties it was vital that Joanna felt able to ask for help, which according to her mother depended on having positive relationships with staff. In terms of how strong the association between teacher relationships and attainment is, one key theme arising from both cases is that positive relationships enabled staff to support these girls in a way that was appropriate for their individual needs.

Peer relationships were not given the same level of academic significance as teacher relationships by either set of participants although as discussed above Katie and Joanna did both seem to require a supportive peer environment and may have struggled to manage anxiety or focus on academic tasks had this not been provided. As suggested earlier, cognitive difficulties relative to classmates did appear to play a role in weakening the association between peer relationships and attainment. Such was the need for specialist knowledge in teaching interactions that the role of other pupils in Katie’s education was limited to more basic activities such as listening to her read or reminding her of the steps of a gymnastic routine when staff were not on hand to do so. The principal impact of good peer relationships for Katie’s general progress seemed to be affective, making her more comfortable within the group and thus better able to join in, whereas children at a more similar academic level to their peers might also derive
more direct academic benefit, for example from helpful peers explaining how to solve a mathematics problem.

With a lesser gap from her class group Joanna was more able to use peer interactions as a source of academic support, but this remained relatively infrequent as she still relied heavily on attention from teaching assistants. This was probably a result of her low confidence and specific need for visually-based explanations. Joanna’s mother and second TA felt that her lack of friendships in the first year of the study did not affect her learning because she was relatively uninterested in integrating with the class group and relied on staff for support. Joanna did think she had friends in her class, which she defined as others who were helpful in lessons but expressed a preference to work independently of them.

Just as there were reasons to question the null result in phase 1, there are doubts regarding phase 2 findings that were more in line with predictions. Firstly, the importance of teacher relationship is difficult to distinguish from the importance of teacher contact time for pupils who require so much assistance with academic tasks. While phase 2 data suggests that a healthy relationship improves the effectiveness of such attention, the relationship quality is only one ingredient in determining how much impact teacher-pupil learning interactions will have on academic attainment. Staff competence in reducing anxiety or personalising delivery of academic content also seems very important based on participant comments. Gathering an understanding of pupils also reflects on how much time staff can spend with a child and how perceptive they are as well as relationship quality. Therefore it is important not to overestimate the contribution of relationship to the academic input of teachers and assistants.

Secondly, while there were plenty of positive comments about the quality and academic significance of teacher relationships in the case studies, both pupils continued to struggle academically. One could argue that the
combination of the lack of academic progress made by Katie and Joanna, the general importance afforded to teacher pupil relationships and the general satisfaction with those relationships does not add up. If these relationships are so important and were so positive, why was there a lack of progress? A critical reader may suggest that staff in particular may be predisposed to finding their relationships with pupils academically significant if they are investing the time and effort that both pupils required on a daily basis. If staff had thought otherwise, they may have struggled to motivate themselves for their role.

Another explanation is that because academic expectations for these children were low, as was expressed by all participants, the apparent lack of progress was not perceived as such by interviewees. Indeed, bearing the cognitive difficulties of both children in mind it does not seem fair to blame slow progress and an increasing gap from their peers on teacher relationships or to necessarily to perceive it as underachievement. It is more accurate to suggest that the potential impact that classroom relationships could have on attainment was substantially reduced by factors that the relationships could not influence. This could be true of any pupil, but in line with predictions it appears particularly true for these children. Nevertheless, the principal finding for research question one from phase 2 data is that participants did feel that teacher, and to a lesser extent peer relationships are of tangible academic importance for these two children with ASD. Most notably in the cases of Katie and Joanna, positive staff relationships seem to be a pre-requisite of effective academic support.

Conclusion

In both case studies, specific needs arising from cognitive difficulties relative to peers reduced frequency of academic interaction with peers and increased frequency of academic interaction with staff members. In line
with prior research indications these staff members were often assistants rather than teachers, which appeared to be a reflection of the amount of academic support required. As a consequence of the high dependency on staff, participants felt that teacher relationships were more important to learning than peer relationships. Despite this, both girls benefited from respectful peer relationships helping them to deal with anxiety and in Joanna’s case very low confidence. The general relational awareness of both girls was such that both forms of classroom relationships had a positive affective impact, reducing the barrier to learning arising from high levels of anxiety.

Overall, phase 2 data does support the prediction that teacher relationships will be more important academically than peer relationships. Such is the discrepancy between the two relationship types that the data does not relate to the prediction that general classroom relationships will be less important for learning than one might expect for typically developing children. The prediction certainly appears incorrect in terms of staff because trust and understanding were required before staff could become effective as academic resources. In terms of peers, the prediction appears correct because peer relationships had very little direct practical or motivational impact. There was an affective impact but even this was limited relative to typically developing children as adults suggested that neither girl seemed to be distressed by the lack of friends.

5.1.2.ii – BESD

Compared to Katie and Joanna, there was less common ground between Sabbir and Marcus, the case study children with BESD, in terms of what curtailed or accentuated the academic importance of classroom relationships. Given the indications of group heterogeneity in the literature review, this is probably to be expected. This section will discuss the one
common finding between the cases and then discuss each case separately before concluding.

The common factor for both boys was that they both felt that friends could be a distraction from academic work, a view that was shared by their family members and teachers. From Sabbir’s, perspective, characteristics of friends dictated whether or not they were helpful for learning. This echoes Kutnick and Kington’s (2005) findings reported earlier regarding school-exclusive friendships among boys. Sabbir and his mother both said that girls were better to work with than boys, and added that he was more likely to enter into his antagonistic behaviour pattern with male peers when relationships were poor. His year 6 teacher suggested that it was the responsible peers who were part of the circle of friends initiative around Sabbir rather than his original friends that helped him focus, implying that he had a tendency to form friendships that were school-exclusive.

However the traits of his peers may not have been the most significant factor in this dynamic. Sabbir was predisposed to disruptive behaviour that was designed to get attention from classmates and so was fairly easy to distract from his work. His mother suggested that he found it particularly hard to control his disruptive behaviour when with larger numbers of other children. He also had notable difficulties in relating to individual peers. His teachers told me of occasions where he wound other children up, provoking their violence towards him, and Sabbir reported that other children wound him up. Therefore the variable ‘academic usefulness’ of peer relationships was arguably a reflection of his own difficulties in terms of academic focus and pro-social behaviour as much as on peer characteristics.

Marcus also found it ‘hard to concentrate’ when he was in a class with his friends. His grandmother agreed and thought that some of Marcus’ disruptive behaviour was an attempt to fit in with his friendship group. Marcus did not touch on this but added that all classmates disrupted his
learning and that he preferred working on a one to one basis. His teacher reported that Marcus ‘doesn’t like people encroaching on his space’ and found it difficult to work with other pupils even if he liked the idea. Again, a combination of peer characteristics and Marcus’ traits seemed to play a role in this problem. His teacher suggested that low-achieving boys of his age, he were generally not emotionally mature enough for ‘working through some of the basics of their relationships with their friends’ not to distract them from ‘listening to instructions’.

Therefore three issues that could reduce the academic importance of peer relationships emerged across the cases. They were a hindrance at times for both boys because their friendship groups were not conducive to working. Neither child was particularly good at focusing on academic work and being in a large group of other children exacerbated that problem. Additionally, teachers of both boys suggested that they had social skill difficulties, which reduced their ability to use peers as learning resources.

Looking more closely at Marcus’ case, his teacher’s suggestion about emotional immaturity was at odds with his grandmother’s comments. She felt that Marcus was good at relating to other children because he was popular in school and socialised with other friends at home. She also suggested that he had particular difficulties in processing instructions that she believed were associated with his premature birth, stating repeatedly that Marcus needed to be told things one step at a time. The implication is that his teacher may have incorrectly judged him to be like apparently similar boys when there were underlying cognitive difficulties in play. Both grandmother and teacher agreed that Marcus’ disruptive behaviour was triggered when content was not delivered in a way that he could process, either because teachers were unaware of his needs or because other pupils requirements had absorbed their attention.
Thus from his grandmother’s perspective Marcus was totally different to pupils like Sabbir, in that cognitive difficulties rather than socio-emotional issues were reducing the academic potential of peer relationships and forming a key barrier to his learning. Throughout the case study visits, there was confusion and dispute regarding the nature of Marcus’ educational difficulties that followed a similar line, with staff also suggesting to me outside interviews that he accentuated his sight problems to gain attention while his grandmother insisted that frustration arising from issues with sight and working memory were at the root of his behavioural problems.

Another factor that hindered Marcus’ academic collaboration with peers was his difficulty in communicating with them. This seemed to be an issue specific to task-related peer interactions. Marcus felt that others did not listen when he was trying to speak, but his grandmother suggested that it was Marcus who was unable to receive the communication because of the short attention span that also made it difficult for him to process instructions. It seems that Marcus is an example of communication difficulties overlapping with BESD, and research indicates that both receptive and expressive problems are associated with behavioural problems (e.g. Ripley & Yuil, 2005).

If Marcus and his grandmother were not exaggerating the extent of his attentional, visual and communicative problems it is not surprising that Marcus had a preference for working without other pupils and perceived peers receiving teacher attention as a threat to his own learning. However, the school were not entirely in agreement on these factors and described him as attention seeking and immature. Indeed, the very categorisation of Marcus’ needs as BESD was arguably at odds with his grandmother’s understanding although she did not suggest so herself. From the information she provided, Marcus could also have been categorised as having speech and language difficulties or a visual impairment.
The ambiguity of this case illustrates the point made in the literature review about how the many possible causes of apparently similar behaviour among children with BESD. This diminishes the prospect of general conclusions about relationship-learning associations in the group and sets a challenge to forming inferences about this case alone. If his grandmother’s account is accurate, interventions to improve peer relationships for example through developing social skills would not be useful for Marcus because several other issues are in play, but if one accepts his teachers’ account, a well-targeted intervention might improve both his peer relationships and his ability to take on instructions. The general picture of factors influencing the academic usefulness of Marcus’ peer relationships is illustrated below. Notably emerging factors only diminish the relationship association.

*Figure 13: Suggested factors acting on the importance of peer relationships to Marcus’ education*

One of the ways in which teacher relationships appeared to help the children with ASD was that they provided teachers with more understanding
of individual strengths and weaknesses, and therefore how best to support a child academically. Confusion about Marcus’ primary difficulty was therefore a factor that reduced the potential academic impact of these relationships, because they were not always able to provide clear information about how best to support Marcus.

Despite this, the proposed mechanism seemed particularly relevant in the context of Marcus’ particular difficulties, and his tendencies to rely on individual attention and to become frustrated when it wasn’t forthcoming. Marcus wanted teachers to be aware of his problems and struggled to control his behaviour when this was not the case. When I asked why he felt some teachers were a lot better than others, he said ‘most teachers if you say you don’t understand it just kind of keep going’. Although this is partly an issue of staff having time to deal with Marcus’ individual needs, without a relationship they were also less aware of them. A particularly bad case of this principle happened with a supply teacher did not print out a worksheet for Marcus in a larger font and he was unable to read it, which according to his teacher led to him ‘getting very upset very quickly’. This teacher had realised that not only did she need to cater for his visual impairment but she needed to ‘be quite tactful about finding a way to develop his work without him feeling that he’s almost been punished’. This is arguably a positive example of how relationships, alongside experience and perceptiveness, can improve teaching strategy.

Similarly to Katie and Joanna, Marcus’ low confidence and ensuing need for reassurance and encouragement also seemed to increase the importance of teacher pupil relationships according to his teacher and grandmother. Although all participants within the case stressed the academic importance of teacher relationships, Marcus’ grandmother uniquely qualified this on two grounds. She felt that his relationship with teachers was less important than it might have been because his class was particularly demanding of teacher attention. As a bottom streamed class, many pupils required differentiation
of lesson delivery and several needed vigilant behaviour management. As all teachers were stretched by the particular characteristics of the class, they had fewer opportunities to use their relationship with Marcus to improve their specific interactions with him. This may explain why Marcus felt teachers often ignored his requests for assistance. However, from his teacher’s perspective having a relatively challenging class seemed to increase the importance of teacher relationships because they were needed to manage the class effectively. Therefore it is not necessarily class characteristics that diminish the importance of teacher relationships, but instead the lack of time to utilise them.

Finally, Marcus’ grandmother suggested that when he was ‘on report’, meaning that each lesson a teacher would write a comment about his behaviour into a book that was reviewed at the end of the week, his focus and behaviour improved significantly. This effect was more powerful than whether or not he had a good relationship with the particular teacher or pupils. Therefore in terms of tackling his behavioural problems, behavioural interventions were more important than classroom relationships. This is not particularly surprising and does not necessarily alter the strength of the relationship-learning association, but provides a reminder of its significance in the broader context of school life for Marcus. Overall, in terms of Marcus’ teacher relationships it seem that factors influencing the relationship-learning association seem to have a more balanced effect. Again this is summarised overleaf.
Sabbir was also a complex case in terms of factors influencing the relationship learning association. He developed some classroom relationships that were important for negative reasons. Therefore to clarify the discussion factors are summarised in how they impact classroom relationships both in the positive sense referred to in the other cases and in this negative sense. As discussed above, a combination of mischievous friends and his own difficulties in relating appropriately to peers or focussing on his work meant that peers tended to be a distraction for him and not to be a learning resource as they might be for other children. This was particularly in large groups or when peers were mischievous.

However, while it may have been difficult for peer relationships to be useful for him, they were also important in a negative sense according to Sabbir’s
mother. She felt that conflicting peer relationships were the most common trigger of his disruptive behaviour in lessons because he was particularly sensitive to them even though he often appeared to deliberately upset his classmates according to his teachers. Thus his relational difficulties with peers arguably made them less important as a resource, but more important as a barrier.  

Two further contextual aspects influenced the importance of peer relationships for Sabbir. The 'circle of friends' initiative that was conducted for him, which involved using a group of volunteering classmates to help him set academic and behavioural targets and to stay on track with them seemed to improve the usefulness of his peer interactions. His class teacher noticed that the more diligent volunteers were able to help him control his behaviour and stay on task during lessons. Sabbir also mentioned that peers would notice when he was unsettled and encourage him to speak to the teacher rather than starting to misbehave. In this way, the intervention not only improved Sabbir’s relationships with that group of children but it enabled those relationships to be an important resource in the classroom.  

Secondly, Sabbir claimed that pupils could help each other when teachers were unable to help them. He felt that teachers were often inconsistent in how they related to different children and that this made them less helpful to those who they were ‘really horrible’ to. In these circumstances, ‘if a child does something, they can like understand you because you’re in the same place’ (visit 5). By the time of this interview, Sabbir’s long and chequered relationship with his class teacher had broken down and the circle of friends intervention was firmly in place. In the lesson which I observed, Sabbir persisted with low-level disruptive behaviour and his class teacher did speak to him in a sharp, curt tone with little effect on his behaviour. As is discussed below, Sabbir seemed to deliberately antagonise this teacher and yet he also reported that he was sensitive to her harsh treatment and
needed the support of peers to compensate. Without unpicking the relational dynamic too far at this point, it seems that poor teacher relationships in this case made peer relationships more important to learning.

As demonstrated below, Sabbir’s behavioural and relational issues therefore had a multifaceted impact on the academic importance of peer relationships, both making them more and less important depending on who he was having problems with at a particular time and on whether relationships are seen as a resource or a barrier. Several factors both decreased the chances of positive relationships having positive academic impact and increased the chances of negative relationships having a negative impact. The circle of friends intervention and compensation of peer academic support when teacher relationship was poor made the positive association more important, but Sabbir’s more school-exclusive friendships pulled in the opposite direction as even where relationships were positive they were not making a positive academic contribution.
Figure 15: Suggested factors acting on the importance of peer relationships as a **positive** contribution to Sabbir’s education

- Antagonistic peer interactions
- Attention seeking
- Mischievous friends
- Difficulty focusing on work
- Large peer groups

Figure 16: Suggested factors acting on the importance of peer relationships as a **negative** contribution to Sabbir’s education

- Antagonistic peer interactions
- Attention seeking
- Difficulty focusing on work
- Large peer groups
- Compensation for poor teacher relationship
- Circle of friends intervention
Sabbir’s tendency to antagonise his teacher in year six also clearly had an impact on that relationship and the way that it influenced his education. The relationship became a negative factor because Sabbir would attempt to derail the lesson by asking the teacher ‘provocative’ or ‘difficult’ questions ‘to distract’ her and ‘to make other children laugh’ (Sabbir’s Y6 teacher). This had a negative impact on the teacher who reported being ‘emotional’, ‘exhausted’, ‘frustrated’ and having ‘feelings of failure’. She even contemplated quitting her job as the result of the decline in the relationship after what she had thought to be a period of progress. Given the extent of this problem, it is likely that the relationship between Sabbir and the teacher had a sustained negative impact not only on his learning but on the learning of the whole class.

His mother felt that he had a particular problem with this teacher because she was not calm in the way that she dealt with him. In the lesson I observed, the raising of her voice did seem to incentivise further negative behaviour. In contrast, during early visits when Sabbir was in year five there did not appear to be a particular problem with his teacher. She was not among his favourite staff members but was ‘in the middle’ (visit 3) as far as he was concerned. At the time of the first survey, the only survey completed for Sabbir, he received a maximum score on the teacher relationship scale although this did not necessarily relate specifically to the year 5 class teacher as Sabbir had a strong relationship with a teaching assistant who worked on a one to one basis with him. The year five teacher seemed to be calmer in dealing with his outbursts. She described an incident when he ‘blew up and got angry for no reason and I talked to him calmly and he explained that it was because it was too hard’ (Sabbir’s Y5 teacher). The teacher also learned that Sabbir did not like to be seen receiving help when seated with peers and so talked to him about his work at her desk. From that point, the teacher was able to help him with his writing and he made progress despite it being his least favourite subject. Arguably this is another example of positive teacher relationships enabling
teachers to gain pupil knowledge that helps them target teaching appropriately.

Remaining calm at the initial flashpoint enabled the year 5 teacher to gain this information about his academic weakness, and as she worked with him in a way that didn’t exacerbate his insecurity in front of peers she was able to intervene effectively without triggering negative behaviour. The teacher thus avoided the dynamic that occurred in year six and apparently with the same teacher when she taught Sabbir in year four. From her comments in the interview the year six teacher evidently put a lot of thought and effort into her relationship with Sabbir, and tried to apply what she learned about him to her strategies. However her more volatile manner in class ultimately scuppered her intentions because it encouraged Sabbir’s disruptive behaviour. In this case, teacher calmness seemed to have two effects on the teacher relationship-learning association. Firstly, where calmness was absent, teacher relationship became a negative academic influence by fuelling disruptive behaviour and establishing a negative cycle whereby further disruptive behaviour was met by further teacher displays of anger or frustration. Secondly, where calmness was present, the potential mechanism of information gleaned through teacher relationship informing teaching strategy as with the other case study children was unlocked.

Put another way, teacher calmness was important because it minimised the amount of interference that Sabbir’s perverse relational behaviour had both on relationship-learning associations and on his classroom functioning more generally. Therefore as a factor one could argue that it is only equal in relevance to Sabbir’s own issues, which his mother put down to the lack of contact he had with his father. The year six teacher felt that tangible progress would only be made with Sabbir if he had psychotherapy, suggesting that his needs were beyond the scope of school interventions. The manner in which he was manipulative and hostile towards the year six teacher and both upset yet perversely incentivised by her display of
negative affect was pervasive in that it was often replicated in his peer interactions. The behaviour was also contradictory and may have indicated a reactive attachment disorder (Carr, 2006) but Sabbir had not yet seen a professional who could provide a diagnosis. The underlying overall problem is not included on the diagram below as it was not clear exactly what it was. However, specific manifestations of it that influence the relationship-learning associations such as antagonistic behaviour are included.
Figure 17: Suggested factors acting on the importance of teacher relationships as a **positive** contribution to Sabbir’s education

Teacher volatility

Antagonistic behaviour

Teacher calmness

Figure 18: Suggested factors acting on the importance of teacher relationships as a **negative** contribution to Sabbir’s education

Teacher volatility

Antagonistic behaviour
Conclusion

The emerging factors influencing relationship-learning associations were more complicated for Marcus and Sabbir than they appeared to be in the ASD case studies. In terms of friendships, there were suggestions that both boys were friends with other pupils who shared their difficulties in focussing and who were relatively unlikely to be useful learning resources for them.

In Marcus’ case, this may or may not have been a serious academic issue depending on which account one accepts. In his view, all classmates were a distraction because they made it hard for him to concentrate, they were not helpful on group tasks because they didn’t listen to him and he preferred working without classmates. His communication and cognitive difficulties, which his grandmother felt were due to premature birth, therefore meant that peer relationships were of no particularly strong benefit or threat to his learning. His grandmother broadly agreed, but his teacher felt that because Marcus and his classmates were emotionally immature, their relationships preoccupied them and distracted them from the lesson. Staff at the school in general also felt that Marcus might be exaggerating the extent of his needs to gain attention. His low confidence, complex needs and lack of patience when they weren’t met all made Marcus more reliant on teacher pupil relationships but their influence was reduced by teachers having little time to deal with him and by the ongoing confusion about what his needs actually were.

For Sabbir relationships, particularly with teachers, were a double-edged sword. Social interaction was his main area of need and he often antagonised staff and peers. He struggled to focus on work or to manage his behaviour in large peer groups, where he would misbehave to gain attention. These factors made peer relationships less important as a resource and more important as a barrier, but peer relations became more significant after a successful intervention and following the breakdown of his
relationship with the class teacher. This relationship also was an important, negative influence on his learning as a result of Sabbir’s provocative behaviour being fuelled by the teacher’s lack of calmness and becoming a major distraction from lessons. His previous teacher dealt with him calmly and their relationship developed into a positive academic influence.

In terms of relating to subquestion 1 findings, the trend for peer relationships being more academically important was therefore not replicated in either case and so the tentative explanations of those findings were not tested.

5.1.3 - What is the nature of the proposed association between relationships and learning?

In this section the data relating to pupils with ASD and BESD will be discussed in turn before exploring how much agreement there is between the overall findings of this investigation and the relationship-learning mechanism research introduced in the literature review. This is a key part of the discussion because here the thesis makes a contribution to relationship-learning mechanism discourse.

5.1.3.i – ASD

Although Katie was significantly more impaired than Joanna by her particular educational needs, there were similarities in the general principle of how classroom relationships influenced the learning of both girls. As we have seen, the academic gap from classmates and the need for lesson content to be delivered differently pushed peer relationships into the background and teacher relationships into the foreground, with pupils reliant on relatively large amounts of individual staff assistance and less able than peers to use other pupils as a learning resource. Peer relationships for both
girls were still felt to make a difference to how well they could function in the
class environment however. Positive teacher relationships seemed to
combine a similar affective boost to classroom functioning with a more
direct academic influence, because they made a difference to how
successful participants perceived teaching interactions to be. The nature of
relationship-learning association for these children will therefore be
discussed in terms of separate mechanisms for teacher and peer
relationships. Pupil-specific findings will also be included.

Peer relationships

In terms of peer relationships, a consistent finding was that friendships were
distinct from good peer relationships. Both girls were relatively isolated
from friendship groups within their class, but this was not deemed by
participants to have a relevant connection with their academic progress.
Apparently more important was the fact that Katie and Joanna were both in
class groups who had positive group norms regarding how pupils related to
one another. Supportive relationships towards Katie and Joanna were
evident among their classmates despite their differences from others in the
class and the fact that they may not be friends who socialised outside the
classroom. In both cases staff felt that this was partly a result of school
policy and staff effort but that the pupil was particularly fortunate in being in
their particular year group. Teachers suggested that if Katie or Joanna
happened to be in the less harmonious year groups below them in their
schools, they would have fared considerably worse in lessons as a result of
increased anxiety and reduced confidence. These findings are reminiscent
of suggestions that children with ASD are prone to high levels of anxiety
(Spiker, Lin, Van Dyke, & Wood, 2012) and if classroom relationships can
play a role in reducing this and thus improving classroom functioning, there
is a suggestion that group-level educational needs of children with ASD may
increase as well as decrease the pertinence of relationship-learning
association.
As the above diagrams illustrate, the girls differed in what staff suggested might have triggered this loss of classroom functioning in different class
groups. Katie was sensitive to high levels of noise and so benefited from the class group being relatively calm and not requiring the teacher to raise her voice. Joanna was more aware of what peers were saying and according to staff had been upset after a teasing incident early on in her time at the school. Teaching assistants thought that had Joanna been in a group where teasing had continued she would have been less keen to come in to school and less likely to participate in lessons. Her mother agreed that Joanna’s usual willingness to volunteer answers even if she thought she was wrong would have been diminished if she thought that class mates might ‘laugh at her’ and was a reflection that ‘the rest of the class is kind with her’ (visit 3).

Katie drew some additional academic benefits from peer relationships. Her INA noted that being around similar peers with whom she could identify meant that she talked to them more and developed her speech and language skills which were a key issue holding Katie back academically. Classmates in the mainstream school approaching Katie to offer help also provided an opportunity to develop communication skills as she began asking these peers for help herself, in an appropriate way that represented a significant advance. Where they praised Katie, the INA felt that Katie felt better about herself. Being around the other boy with ASD in her class who was at a similar academic level was a particular boost to her confidence. However, the INA also reported that Katie was becoming more aware of the growing gap between her and her chronological class group, which was affecting her confidence badly. This is reminder of how the relationship-learning association can be reduced by other factors.

Therefore although they may not be as academically significant as they are for typically developing children, participant responses to suggest that there are ways in which positive peer relationships can make a difference to the learning of pupils with ASD.
Teacher relationships

Positive relationships with staff also had an affective impact for Katie and Joanna. Joanna’s mother felt that the ‘good relations’ developed with her teachers by the end of the five terms had ‘given her more confidence’ (visit 5). Both assistants and her class teacher spoke about trying to improve her confidence. Joanna usually assumed that she didn’t understand lesson content and required a great deal of reassurance, although this was not necessarily linked to her autism as another, non-ASD classmate was said to be similar.

However, despite staff efforts they felt her confidence remained low at the end of the study. Joanna made less than half the amount of progress than the mean level for children with ASD in her year group within the sample, and nearly four times less than the government expectation of two sublevels a year. Given the widening gap between Joanna and her peers it would not be surprising if teacher relationships had little success in improving her confidence. Again, this illustrates the factors influencing the strength of relationship-learning associations.

Katie’s INA seemed to play a similar role in trying to give her ‘the confidence to cope in class’ (Katie’s INA). This affective boost seemed to improve Katie’s chances of having a successful lesson because Katie’s class teacher felt that staff without a good relationship with Katie were less able to get her on task. Instead, Katie would become ‘vociferous’ (Katie’s teacher). Clearly, this was partly an issue of Katie needing ‘adult direction to be engaging in things and learning’ (Katie’s mother, visit 3) but the class teacher observed that a relationship was required for this to work, and the INA who had formed this relationship felt that it was a matter of giving her confidence to join in and that without this Katie would not be able to engage
with the lesson. For example, Katie would only respond verbally to new teachers during the register.

The connection between teacher relationships and teacher-pupil interactions leads us to the other common finding between the cases regarding how relationships influence learning. Good teacher relationships can improve the effectiveness of teaching; in fact the data suggests that they may be a pre-requisite for the effective teaching of children with ASD.

The improvement to teaching interactions seemed to occur in two ways. Firstly, as discussed above participants felt that without a relationship securely in place academic support would be less well received by the pupils. Both pupils would be likely to avoid interacting with staff. Katie refused to speak to such teachers at all. This was not true for Joanna, who felt positive towards all of her teachers and who was said by the teacher interviewed to be popular in the staff room. However, although Joanna’s default position of trusting adults seemed almost the opposite of Katie’s, one of her mother’s ‘main worries’ (Joanna’s mother, visit 3) before the school transition had been that teacher relationships in this school might not have been good enough for Joanna to feel able to approach teachers for help.

Secondly, the quality of the support itself improved as a result of applying the information which is gathered when a teacher relationship develops. Katie’s mother felt that the positive relationship with her INA provided the INA with information necessary to target academic support effectively. This was knowing the way things ‘need to be done so that we don’t aggravate things’ (visit 2). This was in contrast to her class teacher who did not have a strong relationship with Katie and felt unsure of how to work with her. Participants in Joanna’s case did not mention any improvement to teaching interaction quality although there was arguably evidence of the principle of applying pupil-specific information to teaching strategy in the way that her
teacher described where she placed Joanna in the classroom. This proposed mechanism is illustrated below.

*Figure 21: Proposed mechanism for teacher relationships influencing effectiveness of teaching interactions for case study children with ASD*

![Proposed mechanism for teacher relationships](image)

Clearly the application of pupil knowledge requires more than a good relationship between teacher and child, as it is also a reflection on how perceptive teachers and assistants are able to be given the other demands on their attention, but it does seem that positive relationships could be linked to increased staff understanding of pupils with ASD and thus improved strategies as well as better chances of pupils being able to accept support.

Another finding common to both cases was that teacher relationships can improve children’s’ ability to form positive relationships with classmates. This echoes prior research among typically developing children (Veronneau, et al., 2010) and was displayed differently in each case. For Katie, the reassuring presence of an adult who understood her almost as well as her parents according to her mother gave her the confidence and security to interact with peers and less familiar staff. Katie’s mother referred to the INA as ‘the gateway between the pupil and the teacher and the other children’ who facilitated all other relationships that Katie built at the mainstream school (visit 5). Without the INA, Katie’s mother felt that her daughter would
have been far less open to others around school. Joanna had a form teacher who was said by her teaching assistants to be superior to other teachers in the school at forming relationships with his pupils. The assistants claimed that this enabled him to foster a supportive atmosphere and camaraderie within the group that Joanna in particular benefitted from as discussed in the previous section.

This discussion is summarised in the diagrams below. Relative to the nature of peer relationship-learning associations there was more commonality between the cases and so they are not separated. Cognitive difficulties have been included here to demonstrate the finding that they can reduce the potential impact of teacher relationships either in strength or in nature by reducing one or more of the potential benefits.

*Figure 22: Diagram representing the nature of the teacher relationship-learning association for Katie and Joanna*
Conclusion

The proposed association between classroom relationships and learning for children with ASD was largely endorsed by participants in contrast to quantitative evidence gathered in phase one, which is unable to support any suggestion of how relationships and learning might be linked. Qualitative evidence suggests that both peer and teacher relationships can influence the learning process of children with ASD in various ways. Peer relationships have a reduced role compared to what one might expect among typically developing children but influenced both Katie and Joanna in terms of their emotions in the classroom and thus their ability to participate effectively. Although both girls had few friends, peer relations were generally positive and boosted confidence but participants felt that had peer relations been less positive both pupils would have lost focus. This chimes with prior research indications that children in this group are prone to high levels of anxiety (Spiker, et al., 2012). Katie also derived a benefit to her speech development from positive peer relationships.

Teacher relationships were particularly important in both cases as a result of pupil need for frequent and high quality staff interaction, which is in line with predictions. According to interviewees these relationships were positive and appeared to improve pupils’ learning experience in three ways. Teaching interactions were rendered more effective because pupils were more willing to engage with teachers and staff were better informed about how to cater for a pupil’s specific requirements. Good teacher relationships were also suggested to increase pupil engagement with lessons via improvements in pupil confidence and facilitating peer relationships.

5.1.3.ii – BESD

This section will also consider the findings common to both pupils before discussing the cases individually. Despite the change in analytical focus, largely these findings refer to the same evidence discussed in the previous
The findings from the post hoc quantitative analysis, which also relates to this subquestion are introduced before the conclusion of the section.

Three associations occurred in both cases. Firstly, both pupils said in the first year of the project that having friends improved their motivation to attend school. Marcus was said by his grandmother to be a popular boy, who always wanted to come into school in the morning. This did not change over time. However Sabbir had more problematic peer relationships as discussed above. He told me that he had been a bully and a victim of bullying, but felt that these issues had improved by the end of the project. According to his mother, it had also become much easier to get Sabbir into school by the time he was in year 6. Although she felt that this was a reflection of improved peer relationships, on days when he was still reluctant Sabbir’s mother also effectively used the threat of telephoning the educational welfare officer who had intervened in the situation effectively during year 5. As his pupil relationships and attendance remained somewhat problematic at the end of the project despite improvements, it is perhaps more accurate to summarise this in terms of negative relationship influence on learning whereas for Marcus this was undoubtedly an example of positive influence.

Another common finding was that staff who were able to build a positive relationship with these boys seemed to be better placed to support them academically as a result of understanding them better. Again this was operationalized differently between cases. Marcus was said by his grandmother and teacher to be very keen to accept help from teachers whereas Sabbir was the opposite. For Sabbir then, positive teacher relationship also improved the quality of teaching interactions because they increased his willingness to accept help as in the example discussed earlier regarding his year five teacher helping him away from the other pupils. Pupil requirement for positive teacher relationship before seeking or
accepting assistance is similar to the dynamic reported for Katie and Joanna. Positive teacher relationship improving the quality of teacher-pupil interactions by improving teacher understanding of the pupil is the only emerging relationship-learning mechanism common to all cases.

The other dynamic in both cases was that a number of the peers with whom they had good relationships distracted them from their work. Rather than an example of negative relationships having a negative impact, as was also the case with Sabbir, this is a case of positive relationships having a negative effect due to the 'school-exclusive' nature of certain friendships. It thus reduces the chances of peer relationships making a positive academic difference and suggests that a peer relationship intervention would be less likely to yield knock-on academic benefit.

However, peer relationships made two further academically relevant differences to Marcus. His teacher and grandmother both claimed that he was an anxious pupil who required a lot of teacher reassurance for his anxiety to remain low enough for him to focus on work and not disrupt the lesson. According to his grandmother, the positive peer relationships Marcus enjoyed helped to reduce this anxiety. Without them she feared that the classroom would feel ‘threatening’ (visit 5) to him. Peer relationships thus had a positive affective impact on his classroom functioning. This is probably connected to their impact on his motivation to attend. Secondly, Marcus thought it slightly easier to get his point across when he was more familiar with other pupils in a group task.

Despite the factors discussed earlier that reduced the positive potential of Marcus’ peer relationships, examples of positive association still emerged. However, teacher relationships seemed to have the more significant impact on Marcus’ education.
Not only did they improve the ability of teachers to meet his specific needs in terms of how to deliver lesson content or support, but they also improved his low academic confidence and helped him keep his behaviour under control. Marcus did not mind teachers being strict if they were also friendly, fun and showed an understanding of his difficulties. His teacher suggested that when she started with a new class, although she didn’t ‘seek popularity’ one of her first priorities was to build relationships with pupils by remembering their names, smiling and talking to them around school, and attending to each child individually roughly every two lessons. This was a priority for the teacher because she thought that these relationships improved her ability to teach and control the class. Marcus’ grandmother felt that he would ‘get nowhere’ without supportive teacher relationships.

In this case, the additional factors such as his tendency to become frustrated quickly when his needs were not acknowledged acted to increase the importance of these processes and no doubt to put some of his teacher relationships under strain. Relationship-learning mechanisms that emerged for Marcus are summarised below.

*Figure 23: Diagram representing the nature of the peer relationship-learning association for Marcus*
The academic contribution of Sabbir’s peer relationships seemed to change in nature in year six. Negative relationships remained a distraction in lessons and a threat to his motivation to attend, but the dynamic may have decreased in intensity according to Sabbir and his mother. The positive side of the association developed following the circle of friends intervention and Sabbir felt this helped him gain academic support when he couldn’t get it from the teacher. He and his year six teacher both suggested that certain peers actively helped him maintain focus and control his behaviour in lessons. According to his teacher these children were responsible volunteers from the intervention but according to Sabbir they were simply his more helpful friends. Either way, this was still a clear example of positive peer relationships having a positive impact. The overall nature of the peer relationship-learning association for Sabbir is illustrated overleaf.
Teacher relationships were also significant academic influences for better or worse. Although the relationship in year five was a positive factor, improving the teacher’s help and Sabbir’s ability to accept it, his relationship with the year six class teacher broke down and became a negative influence. Although the latter teacher was his class teacher for two years and built up her own understanding of Sabbir, her volatile reactions to his challenging behaviour were counterproductive as Sabbir was sensitive to teachers raising their voice. They incentivised further disruption and from Sabbir’s perspective reduced her ability to be an academic resource. As discussed earlier, he thought that the year 6 teacher could not help him because she spoke to him more harshly than she did to others. His mother added that Sabbir felt more able to ask for help from ‘friendly’ staff who he felt ‘bonded’ to and ‘could actually relate to’ (visit 3). The year six teacher also noted that since their relationship had deteriorated he absented himself more and was less engaged in her lessons.

The negative relationship thus not only reduced the teacher’s ability to help Sabbir but also led to further unhelpful consequences such as less engagement, attempting to derail lessons and leaving the classroom.
extent of this problem was sufficient to interrupt the education of the class and to upset the teacher and lead her to consider her suitability for teaching. This is reminiscent of Tew’s (2010) conclusion that where relational dynamics are impaired in the classroom, the situation absorbs large amounts of energy and leads to a low sense of self-efficacy. The negative relationship in this case became a problem for the whole class as the teacher struggled to control Sabbir or the course of the lesson, losing composure and confidence. This seemed to be the case during the observed lesson, although the presence of the researcher was likely to have been an added stressor in that situation and so may not have been a fair reflection of her classroom management.
Figure 26: Diagram representing the nature of the teacher relationship-learning association for Sabbir

Teacher-pupil relationships

If positive

- Sabbir more receptive of support
- Teacher can apply understanding of Sabbir

If negative

- Sabbir antagonises teacher
- Sabbir less engaged
- Sabbir absents himself from classroom
- Sabbir less receptive of support
- Teacher cannot apply understanding of Sabbir
- Reduced teacher morale
- Reduced overall lesson quality

If positive

- Teacher can apply understanding of Sabbir
- Sabbir more receptive of support

If negative

- Sabbir antagonises teacher
- Sabbir less engaged
- Sabbir absents himself from classroom
- Sabbir less receptive of support
- Teacher cannot apply understanding of Sabbir
- Reduced teacher morale
- Reduced overall lesson quality
Conclusion

As with the previous subquestion, the findings for Marcus and Sabbir were complex, although classroom relationships overall seemed to be important to both children, who were quite sensitive to them. The familiar mechanism of teacher relationships improving teaching interactions featured again in both cases and there was an illustration of this principle in reverse with Sabbir’s year six teacher.

For Sabbir, the academic impact of negative teacher relationship was at least as important as the impact of positive relationship. Not only did it reduce the role of the positive relationship-learning mechanism involving teaching interactions but it introduced negative mechanisms that affected Sabbir, his teacher and the class. These mechanisms could be affective, such as reduced teacher morale or more practical, such as Sabbir leaving the classroom or the lesson being taken off course. A dynamic whereby the teacher’s vocal frustration led to more antagonistic behaviour from Sabbir and thus more frustration meant that this situation was self-perpetuating and thus particularly influential for Sabbir’s learning.

Teacher relationships became both more important and more strained as a result of Sabbir’s SEN, which were relational in nature. This was also true of Marcus, although his needs were a disputed and ambiguous mix of sensory, cognitive, behavioural and communicative problems. Marcus craved staff attention, wanted teachers to acknowledge his particular academic difficulties and needed firm but friendly behavioural support. Positive teacher relationships seemed to improve teachers’ capacity to provide this assistance and to boost his low academic confidence. Therefore the nature of the teacher-relationship learning mechanisms in play was again both affective and practical.
Peer relationship quality was of affective and motivational importance in each case. This was a force for better for Marcus as his popularity reduced his anxiety and encouraged him to come in to school, and for worse in the case of Sabbir as his antagonistic peer interactions reduced his confidence and his attendance although the situation improved. Peer relationships had less practical importance than might be expected for other children as both boys tended to form school-exclusive friendships which did not tend to provide learning resources, although this changed for Sabbir following an intervention that boosted his relationships with some more responsible peers.

As teacher relationship quality was linked to improved behavioural support for Marcus, and levels of disruptive behaviour for Sabbir it may be appropriate to suggest another type of relationship-learning mechanism.

Figure 27: Proposed ‘behavioural’ relationship-learning mechanism

5.1.3.iii - Relating back to relationship-learning mechanism literature

The research presented regarding classroom relationships in terms of whether and how they might influence learning culminated in the suggestion of various mechanisms. These were designed to summarise theory and evidence into concrete suggestions of the different ways in which relationships could relate to learning. As the vast majority of material used did not specifically refer to children with ASD and BESD, a key objective of this research was to hold up these theoretical mechanisms against the case
studies to see whether any of them accurately described relationship-learning associations where they existed for these children. This subsection now discusses the mechanisms in terms of how well each was validated by the qualitative evidence.

Direct mechanisms

The direct mechanism essentially suggests that positive relationships will improve various aspects of learning interactions. Building on theorists including Dewey (1897) and Vygotsky (1929/1994), the proposal for teachers was that those who are more sensitive and attentive to their pupils will be more effective at knowing when and how to assist them. If one accepts that teacher relationships are about how well both parties know, understand and interact with each other it seems that improved relationships can lead to better understanding of pupils. This seemed particularly important to children with BESD and ASD in that like other children with SEN they may require additional personal understanding due to their individual requirements for care and lesson modification (Dyson, et al., 2004; Lewis & Norwich, 2005).

Examples of this mechanism in practice were found across all four cases. Each child had particular academic strengths and weaknesses, and most of them were prone to negative affect that could disrupt them if their specific needs were not met. In each case there was at least one example of a positive teacher pupil-relationship wherein the teacher grew to understand the pupil to some extent and was able to make effective teaching interventions on the basis of this understanding. The changes made could be small despite their effectiveness. For example it was learned that Sabbir did not like to receive support from teachers in front of peers. Katie’s INA picked up on how to work with her in a way that kept her calm and on track, Joanna’s teacher placed her among certain peers on the basis of
observation, and Marcus’ teacher learned how not to make support seem like additional work. Teacher relationship quality was not the only cause of these developments, as staff also displayed traits such as perceptiveness and patience, but participants largely felt that without a positive relationship teacher interventions would be less effective. This was illustrated by Sabbir’s apparent discounting of his class teacher’s support after their relationship broke down when he was in year six.

Marcus was the only case study child who did not require a relationship with a teacher to seek out their help. Across the other cases, the association between teacher relationships and pupil acceptance of support found led to a proposed two-pronged model of how the direct mechanism worked regarding teacher relationships whereby teacher were better able to give help and pupils were better able to receive it.

A similarly intuitive practical mechanism regarding peer relationships was mooted based on Brown and Campione’s (1996) model whereby the learning process of pupils is contingent on their relationships with one another being positive enough for their discourse during lessons to be constructive. Again peer relationships are not the only determinant of this quality, however negative relationships could be a serious obstacle to constructive criticism and questioning of one another or sharing information. This concept of a constructive social environment was apparently crucial for Katie and Joanna, despite the gaps in academic understanding between them and their classmates. While the respectful peer relationships largely had affective rather than practical impact on learning, there were also examples of pupils who would support both girls academically despite their differences. Sabbir seemed to feel that peers were a practical learning resource, particularly after an intervention that improved his relationships with some of the more responsible classmates. However, where his peer relationships were antagonistic they distracted him and led to poor behaviour. Certain friends also distracted him, supporting earlier
suggestions of boys being more likely to form ‘school-exclusive’ friendships (Kutnick & Kington, 2005). This applied to some extent to Marcus, but more importantly he was completely unable to access peers as a direct learning resource because of his difficulties with communication and concentration.

There was no support for the inverted direct mechanism (Mar & Oatley, 2008) whereby engaging with fiction simulates real social experience and facilitates perspective taking. This is inverted as learning is theoretically improving classroom relationships. The level of abstraction required in this mechanism meant that it was not applicable to Katie or Joanna. Sabbir or Marcus were also unlikely to have benefitted from this mechanism. Sabbir struggled to be appropriate in relating to others, however his issues appeared to be deeper than an inability to take others’ perspectives. In fact he appeared to deliberately antagonise others. This was not true of Marcus, but he generally enjoyed positive classroom relationships and was not in the age range whereby this mechanism has been found to operate (Baskerville, 2011; S. B. Miles & Stipek, 2006).

Overall, the educational needs of the case study children meant that, in terms of direct influences on learning, teacher relationships were arguably more important than they might have been for typically developing children whereas peer relationships had a lesser role. This was not however a principle that applied equally between any cases or even over time in any one case and largely reflected individual-level factors (Lewis & Norwich, 2005). Therefore caution is advised in interpreting the meaning of these findings for other children with ASD and BESD.

Mediated mechanisms

Most of the proposed relationship-learning mechanisms involved a third, mediating factor. For example, positive classroom relationships could be
linked in Maslow’s (1970) theory to the meeting of a pupil’s safety and esteem needs, which when met enabled the individual to engage more effectively with learning. Evidence suggested that relationships may influence the beliefs and emotions that underpin academic motivation (Martin & Dowson, 2009) and classroom functioning (Raider-Roth, 2005). Mediating factors were grouped into three categories; academic motivation, general motivation and affect.

Three mechanisms were suggested according to the principle of academic motivation acting as a mediator. Attribution theory (Borkowski, et al., 1990) proposes that teacher feedback regarding why a pupil has succeeded or failed on a task can influence their affect (Hareli & Weiner, 2002), sense of competence (Perry & Tunna, 1988) and their future achievement (Pianta, et al., 2008). Within the case studies, Joanna generally assumed she was incorrect in her understanding. Staff tried to use feedback to alter this perception, but without success. This resistant, negative attributional trait did not dissuade Joanna from participation, and so in this case the mechanism was not particularly relevant. However Marcus was said to need constant reassurance, including in the form of feedback, in order to remain calm and complete his work. Therefore in his case the principle seemed to apply.

Expectancy-value theory (Nicholls, et al., 1989) suggests that classroom relationships can alter how much a pupil values academic work and is motivated to engage with it (Wigfield & Tonks, 2002). This mechanism relates well to the suggestions that both Marcus and Sabbir had certain friends with whom they were less likely to work effectively, and the increased ability of Sabbir to learn with peers following an intervention that strengthened his relationships with more diligent pupils.

Finally, goal theory (Ames, 1992) proposed that classroom relationships influence the objectives held by students when they are working on a task
For example, pupils may have a performance avoidance goal, which is seeking ‘not to demonstrate a lack of ability’ (Martin & Dowson, 2009, p. 335). This also seems true of Sabbir as he did not like to be helped in front of peers. Again, this seemed to be less of an issue when his peer relationships improved in year six.

One trend emerging in this confluence is that neither pupil with ASD appeared influenced by academic motivation as a relationship-learning mediator. For Katie, the concept of academic motivation is difficult for others to appraise as her distractibility is associated with other difficulties. Joanna was apparently motivated at all times and there did not seem to be any factor that influenced this. It seems that in both cases academic motivation does not operate in the same way as it does for non-ASD children. If the concept is still valid, it does not seem to be a conduit through which relationships can influence learning.

Three further mechanisms implicating more general motivational factors were discussed in the literature review. These are more concerned with how pupils perceive themselves and whether or not elements of this may explain the association between classroom relationships and academic outcomes. According to self-determination theory, healthy classroom functioning and a positive attitude towards academic challenges are dependent on relatedness, competence and autonomy needs being met (Reeve, et al., 2004). Affective and social integration within the class group is therefore linked to increased engagement with learning (Wentzel, et al., 2004). The theory revolves around the meeting of emotional security needs (Reeve, 2006).

This principle seems to relate to the positive effect of Katie and Joanna’s respectful class groups. This relational atmosphere was said to improve their confidence and functioning, but from the data available it is difficult to assess the relevance of self-determination to these girls as supposed to
positive affect at a more basic level. Due to the centrality of emotional needs in this mechanism, there is an overlap with the affective mechanisms listed below and it is arguably likely that such mechanisms are a better fit. They may be less contingent on a child reflecting on the status of their relationships, which is less common to pupils with ASD, even those with higher levels of functioning (Bauminger & Kasari, 2000) than Katie and Joanna.

There was a more straightforward manifestation of this mechanism with Marcus, who struggled to contain his frustration if he did not feel that teachers were aware of his level of understanding or particular needs. Without teacher attention, he lacked the confidence and calmness to make progress. Again, it seemed that such were the extent of his needs that his positive integration with peers seemed powerless to improve his functioning or engagement. In terms of relatedness and belonging needs, bonds with teachers and peers also seemed important for Sabbir’s functioning. Unlike Katie and Joanna, it was also clear that Sabbir was aware of this as he talked about preferring peer support if a teacher was treating him unfairly and so it is clear that his reaction was not subconscious or purely affective.

Self-efficacy theory (Bandura, 1986) is concerned with a pupil’s sense of effectiveness, and there is some evidence that this is associated with supportive communication from others (Bandura, 1997) particularly when they have a positive relationship with them (Schunk & Miller, 2002). While Joanna and Marcus were both said to require and receive a lot of encouragement from teachers, there was no indication that Joanna’s sense of effectiveness improved even though staff felt that their support had been worthwhile. Therefore this mechanism cannot account for their input. Marcus also tended to find most tasks very difficult and preferred working with constant teacher attention. Comments from the class teacher about why and how she encouraged Marcus also suggest that the mechanism applied in his case.
The final motivational mechanism mooted was self-worth motivation theory (Covington, 1992) which suggests that classroom relationships play a role in whether pupils perceive academic effort as likely to boost or reduce their self worth. There was no clear evidence of this pattern in the phase 2 data. From the four case studies available, it seems possible to suggest that motivational relationship-learning mechanisms may apply less to pupils at the moderate to severe end of the autism spectrum than it does to typically developing pupils or those with BESD. Possible reasons for certain mechanisms applying less to children with ASD have been considered elsewhere in this discussion in terms of their understanding of relationships (Bauminger & Kasari, 2000) although the possible non-applicability of motivational mechanisms might also relate to more fundamental elements of cognitive functioning in the group such as impaired abstraction (Cashin & Barker, 2009).

The final mediated mechanisms presented in the literature review concerned affective responses to relationships, which might have an impact on the learning process. Raider-Roth (2005) suggests for example that where children feel secure about their relationships with classmates and teachers, it is easier for them to take the risk of expressing new, uncertain knowledge. If children fear hostile responses, they will not venture tentative explanations or otherwise show weakness. This in turn compromises their learning. Rustin (2011) has claimed that teacher relationships in particular can help pupils to regulate affect in the difficult classroom environment and thus function more appropriately. These mechanisms seems to be closer representation of teachers’ comments about the calming and supportive influence of Joanna and Katie’s peer groups. It was easier for teachers to suggest affect as a mediating variable, as both girls visibly grew in comfort and confidence as a result of their social conditions. The support that both girls got from staff had a similar effect and as both girls were focussed more on adults than peers probably improved their affect to a greater extent. This
principle applies to Sabbir as well, as his anxiety levels rose to a problematic level when his relationship with the year six teacher broke down, whereas when the year five teacher demonstrated calmness after an outburst he was able to calm down and return to the lesson. At no stage in the project was Sabbir without some conflict in the classroom, and he also remained generally unsettled and reluctant to display academic weakness around those with whom he was having problems.

Affective mechanisms were also implicated for Marcus, whose anxiety levels were said to be reduced thanks to positive peer relationships and who relied on supportive teacher relationships to bolster his low academic confidence. At an even more basic level of affective response, all four children were said to like school more and be more willing to attend when classroom relationships were positive, supporting the work of Solomon et al (1996). This has been suggested to help typically developing children feel less alienated and to become more independent learners (Ireson & Hallam, 2005). While the former certainly applies to the case studies, the children certainly did not become more independent as a result of this. This was due to the severity of their academic difficulties, apart from for Sabbir who was already an independent learner. Therefore, relative to typically developing children affective mechanisms appeared to be moderated by the SEN of each child. While they were not more likely to become independent, the other benefits associated with affective mechanisms such as them being more included and feeling less anxious or more confident are arguably of even greater importance for these children as they were particularly likely to be anxious and alienated from the group teaching.

Conclusion

The first important point to note is that where external factors such as the various cognitive deficits listed above did influence classroom relationships,
learning outcomes and the connection between them, the potential for other relationship-learning mechanisms to affect the pupil’s education remained, and in some cases was increased. As multiple mechanisms were detected in all cases this investigation demonstrates that the mechanisms are complimentary rather than rival suggestions as to how relationships can influence learning. Thus the entire section is in support of the suggestion that there is no universal mechanism explaining relationship-learning association, but that different mechanisms are relevant in specific cases depending on other factors in the situation.

However, the quantitative findings indicate that relationship-learning association suggested within the qualitative enquiry may not necessarily translate to changes in relationships predicting attainment, such is the predictive power of baseline attainment and all the factors that it may represent. Therefore while direct or mediated relationship-learning mechanisms can function despite moderating influences, they may not do so in a way that improves attainment as measured in national curriculum sublevels.

Another function of this section was to see whether there was any indication of some mechanisms being more or less relevant according to group characteristics. As the more homogenous group, this angle was more pertinent for children with ASD. However, a difficulty in assessing the relative occurrence of mediated mechanisms in the case studies was that, similarly to the quantitative data, there was not the right type of information to confidently pronounce whether a mediating factor between relationships and learning was predominantly affective or motivational in nature. Both mechanism types have a similar humanistic theoretical basis (e.g. Rogers, 1951) and appear rather similar in terms of what can be observed in a child’s behaviour. Throughout this section there has consequently been a degree of speculation on the part of the researcher and the inferences would be strengthened considerably by a more in depth study that is able to
monitor constructs such as self-efficacy more directly. Nevertheless, the data as it is suggests that all mechanisms can potentially apply to children with BESD whereas motivational mediated mechanisms may be less relevant to children with ASD.

Regardless of the motivational-affective distinction, the positive responses to relationships are all evidence that Cornelius-White’s (2007) concept of learner-centred teacher student relationships can apply to children with ASD and BESD. Warm relationships reduced anxious affect across all cases, facilitated Joanna and Sabbir’s willingness to expose academic weakness, and enabled Katie to build other classroom relationships. While it is not clear how much the children’s cognitive skills were improved, these more basic contributions to the their educational process seemed vital to their teachers and parents.

Finally, there was no indication within the case studies of a bi-directional relationship between classroom relationships and learning as suggested by proponents of the transactional model (e.g. Veronneau, et al., 2010). While prior research implies that academic ability can predict positive relationships with both peers and teachers, in these cases the largely positive classroom relationships surrounding the children were in spite of their low attainment. It appears that within these case studies, staff and peers have been able to make allowances for the children in terms of the bases on which they might normally form relationships (Jones & Frederickson, 2010). If this were generally true, it would give cause for optimism regarding the classroom relationships of children in these groups because their generally low attainment does not increase their risk of poor classroom relationships. Could this be generalisable? The quantitative data suggests that the broader group of children with ASD and BESD in which the case studies are situated enjoyed largely positive classroom relationships, but this is contradictory to prior evidence (e.g. Murray & Murray, 2004; National Autistic Society, 2006).
In summary, relationship-learning mechanisms appeared to be multiple, complementary and uni-directional for all case study children, and motivational mediated mechanisms seemed less relevant for the pupils with ASD, endorsing the prediction that due to differences in their cognitive processes (Cashin & Barker, 2009) classroom relationships may not be useful to these children in the same way as they may be for typically developing peers. However, as this is based on case study data it is not appropriate to make group-level inferences. Along with measuring motivational constructs directly, any study aiming for group-level findings would need a quantitative design that was able to demonstrate generalizability. Unfortunately, the quantitative element of this enquiry was not able to provide this as it was designed to indicate association strength rather than nature. Overall, components of children’s SEN acted to increase and decrease the importance of various relationship-learning mechanisms which suggests that, while classroom relationships are unlikely to ever be totally irrelevant to the learning process of children with ASD and BESD, their precise role as an educational resource will vary between individuals and over time.
5.2 - Concluding sections

5.2.1 – Meta-inferences across phases 1 and 2: How important are classroom relationships for learning?

This section is the point at which meta-inferences can be drawn from both methodologies and from all three subquestions. As stated in the methodology section the ‘multimethod’ design has been chosen because it has the potential to yield quality meta-inferences that minimise the weaknesses of either approach and generate a more insightful overall perspective. However, methodological debate also draws attention to various ways in which such a process can lead to errors. The following discussion will therefore draw the previous sections regarding pupils with ASD together and the reader will recognise several motifs from the legitimation types set out by Onwuegbuzie et al (2011) being incorporated into the discussion to improve the quality of meta-inferences.

5.2.1.i – ASD meta-inferences

What is the reader to make of the striking contradiction between quantitative and qualitative evidence gathered here: that teacher relationship change has no statistically significant effect on the attainment of children with ASD and yet that the teachers and parents interviewed generally felt that teacher relationships were a key educational factor?

The first point to make is that the samples are different. Although all data was gathered in the context of Achievement for All (AfA) initiative, selection of case study children was made by schools and it is more likely that schools would choose parents with whom they have a reasonable working relationship, which will in turn likely reflect on how well parents feel staff are teaching their child. Case study schools were nominated by their authorities, and again this arguably may favour the chances of encountering
positive teaching practice. Quantitative data used here did not involve any deliberate reduction of the ASD population within the national sample of AfA schools. Therefore the qualitative sample is less representative not only in terms of size but also how and why it may have been selected.

While the sample characteristics imply that phase one results are more representative, a strength of phase two was the increased ability to explore multiple factors within the topic of classroom relationships. Although phase two findings were less representative of the general population, they were more representative of how classroom relationships and academic attainment might be associated. For example, the main finding regarding peer relationships for children was that although lack of friendships may not register ‘normally’ for either girl they both fared a lot better than they would have done had they not been in respectful, harmonious peer groups. This group dynamic was not addressed by the Wider Outcomes Survey for Teachers (WOST), which focused specifically on the individual pupil rather than the dynamic around them. Arguably this is a good example of weakness minimisation in the study, as phase two was able to report an academically relevant aspect of classroom relationships that was not measured by the phase one instrument and would otherwise have been missed.

Meta-inferences do not require researchers to give priority to one set of findings. The purpose of this approach is that methodologies and research questions should complement one another. Looking at the findings as a whole there seem to be conclusions that can be read between the lines of each dataset given the results of the other, hopefully utilising both the insider’s and the observer’s view without too much projection or speculation from the researcher.

Let us consider the main question of whether or not classroom relationships are important to the learning of pupils with ASD. By including the
quantitative data for each case study child, the discussion has already
demonstrated that neither case study pupil made progress in line with
government expectations. Despite awareness of slow progression and the
largely positive experiences of both girls in terms of classroom relationships,
participants still thought that certain aspects of these relationships were
important for academic progress. The fact that by the end of the project
Katie was having lessons with pupils three years younger than her and
Joanna was looking unlikely to sit GCSEs did not contradict this. These
views reflected the academic expectations of the participants, which in both
cases were that the academic gap between the pupil and their peers would
inevitably widen over time regardless of the quality of their educational
provision. Thus, phase two participants would not necessarily be surprised
that improvements in teacher relationships had no impact on attainment
itself if they thought that the phase one ASD sample had similar constraints
on their academic potential.

How representative were Katie and Joanna of these constraints among
children with ASD? As discussed earlier, estimates of intellectual disability
(IQ below 70) among children with ASD fluctuate between 10 and 40 per
cent (LoVullo & Matson, 2009). IQ data for Katie and Joanna was not
available, although given the severity and pervasiveness of her difficulties it
is likely that Katie fell into this category. From observations of and
comments about Joanna it is less clear whether or not she had an
intellectual disability but she was far more able to communicate and had a
much lesser academic gap from her classmates. Joanna’s baseline
academic attainment (19.5) was only slightly behind the mean for children
with ASD in her year group in the phase one sample (20.9) whereas Katie’s
score (7.0) was substantially behind same-age children with ASD (16.17).
Overall it seems Katie and Joanna as a pairing might over-represent the
academic difficulties within the ASD sample in phase one or among the
national population.
If the phase one ASD sample had fewer academic constraints on average than the case study children, one might still consider the findings to contradict one another. However, despite Joanna being much closer to the age-group attainment mean there were many similarities between her and Katie in how factors such as cognitive difficulties or limited relational awareness influenced relationship-learning associations. Therefore the nature of these moderating factors may be more important than their strength, and phase two data thus arguably might still account for the findings of subquestion one.

If so, the implication is that although relationship change may not be as predictive of attainment for children with ASD as one would expect it to be for typically developing children, classroom relationships are not necessarily any less important for their learning. Given the cognitive difficulties and other factors influencing the learning of these children, the role of classroom relationships may be more connected to including them in group activities, keeping them calm and safe, boosting low confidence and enabling them to access academic support from staff and, where appropriate, peers. Attempts to improve classroom relationships would still therefore address important issues for these pupils, for example the worrying statistic of their fixed term exclusions being more likely to be due to assaults on staff or classmates (Department for Education, 2011d) than typically developing children or any other SEND category.

The prediction that teacher relationships would be more important than peer relationships for this group is not necessarily disproved by the findings of subquestion one, which according to phase two data may not have been the most relevant test of the relationship-learning association for this group. However, the conclusions of this enquiry must not gloss over the null result regarding classroom relationship change predicting attainment. The notion of knock-on academic benefits arising from relationship interventions has
not been supported by any of the evidence gathered here and seems not to apply to children with ASD.

What are the potential confounds to the legitimacy of these meta-inferences? One issue raised was sequential legitimation (Onwuegbuzie, et al., 2011), which requires researchers to consider how the data collection sequence may have influenced results. The application to this enquiry is that teaching staff interviewed in phase two are likely to have completed the WOST prior to their interviews. As teacher surveys were anonymous it is unclear which interviews were affected by this, but by the time of case study visits four and five the survey had been collected twice and so it is likely to have affected some of the data. Although the risk is perceived to be low because the WOST did not refer to relationship-learning associations, by raising and investigating the issue of classroom relationships with the participants the survey will have heightened awareness of the topic and thus reduced the naturalistic validity of some phase two data.

However, another check to this threat is that all data in this enquiry has been gathered during the AfA initiative, which also raised the profile of classroom relationships and in many cases led to direct interventions on that outcome. Amidst the general context of the data therefore, the threat of sequential distortion is reasonably low, but it is likely that the AfA context will have influenced the data and made it less representative of the ASD population in the UK. Staff knowing that the school would receive school-level feedback based on their survey responses could have compromised the reliability of phase one data by inflating relationship change scores. Staff and parent awareness of the government promoting classroom relationships through the initiative may have influenced them to emphasise their importance more than they might have done otherwise. Should both of these fears be accurate, they would help explain the discrepancy between subquestion one and the other findings.
The difficulty in determining how representative case study pupils were of the quantitative sample and thus how much the findings could explain one another highlights the difficulties of paradigmatic mixing which both critics (e.g. Guba & Lincoln, 1988) and defenders (e.g. Johnson, 2009) of mixed methods have pointed out. For this reason, although the meta-inferences are useful and may form the ‘headline’ of the research, the findings of each subquestion must be preserved independently and also be represented in the conclusion of the report.

5.2.1.ii - Relating back to the ASD literature

After discussion of the literature, three predictions were made about relationship-learning association for children with ASD. The first prediction was that as a result of the lower relational competence and in many cases lower cognitive ability of pupils with ASD in comparison to typically developing pupils there would be less potential for classroom relationships to have an academic impact and thus the overall classroom relationship-learning association would be weaker for the ASD group than prior indications suggests it may be for typically developing children.

The suggestion of reduced relational competence was based on the body of evidence (Baron-Cohen & Wheelwright, 1999; Baron-Cohen, et al., 2001; Baron-Cohen, et al., 2002) that children with ASD have impaired ‘theory of mind’ skills which involve a reduced ability to interpret other peoples’ mental states or actions and the fact that children with ASD are identified on the basis of impaired communication, social skills and repetitive restrictive interests (Cashin & Barker, 2009) all of which impair their ability to build relationships. Cognitive deficits are not pervasive within the group, but one recent review suggested that between ten and forty per cent of the group have a general IQ below 70 (LoVullo & Matson, 2009).
In theory, if pupils with ASD are both less able to form relationships and less likely on average to achieve higher grades than typically developing children due to these difficulties, the potential for classroom relationships to become positive influences on learning and for that influence to have an impact on attainment is reduced. This prediction was upheld by the quantitative analysis, which suggested that although there were improvements in both teacher and peer relationships in the ASD group, such changes did not predict attainment. Qualitative evidence was less clear-cut. Both girls had social and cognitive problems similar to those mentioned above, which did appear to curtail the academic significance of peer relationships in both cases despite one pupil being more impaired than the other. Teacher pupil relationships were felt to be important, in spite of these deficits and largely more important as a result of them. Teacher relationships were positive in both cases and yet there was little academic progress, so overall the prediction of a reduced association appeared to be upheld.

The second prediction was that teacher relationships would be more academically important than peer relationships. This prediction was partly based on the social and cognitive difficulties common within the category. Furthermore, children with ASD tend to work closely with assistants more often than typically developing children (Tews & Lupart, 2008) and teachers are thought to be at greater risk of burnout or frustration when teaching children with ASD if they do not have knowledge of ASD (Humphrey & Lewis, 2008a) or an underlying teaching philosophy (Jennett, et al., 2003). In other words, the importance of the teacher relationship is heightened by increased dependency on staff and greater demands on their skill and patience.

Quantitative findings did not support this prediction as neither teacher relationship change nor peer relationship change were statistically significant predictors of final attainment. However, case study data suggested that the quantitative results might not disprove the prediction
because predicting attainment arguably fails to capture the academic significance of teacher relationships. In the case studies, teacher relationships were linked to improvements in teacher understanding of pupil, pupil acceptance of help, pupil affect and functioning and the inclusion of the pupil within the mainstream class group. In those terms such relationships were indeed more important than peer relationships, although peer relationships also played a role. Endorsing Jones and Frederickson’s findings (2010) the classmates of Katie and Joanna seemed to make allowances for their unusual behaviour and were supportive of them despite not being friends. The respectful relationships that the girls enjoyed with their class groups reflected both staff efforts and good fortune in terms of the characteristics of classmates and seemed to counter the risk of bullying (National Autistic Society, 2006) and verbal aggression from peers (Humphrey & Symes, 2011b).

Both girls did work extensively with assistants and yet in these cases there was little suggestion of the importance of ASD experience in terms of reducing burnout or frustration. The individual needs assistant who worked with the more severely impaired pupil reported no frustration and yet had no prior experience in education. The ways in which her relationship with Katie and the teacher relationships in the other case made a difference were broadly similar despite a large difference in cognitive, social and speech deficits relative to peers. This impact contradicts the minor role of teacher relationships in ASD literature (Williams, et al., 2005) in comparison to peer relationships (e.g. Jones & Frederickson, 2010) and suggests that teacher relationships and their importance for learning would be a fruitful avenue for future research.

Finally, the debate regarding reduced interest in relationships among children with ASD versus reduced social understanding and attribution of affective reactions to relationships was taken to predict that mechanisms which involve the pupil to reflect on relationship quality as well as reacting
to it are less likely to feature, which could also mean that fewer mechanisms are likely to be important for children with ASD. The former suggestion is largely based on research (Bauminger & Kasari, 2000) which found that although pupils with ASD were largely aware of having fewer friends than others and of feeling sad or lonely, the acquisition of more friends did not seem to reduce those feelings as one would expect. Thus awareness of peer relationship may have had affective impact, but the pupils were relatively unaware of it, failing to attribute any such impact to the relationship. In theory one would expect there to be fewer ways that relationships could make a difference to learning for children who may react less to changes in classroom relationships than other pupils or be less aware of how relationship quality makes them feel. However there is also a long established theory that children with ASD have a desire for aloneness and less interest in classroom relationships (Kanner, 1943; J. Scott, et al., 2000). This would also predict that fewer relationship-learning mechanisms would apply, in that pupils may simply have no reaction to relationships at all.

This prediction seemed to be true in both cases, in that subconscious mechanisms were more prominent and that fewer mechanisms applied for Katie and Joanna than Sabbir and Marcus. Participants felt neither girl was particularly aware of their relative lack of friendships although they were affected by positive classroom relationships in several ways that aided their experience of school. Katie was thought by her mother not to notice other pupils occasionally moving away from her in the playground as she preferred to be with an adult. Her INA suggested that without adults present, Katie would simply stand alone. However, while her mother opted for a specialist secondary school partly to increase her number of friends she did not feel that this relative isolation in terms of friendships had influenced her learning. Staff who had taught Joanna also felt that she had few or no friends in terms of socialising outside of school, but that this didn’t upset her as it would most girls that they taught. Joanna understood
friendship differently, feeling that friends were simply peers who were kind and helpful.

Despite both girls experiencing the isolation from peers associated with children in this category (Rotheram-Fuller, et al., 2010), positive peer relationships at this more basic level played direct and affective roles for both girls as discussed regarding the research questions. Isolation may not have had the strong academic and affective impact that it can for other children (Buhs, 2005; Malmberg & Little, 2007) as they were apparently unaware of it, although this was not directly tested. As we have seen in the BESD case studies and prior research (Kutnick & Kington, 2005), friends can be a negative as well as a positive academic influence, so a reduced susceptibility to this factor does not in itself constitute a clear risk for learning.

In terms of the debate regarding lack of desire for relationships (J. Scott, et al., 2000) versus lack of understanding of their responses to them (Bauminger & Kasari, 2000; Bauminger, Shulman, & Agam, 2003), the data overall suggests that despite limited awareness of relationships, for example Joanna’s unusual definition of friendship, both girls were happier when peer relationships were respectful and they had the close support and understanding of staff members. Both girls also initiated more interaction with others once a sense of security had been established. It appears therefore that they may have had some desire for relationship, although they may simply have wanted the interactions and simply felt more able to ask for them. While they could have been motivated be desire for a game or an explanation, they were unlikely to be motivated by any affective boosts if they were unable to link relationships to such responses. Further observation of the case study pupils would have been necessary to get a closer understanding of what motivated their prosocial behaviour, but superficially it seems that both pupils desired relationships even if they understood them differently.
There were also some findings that related more generally to literature discussed earlier. For example decreased anxiety, which was a key part of the affective benefits of classroom relationships discussed above, is thought to be another important educational factor for this group (Spiker, et al., 2012). Superficially, Katie’s close working with her INA did mean that her class teacher had less opportunity in terms of frequency of interaction to build a relationship with her and learn how to teach her, echoing warnings about delegation to assistants hampering formation of other teacher (Emam & Farrell, 2009; Marks, et al., 1999) and peer (Hemmingsson, et al., 2003) relationships. However, Katie’s mother felt that the INA facilitated the development of other classroom relationships by aiding communication and helping Katie to feel more comfortable and confident. This supports the views of Robertson et al. (2003) who found that the use of assistants did not interfere with relationship formation. It may be that although individually delegated assistants do monopolise interactions with their pupils, in terms of influencing other relationships the negative effect of such monopolisation is outweighed by the improvement in pupil affect and functioning generated from a positive relationship and effective involvement.

Katie and Joanna did not seem to be at a heightened risk of exclusion for assault on staff or pupils and therefore as case studies they do not relate to the finding reported at national level (Department for Education, 2011d) that this SEND category is more likely than any other to be excluded for such a reason. Although Katie could be boisterous at times, there was no suggestion of deliberately hurting others, while Joanna was perceived by staff and her mother to be particularly well behaved. Although the national statistics could not illuminate the reasons behind the assaults, it is not overstating the evidence to suggest that good classroom relationships may have reduced the risk to an extent. In both cases, supportive classroom relationships were seen to be crucial for the child’s ability to function without high levels of anxiety. On the occasion where peers had teased
Joanna, she reacted strongly but without aggression. Thus while some children with ASD are likely to be more prone to reactive aggression (Humphrey & Symes, 2011b) than others, supportive classroom relationships may be important in reducing this risk where it exists.

5.2.1.iii - Conclusion

Changes in peer and teacher relationships as they were measured by the WOST did not predict academic attainment among the sample of 152 children with ASD. Therefore in terms of whether potential interventions might be directly linked to academic gains, classroom relationships do not seem to be important for learning. However, the experiences of staff and parents in the case studies imply that this may not be the most appropriate way to illustrate the relationship-learning association. While factors such as cognitive difficulties may reduce how much difference relationships make to their attainment, the education of these children may benefit from positive teacher relationships and to a lesser extent positive peer relationships in other ways. These include involving children with ASD in group activities, keeping them calm and safe, boosting low confidence and enabling them to access academic support from staff and, where appropriate, peers. Teacher relationships also appear to be a resource for teachers of pupils with ASD, improving their understanding and knowledge of the pupil and thus the appropriateness of their support.

According to the literature review these outcomes are likely to be significant achievements, perhaps especially within mainstream schools that are not designed to cater specifically for children with ASD. Research suggests that this is a group at particular risk of bullying, peer isolation and exclusion due to assaults on peers or staff, and a group which places particular stress on mainstream teachers who can be unsure of how to meet their needs. These findings imply that attempts to improve classroom relationships might be a
protective factor against such dangers. Therefore although they may not narrow ‘the gap’ in attainment, classroom relationships still appear to make an important contribution to the education of children with ASD.

5.2.1.iv - BESD meta-inferences

As with the findings regarding ASD, there is an obvious starting point for meta-inferences because the qualitative and quantitative findings appear not to support one another. Quantitative results suggested that teacher relationships were not important in terms of having a knock-on academic benefit for the BESD group, but that peer relationships were important in this way. Qualitative results contrastingly implied that for both children with BESD, the overall impact of the many factors influencing them at school was to reduce the academic importance of peer relationships and increase the importance of teacher relationships.

Again the first point to make is that qualitative and quantitative samples cannot be satisfactorily integrated with one another. As on this occasion there was an example of negative classroom relationships, it seems unlikely that selection of the case studies was biased by school desire to show positive cases.

Despite this, Marcus and Sabbir were not representative of the relevant BESD group mean values for their age groups in phase 1. The surprisingly high levels of classroom relationships at either end of the project possibly were true in Marcus’ case although the teacher survey was only completed for him at baseline. At this point his mean teacher relationship score was 2.00 (year 7 BESD mean 2.10) and peer relationship score was 1.60 (group mean 1.89). His baseline attainment was almost identical to the group mean but he was rated 2 sublevels lower by the end of the project whereas the group mean advanced by 2 sublevels, making Marcus an unusual case. This appeared to result from inflated early values as the result of ‘parrot
fashion’ (Marcus’ grandmother, visit 3) exam preparation in the last year of his primary school.

Although the school were reluctant to accept the possibility, it seemed that Marcus had significant academic obstacles that were neither relational nor behavioural in nature. The combination of difficulties in attention span, receiving verbal information and vision are likely to have increased his dependency on teacher relationships but to have decreased the potential for positive teacher relationships to have an impact on attainment. According to Marcus and his grandmother these factors certainly reduced the positive academic role that peer relationships could play. As Marcus’ combination of needs, perhaps the result of premature birth, are likely to have been fairly unusual within the phase 1 BESD group, this may explain the disparity from those findings in his case.

Sabbir also only had baseline survey data and his peer relationship score of 1.50 was below the group mean of 1.72. However, he received a maximum score of 3.00 for teacher pupil relationships when the group mean was 1.91. It is surprising that Sabbir was on the midpoint rather than the negative side of the peer relationship scale, but the teacher relationship value is more in tune with qualitative data and seems to reflect the positive relationship he had with his one to one support and to a lesser extent his class teacher in year five. Sabbir was two sublevels ahead of the year 5 BESD mean at the baseline, but by the end of the project his attainment was roughly equal to the group mean as he made less than half the mean level of progress. This also rings true in light of the qualitative data as his mother suggested that he was bright, but held back by antagonistic relationships. This relational pattern spread to his class teacher in year six and appeared to severely hamper his learning experience.

This development was not fed back to the quantitative analysis as the final teacher survey was not completed, but overall Sabbir seems atypical of the
year 5 phase 1 BESD group in that over the project he made less than half the amount of academic progress and his teacher relationships declined dramatically from an unusually high starting point. Therefore, Sabbir being an unusual case within the overall sample might once again explain the discrepancy with subquestion one findings.

This interpretation of the overall findings is unsatisfactory however, because prior research indicated that the BESD group was particularly heterogenous (e.g. Carr, 2006). It is likely that many children within the category were different from mean trends in terms one factor another. To assume that there is a predominant configuration of these values in the BESD group and that the case studies simply fall outside of the norms would therefore be at odds with evidence presented in the literature review.

Although regression analysis does take individual variance into account and the data screening process indicated normal distribution of classroom relationship and academic variables, the output of regression inevitably reduces the unit of analysis to the group. Arguably such results are less practically relevant if there is greater reason to suspect heterogeneity in the group in terms of the key variables. In other words, if children with BESD are as varied as they appear to be according to the literature and the difference between the two case studies, the usefulness of group results is reduced. If the discussion is to minimise the possible weaknesses of the individual methodologies, an attempt should be made to test out subquestion one findings on the case studies. Do any observed group trends apply individually?

It is not inconceivable that peer relationship change could have had academic benefits for either of them. For Sabbir, this appeared probable following the circle of friends intervention. Marcus felt that it was slightly easier to get his point across on group tasks when he knew the other group members better. However whether peer relationship improvements would
have translated into tangible academic progress is questionable. By year six, Sabbir was less distracted by problematic relationships with classmates and more able to use some of them as a learning resource or a support to his lesson focus. Despite this he was often disruptive or out of the classroom and overall made slow progress given his level of ability. Marcus already had positive peer relationships but preferred to work one to one. Overall, participants seemed to suggest that it would be surprising if improvements to peer relationships during the project moved either boy’s attainment forward given the other factors hampering their progress.

Similarly it is hard to deny that the case study data contradicts the finding that teacher relationship change does not predict attainment, particularly in the case of Sabbir where the negative relationship seemed to put several powerful and negative relationship-learning mechanisms into operation. Indeed, it is the very importance of teacher relationship change that undermines the importance of peer relationship change. The contradiction is less clear for Marcus because he sought help even where teacher relationships were not established. Furthermore, regardless of relationship quality any teacher assistance was limited by a lack of teacher time and his additional academic difficulties. Despite this, Marcus definitely relied heavily on his teachers and positive relationships seemed to lead to affective and instructional improvements that were academically relevant. In other words, the attention that he sought tended to be more productive if a relationship was in place.

The discrepancy regarding teacher relationships may reflect two case study pupils unusually reliant on or sensitive to teacher pupil relationships to some extent. It may also indicate that concerns about the sensitivity of the two-item teacher relationship scale are well founded. One item asked whether the pupil had a good relationship with at least one teacher. This could produce a misleading result for a pupil like Sabbir who got on better with his one to one support teacher than either class teacher. The other item asked
whether the pupil was able to compromise with teachers, which to some extent measures how receptive pupils are to teacher support. As the survey was about the pupil, there was not an item that addressed whether or not staff felt they knew the pupil well enough to help them effectively. Thus the instrument did not measure what all four case studies suggested was an important aspect of teacher relationship.

As discussed earlier, there are reasons to interpret subquestion one findings with caution as the mean levels of classroom relationship quality in the BESD group were surprisingly high at both timepoints, although they were normally distributed. This was contrary to research indications, so may indicate an unrepresentative sample or unreliable data. However as the Wider Outcomes Survey for Teachers was a new instrument this cannot be proven.

5.2.1.v - Relating back to the BESD literature

The recurring theme in the review of literature on children placed in this category was their learning and classroom relationships could both be negatively influenced by problematic behaviour, but that this behaviour reflected different underlying issues for different children. Unlike children with ASD there is not a suggestion of a common pattern of irregularities underlying the difficulties experienced at school. Because the group descriptor is very broad and at the relatively superficial, behavioural level, the category incorporates both children with more defined issues such as conduct disorder (Carr, 2006) or ADHD (Frick & Nigg, 2012) and children whose underlying problems are less known. In the context of such variation, the role of classroom relationships for learning appeared likely to be inconsistent across the group. Additional difficulties such as with communication (Lindsay, et al., 2007) plausibly reduced the potential for relationships to influence learning in some cases, but it also seemed
possible that some children in this group had behavioural difficulties that were directly connected to their relationships at home and school such as attachment disorders (Carr, 2006) or similar behavioural symptoms.

The expected heterogeneity within the BESD group led to three predictions. Firstly, at group level there was no reason to suspect a reduced relationship-learning association relative to what one might expect for typically developing children. This is because unlike the ASD group there were no commonly held factors that theoretically reduced the potential academic influence of relationships.

The quantitative data suggested that at group level peer relationship change was a significant predictor of attainment but that teacher relationship change was not. Given previous evidence linking teacher relationships to attainment in typically developing children (e.g. Cornelius-White, 2007; Hattie, 2009) and those with emotional and behavioural problems (Murray & Malmgren, 2005) the latter finding is a surprise. However, prior literature typically does not measure relationship change and so the comparison is limited. Given that levels of teacher relationships were surprisingly high throughout the project for children with BESD there are reasons to question how much potential there was for these relationships to change and how much these findings relate to prior research. The sample may have been unrepresentative, and the WOST may not have been a suitable measure of teacher relationships given the small number of items.

Despite such concerns, the results suggest that pupils with BESD in the Achievement for All initiative had better classroom relationships than one might expect and that peer relationship change and not teacher relationship change predicted final attainment. As discussed earlier, if pupils with BESD are generally more influenced for better or worse by peer relationship change this may be because teachers are more likely to compensate for poor relationships in the way they interact with pupils. Sabbir’s year five
teacher did not know him well enough to understand why he reacted disruptively to a spelling test but sought to understand the behaviour before reacting to it.

An alternative explanation may be that pupils with BESD are generally more sensitive to peers than teachers, but this seems unlikely. Among typically developing children, peer rejection is linked to decreased self-concept (Buhs, 2005) and disaffection from school (Malmberg & Little, 2007), but poor teacher relationships are also linked to similar outcomes (Reddy, et al., 2003) and among children with externalising difficulties pupil satisfaction with teacher relationships is associated with frequency of anxiety and conduct problems (Murray & Greenberg, 2001). Both Marcus and Sabbir reflect this and so neither prior research nor triangulating evidence seem to shed light on the finding of unequal academic relevance between teacher and pupil relationship change. Should the finding be replicated, explaining it would therefore open an interesting new channel for understanding relationship-learning association in this group.

The second prediction was that in cases where pupils' difficulties, such as communication problems, could reduce the potential academic impact of relationships the importance of the association might be weakened. Conversely, the third prediction was that in cases where relationships were of particular importance to problematic behaviour they would also be a greater influence on learning.

The case studies were well suited to test this dual principle, as there seemed to be one example of each BESD subtype suggested above. Sabbir’s difficulties were displayed by a tendency to provoke conflict or to be provoked by others and his lack of relationship with his father was suggested as the main cause. He was particularly sensitive to classroom relationships and yet his behaviour often put them under severe strain. This combination created problems for Sabbir, his teachers and his peers and
therefore a high number of relationship-learning mechanisms appeared to affect him in comparison to the other case study children. Thus the prediction that where relationships dictate behaviour strongly, they also have greater influence on learning was correct in the case of Sabbir.

Furthermore, Sabbir’s negative teacher relationship in year six seemed to have a greater impact on his learning than his fairly positive teacher relationship in year five, echoing Murray and Murray’s (2004) suggestion that teacher relationships influence classroom functioning more when the dynamic is negative. His mother’s suggestion during year five that peer relationships were the main determinant of his behaviour also chimes with prior research that suggested this correlation was present in the case of family adversity (Criss, et al., 2002).

Marcus was an example of a child who had the communicative difficulties that are associated with some children within the group (St Clair, et al., 2011). He had issues with both receptive and expressive communication and so does not relate to the suggestion that during the transition to secondary age expressive difficulties replace receptive difficulties as a predictor of behavioural problems (Ripley & Yuil, 2005). He also had difficulties with concentration and eyesight, although their extent was disputed. These factors reduced his ability to get help from peers and thus reduced the positive potential of peer relationships to influence achievement. However as Marcus was prone to distraction, and had some mischievous friends, their negative potential increased.

Marcus’ needs also combined to increase his dependency on and sensitivity to teachers and thus increased the potential for teacher relationships to influence learning both positively and negatively. However, similarly to Katie and Joanna, the impact of all relationships on Marcus’ learning in terms of attainment seemed to be reduced by his cognitive problems. Therefore while classroom relationships were probably less important for Marcus’
learning than Sabbir’s as a reflection of their different underlying issues, they continued to be of some relevance.

As both boys were in the ‘externalising’ subgroup having being categorised as ‘BESD’ following persistent disruptive behaviour, the investigation has not been able to shed light on how relationship-learning association might vary for ‘internalising’ children. This seems to be an important comparison for future research to investigate.

The literature review discussed internalising and externalising behaviours as delineators of possible subgroups within BESD, which may be useful, however both of these predominantly externalising boys also had problematic levels of anxiety that were directly linked to the onset of their externalising behaviour, implying that these constructs may not be accurate as bases of subgroups. More importantly for this thesis, both children received at times both the affective and the behavioural benefits associated with positive teacher relationships. The alleviation of externalising and internalising symptoms in this manner seemed to have academic importance as both improved pupil ability to engage with the lesson. Thus relationships are arguably of particular importance for children with BESD because some of the relationship-learning mechanisms implicated for them involve reduction of their symptomatic traits as defined in the Code of Practice (Department for Education and Skills, 2001).

Overall the findings support the suggestion that ‘BESD’ is a mixed group wherein the importance of relationships for learning and nature of that influence varies according to the fundamental problems faced by each child. This echoes Lewis and Norwich’s (2005) suggestion that practitioners must consider pupils’ individual needs at least as much as the profiles associated with their SEN category. Despite concerns about the sample and the instrument used, the quantitative evidence suggests that at group level the academic progress of these pupils may be more sensitive to peer
relationship change than teacher relationship change, which was not foreshadowed in the literature review and could be an interesting principle for researchers, practitioners and policymakers if replicated.

5.2.1.vi - Conclusion

Drawing the findings together, there are certainly reasons to suggest that classroom relationships are important to the education of children with BESD. They may be significant enough in certain cases for improvements to yield tangible academic benefits as suggested by the results of the multiple regression. However, the case studies serve to qualify those results in certain ways. Factors were in play for both children with BESD that implied that either the positive result for peer relationship change nor the negative result for teacher relationship change was likely to apply to them. It is thus too simplistic to say that peer relationships are important or that teacher relationships are not.

It is likely that the variety within the BESD category means that little or no relationship-learning associations apply at group level, with the possible exception of teacher relationships improving effectiveness of teacher support. While relationships can be powerful academic influences, they are not alone as such. It is likely that the constellation of academic predictors is varied within the group to the extent that the relevance of classroom relationships needs to be appraised on a case by case basis.

5.2.2 - Limitations

The reader will have noted during the course of this investigation that several limitations have emerged that have either restricted the scope of the research findings or suggested caution in interpreting them. Before the thesis concludes these issues will be summarised in terms of whether they
relate to the design of the study, the data that was collected or the analysis of the findings.

5.2.2.i - Design issues

Limitations to the design of the study exist both in the overall multimethod (Morse, 2003) approach and in its constituent components. The more specific issues regarding the components of the study essentially relate to data that was not collected and which may have proved useful in forming or testing tentative hypotheses. The broader issues concern the problems of legitimation (Onwuegbuzie, et al., 2011) that are inherent within mixed methods research whereby different forms of data are combined to form meta-inferences on a given topic.

The quantitative component of this enquiry has been able to test at group level whether or not changes to peer and teacher relationships can predict attainment at the end of that period of change. Other theoretically relevant predictors were included in the model in order to assess whether any relationship change prediction was independent of them and how strong each predictor appeared relative to one another. Although this was not the main purpose of this phase, there was also a possibility to examine whether or not there was interaction between any of the significant predictors interacted, that is whether or not they had any combined effects independent of their unique effects.

Firstly, the generalizability of phase one findings was compromised by the requirements of the analysis because pupils who did not have measures of classroom relationships and academic attainment at both timepoints were excluded from the analysis. Data attrition thus meant sample reductions of over forty per cent in both groups. However, the data screening protocol indicated that the remaining sample was satisfactory for multiple regression analysis and could provide results with adequate generalizability.
The strongest predictor by a considerable distance for both groups was baseline attainment, which accounted for more variation in final attainment than sum of all the other predictors. A limitation with this design is that the analysis would have been improved if more was known about why a pupil’s previous score was so strongly connected to their final score. For example, as the dataset contained a mixed age group one reason why children will be consistently scoring higher or lower than each other during the study is that they are in different year groups, so some of the predictive power of baseline attainment is likely to concern the age of the child. However, another reason for consistency could be their levels of cognitive ability remained fairly constant and influenced their capacity to acquire and demonstrate new knowledge. These suggestions have different implications for relationship-learning association and therefore the uncertainty arising from not measuring factors such as cognitive ability mean that this enquiry is less able to inform readers about what might moderate the impact of classroom relationship change on attainment.

The use of only one learning outcome, academic attainment reduced the scope of phase 1 to measure the relationship-learning association. The inclusion of alternative outcomes such as critical thinking would have provided a more comprehensive account of the association. Phase 2 was less specific and had this been true of phase 1 there would have been increased potential for meta-inferences from the combined evidence to address the main research question.

The quantitative analysis was also limited in its explanatory capacity because there were not enough timepoints in order to test out putative theories regarding a relationship-learning association that was mediated by other factors such as behaviour or attendance. This would require measures of potential mediators and academic attainment that are taken after the period of relationship change. The simultaneous measurement of
potential mediators does not allow the opportunity to assess whether they are altered by relationship change and if any such change influences attainment. In this way the design of the quantitative phase means that it is unable to provide a analysis of possible mediated relationship-learning association.

Case studies were largely informed by semi-structured interviews as this was well suited to the more inductive approach intended during this phase. However, the case studies could have been improved by greater amounts of classroom observation or by using more specific tools alongside the interviews, such as sociometric measures (Rotheram-Fuller, et al., 2010) or indicators of the various motivational constructs such as self-efficacy (Freeman, 2012) that have been suggested as possible relationship-learning mediators (Martin & Dowson, 2009). The inductively motivated reliance on more participant-generated case study data thus limits the capacity of the researcher to test putative mediated mechanisms or to relate more concretely to prior literature.

Finally, the conclusions of the overall investigation are limited by the inherent difficulties in combining quantitative and qualitative data because this requires a synthesis of information types that reflect different epistemological assumptions and different samples (Onwuegbuzie, et al., 2011). In other words, to some extent phases one and two are rendered less able to relate to one another by the fact that phase one tested an a priori hypothesis, which was that relationship change would predict attainment, on a group level whereas phase two gathered information that was specific to individuals and was not designed to test any pre-conceived idea. Although findings on the individual level can illuminate findings at group level by giving an indication of how the relationship-learning association is affected by the myriad of contextual factors, they are unable to directly address group level findings. Therefore while the meta-inferences drawn from the data overall may be worthy of attention, they
cannot explain the particularities of each phase such as why peer relationship change predicted attainment for children with BESD but teacher relationship change did not.

5.2.2.ii - Data issues

The theme of working within the constraints of data collected for the AfA evaluation (2011) was also apparent in the methodology and continues in this section. The point relates to both phases of this investigation as this situation necessitated various compromises in terms of the data collected.

Other studies in this area have used more detailed measurements of classroom relationships, for example breaking them down into domains such as trust (Van Maele & Van Houtte, 2011) or dependency (Hamre & Pianta, 2001). However the WOST (Humphrey, et al., 2011) was not created for such a specific purpose and therefore was a less sensitive instrument that scored classroom relationships on a positive-negative scale. Furthermore to obtain distinct measures for peer and teacher relationship change the scale was split, meaning that the teacher measure contained only two items. Although the confirmatory factor analysis and psychometric properties of the revised scales were satisfactory, there are grounds to question their validity and usefulness relative to other measures. This is exacerbated by the likelihood of many cases whereby a different member of staff rated a given pupil’s classroom relationships and behaviour problems on the WOST in the second year of the study, which reduces the reliability of relationship change scores.

The case study also revealed that there might be aspects of classroom relationships that any exclusively pupil-level survey will miss. In this case, both girls with ASD were in classes where peer relationships in the class as
a whole were supportive, which was seen as more important than individual relationships or friendship.

As all schools within the sample were part of the AfA initiative it must be described as purposive, which again suggests caution in generalising from these findings. For example, although they fared less well than most other SEND groups surveyed (Humphrey, et al., 2011) the ASD group had surprisingly high levels of positive classroom relationships. There were also unbalanced proportions of participants in terms of categorical variables such as gender, which compromised the analysis whereas other studies can select their sample according to analytical requirements (e.g. Reynolds, et al., 2012).

The concern about a second staff member completing the second measure also applies to the measurements of academic progress in the second year of the study. As discussed previously, the use of teacher-rated measures of academic attainment rather than standardised assessments may also be considered as a limitation of this enquiry as there is likely to be reduced consistency of scoring across the sample. Another concern about teacher grades is that they are often normally distributed within class groups and thus are not comparable between classes (Trautwein & Koller, 2003). As this study does not use classes as the unit of analysis this issue is arguably less problematic to the findings. Finally on this topic, it is suggested that teacher grades are more sensitive to increases in pupil effort (Keith et al., 1993). This arguably adds to the suggestion that such measures are more subjective and thus less reliable than standardised equivalents. However, throughout the AfA pilot schools were using a common framework to make their judgements (Department for Children Schools and Families, 2008) which should have standardised scores to a certain extent.

A related concern is that a recent meta-analysis (Roorda, et al., 2011) showed that studies where the same staff member completed measures for
classroom relationships and learning outcomes the correlations between the two were higher. As the researcher is not aware of which staff members completed which measure, the scope of this potential confound cannot be assessed.

Qualitative evidence is also subject to concerns regarding sampling as not only were they drawn from the potentially unrepresentative AfA sample but the case study schools were chosen in each region on the partial basis of advice from local AfA officials. This guidance was in terms of school helpfulness but officials may have also sought to bring positive examples into the spotlight. A similar principle applies to the case study children who were also partly selected based on school advice. However, this is a lesser concern for case study data, which is intended to be representative of the individual case rather than generalisable to any group.

This aspect of data collection was also limited by constraints on researcher time in the schools, meaning that there was no scope for observations designed specifically for this investigation. As discussed before, the interviews were also undertaken for the evaluation and thus the majority of the topics were not contributing to this thesis. While some of this material provided useful context for the emerging view of relationship-learning association, the breadth and depth that could be covered in terms of relationships and learning was reduced.

Finally the reader will have noted the gender composition of the case studies, which may be of particular importance to the ASD cases as research has suggested that more boys than girls are identified as having ASD and that girls may have a different presentation of ASD than boys (Attwood, 2007). A more balanced case study group would have been favourable, but given the emphasis on representativeness over generalisability in phase 2 this does not seem to be a fundamental issue.
5.2.2.iii - Analytical issues

As mentioned above the sample was uneven in terms of the categorical variables used as additional predictors. This included gender, free school meal eligibility and language status (whether or not a child’s first language is English) and reduced the chance of them being significant predictors of attainment (Tabachnick & Fidell, 2007). Combined with the absence of other possibly relevant predictors such as cognitive ability measures (e.g. Yen, et al., 2004) and small number of timepoints discussed in the design section, this shortcoming meant that the quantitative enquiry was relatively unable to provide information about the factors that mediated or moderated the association between relationships and learning. Although this component was not designed for those purposes, the inability to extend the analysis to these topics reduces the potential of meta-analysis to the general question rather than the nature of the relationship-learning association or the factors that affect it. One advantage of keeping meta-inferences at a broader level however may be that there is less temptation for the researcher to make invalid meta inferences if each subquestion is essentially answered by one dominant data type.

The use of case study data to answer subquestions two and three means that findings regarding the nature of the relationship-learning association or the factors that affect it are representative but not generalisable. This compromise was made at the point of design and, as explained in the methodology, was deemed worthwhile given the relative lack of specific relationship-learning literature about children with BESD and ASD. Having indicated some relationship-learning mechanisms at individual level, this study could serve as the basis of a more deductive group level investigation for these groups. At this point it is unclear how relevant the discussion of mechanisms or influential factors is outside of the case studies, although certain mechanisms did occur in all four cases.
More time observing would have enabled the researcher to cross-reference interview data with observations of factors like class group or teacher traits. This would have been a useful triangulation, improving ‘inside-outside legitimation’ (Onwuegbuzie, et al., 2011) whereby insider and observer views are used to complement one another. The final limitation to the qualitative analysis is that the inclusion of multiple case studies restricts the extent to which any one case is represented by the research findings. Again, this is a sacrifice made at design level intended to maximise the ability of the thesis to generate inductive data regarding relationship-learning mechanisms and the factors influencing them.

Finally, there are certain limitations innate to any mixed methods research relating to the difficulty of drawing together different data types with different epistemological assumptions, as discussed in the ‘legitimation’ section of the methodology. While of fundamental importance, it is argued that in the case of this enquiry the legitimation concerns have been addressed. By allowing each subquestion to be answered by a particular data type before drawing meta-inferences at a general level, the potential for problems of sample integration or paradigmatic mixing are reduced. The concern that one form of data collection might reduce the naturalistic validity of the other was pertinent to this study as teachers completed surveys before the case study visits. However, the threat seems limited given that there were multiple visits, that the topics covered in the survey and interview were related but not the same, and that school staff were already likely to be have been exposed to AfA documentation regarding the same topics. Instead, readers should be aware that the entire thesis is situated in schools whereby discourse regarding teaching children SEN and classroom relationships may have been heightened.
5.2.2.iv - Conclusion

Many of the limitations discussed here imply that the generalizability of this investigation may be compromised by the circumstances of the AfA initiative. These findings thus need to be tested by subsequent researchers in alternative contexts. Similarly, the use of data collected for the AfA evaluation has in some cases reduced the ability of the researcher to cross-reference findings emerging from the interviews. There are several ways in which data from an alternative design could have strengthened the analysis, although these were not all foreseeable at the start of the project. Despite its limitations, the study has arguably been able to provide answers to the research question and the subquestions that make a useful contribution to knowledge, and the implications of the limitations discussed here for the design of future studies in this field add to this contribution.
5.2.3 - Contribution to knowledge

This has been the first study to examine the relationship-learning association among children with ASD and BESD in a way that can elucidate understanding of how it applies in context at individual level and in predicting attainment at group level. As children in both groups tend to have poorer educational outcomes than typically developing peers and often have difficulties that impact upon classroom relationships, extending the relationship-learning association literature more concretely into this area potentially makes a significant theoretical contribution that may help to inform school and individual level provision. The thesis concludes with a presentation of the contribution that it has made to knowledge in terms of overall illuminative insights and more detailed implications for method, theory, future research and practice. Although they are separated for clarity, these areas are strongly interconnected and there are necessarily some points of overlap between them. Finally, this section is summarised with a brief conclusion containing the key findings of this project.

5.2.3.i - Illuminative insights

This brief subsection will present a list the headline findings from this research.

1. Improvements in the peer or teacher relationships of pupils with ASD are unlikely to lead directly to increases in teacher-rated academic attainment.
2. Improvements in peer relationships of pupils with BESD may lead directly to increases in teacher rated academic attainment.
3. Improvements in the teacher relationships of pupils with BESD are unlikely to lead directly to increases in teacher-rated academic attainment.
4. Case study data suggests that the above statements may not fully capture the relationship-learning association for these groups as
participants felt that a link was present in cases where relationships were relatively good but academic progress was slow.

5. The interaction between relationship-learning association and difficulties with learning may be that those difficulties act firstly to increase the importance of classroom relationships due to increased need for teacher attention and specific pedagogy or greater likelihood of experiencing relationships to be negative and reacting to them and yet also secondly to reduce the direct, quantifiable ‘knock-on’ academic benefit of classroom relationship change (relative to typically developing children).

6. For both sets of children, good pupil-teacher relationships may improve a teacher’s capacity to understand a pupil’s academic, social and emotional needs and thus enhance the appropriateness of their pedagogy and the quality of their inclusive provision more broadly.

7. For both sets of children, good pupil-teacher relationships may improve a child’s willingness to engage with that staff member and thus their capacity to make use of learning opportunities.

8. For children with ASD, respectful peer relationships overall within a class group may have more significance to learning and well-being than individual friendships in that they help pupils to feel able to participate in lessons despite awareness of knowing less than others.

9. For children with ASD, supportive relationships with teachers and classroom assistants may be particularly important in reducing anxiety and enabling pupils to be in the right affective state for learning.

10. For children with BESD, positive teacher relationships may be particularly important in reducing the level of externalising behaviour displayed by students and thus enhancing their engagement with lessons.

11. For children with BESD, poor classroom relationships may hinder learning more than good classroom relationships enhance it.
Taken as a whole, these illuminative insights form a substantial contribution to knowledge which, if helpfully distributed beyond this text, may be of relevance to children with ASD and BESD, their schools and families. By expanding the relationship-learning literature to these pupil groups the thesis also provides important critique to existing theories that have been developed in research among typically developing children. The thesis has sought to ask how differences between pupils at group or individual level might change the importance and the mechanism of any relationship-learning association and found that traits associated with these groups may simultaneously make the association weaker in its most specific sense and yet perhaps greater from the perspective of the children and those around them. This complex finding challenges the simple notion of relationship-learning association as something which can be readily measured and arguably even questions what this researcher initially defined as ‘learning’.

In terms of the literature around ASD and BESD, this investigation makes the contribution of introducing an established body of research to the groups and making a start in terms of interpreting what relationship-learning association might mean theoretically and practically for these children. Other than in terms of peer relationships for children with BESD it does not suggest that interventions to improve relationships might directly improve attainment but it does begin to explore the ways in which pupils, teachers and parents think that these relationships impact on learning. In general, participants have felt quite strongly that relationships do make a real difference even where a quantitative view of that particular case might not have shown it.

5.2.3.ii - Methodological implications

Some of the methodological implications build on the limitations section, although other aspects of the investigation could be an appropriate
template for future studies. For example, adoption of a mixed method approach seems to be justified in this area by the complexity of investigating the relationship-learning association. The conclusions that either phase of the investigation might have led to independently could have been misleading relative to the meta-inferences made on the basis of both phases. The quantitative data may have led to a conclusion that relationships were less important for the learning of children with ASD than they appeared to be in the case studies whereas case study evidence alone might have resulted in the prediction that further research might reveal relationship change having a significant impact on attainment. The combined findings arguably give a more nuanced picture whereby classroom relationships can play an influential role in learning and yet may not predict attainment.

Given this complexity, it seems that quantitative studies need to make several adaptations to the approach used here in order to better understand whether and how relationship-learning association exists at group level for children with ASD and BESD. More timepoints are required to identify any mediated mechanisms. More additional predictor variables are needed to provide more detail regarding factors that may interact with the association. Alternative learning outcomes such as the more holistic measures used by Cornelius-White (2007) would give a broader account of the relationship-learning association. Instruments to measure classroom relationships should also be more extensive and focus on some of the emergent findings from the case study such as the group relational dynamic in the class.

Regarding children with ASD, investigation of their mental processes at individual level seems to require more than interviews as they appear relatively difficult to see and understand, both for others around the children and the children themselves. In interviews it is all too easy to project mainstream, non-ASD mental norms or ASD stereotypes to fill the void in knowing whether or not concepts such as self-efficacy (Bandura, 1997)
apply. Prior studies (Bauminger & Kasari, 2000; Bauminger, et al., 2003) have made advances in this area with children who have high-functioning autism, but alternative tools would be needed for other pupils with ASD.

Although teachers seemed to find it easier to understand the mental processes of pupils with BESD, the principle of interviews being unsuitable to give a full account of the constructs implicated in certain mediated mechanisms still applies. For example, self-efficacy would be more satisfactorily incorporated into a study by applying the tools which have been developed specifically to measure it (Schunk & Pajares, 2002). Attempts to do so based on interview data can only be speculative.

5.2.3.iii - Theoretical implications

Theoretical implications are split into the areas of relationship-learning association, ASD and BESD and will be presented in this order. In terms of the relationship-learning association, this study has demonstrated that several different mechanisms can apply to one pupil and that they can act as both positive and negative forces on education. Direct and mediated-affective mechanisms do not seem to require pupils to be particularly cognizant of relationships or their emotional state in order to be influential, whereas there may be an implication that mediated-motivational mechanisms require a level of abstraction and self awareness. However this finding requires further and more comprehensive evidence due to the inappropriateness of interviews for measuring such processes.

Building on Norwich and Lewis’ (2005) emphasis of pupils with SEND tending to have more individual-level than group-level needs, case study data suggests that the direct mechanism could be seen as universal because any factor which compromises attainment and may reduce the relationship-learning association in terms of predicting attainment is also likely to increase the importance of the teacher understanding the pupil and
possibly the pupil trusting the teacher. If the extent of individual needs is linked to the importance of the direct mechanism for this reason, the implication is that the mechanism may often be more important for children with SEND than those without.

Some level of mediated association along the lines proposed by humanists (Cornelius-White, 2007; Maslow, 1970; Rogers, 1951) also seems as though it may occur despite severe impairments in emotional and social understanding. Therefore it may be relevant to many children including those with more severe ASD (Cashin & Barker, 2009) like Katie, although the range of mediated educational effects in response to relationship is probably reduced for these children and may not include motivational gains.

Finally, it might be suggested that some of the phenomena referred to in this study as ‘mediating factors’ could also be seen as learning outcomes in themselves, such as learning to trust others or to express ideas, or developing the capacity to focus despite anxious tendencies. Such skills remain relevant after education and thus are also important outcomes. To an extent this suggestion chimes with the large body of research and interventions around social and emotional learning (e.g. Durlak, et al., 2011) and the tradition of more holistic views of learning (e.g. Cornelius-White, 2007).

In terms of children with ASD, despite the possible non-relevance of mediated-motivational mechanisms the case studies demonstrate that there may be stronger relationship-learning association than might be predicted by those who suggest that these children tend to desire aloneness (e.g. J. Scott, et al., 2000). Although the relevant pupil scores were not available to the researcher, it is highly unlikely that either case study child was at the ‘high functioning’ end of the autism spectrum and so to relate fully to children with ASD further case studies are needed. If this subgroup are more capable of abstraction (Cashin & Barker, 2009) than others with ASD,
it is plausible that additional relationship-learning mechanisms might apply. However, as fairly similar relationship-learning mechanisms and factors influencing them were implicated for Katie and Joanna despite a substantial difference in the severity of their impairments, the theoretical implication is that the nature of such difficulties could be more important than their extent. If replicated, this would suggest that aspects of relationship-learning association may apply at group level for children with ASD.

Improvements in pupil affect and functioning in response to teacher relationships despite limited relational awareness suggest that the importance of these relationships to the education of children with ASD may currently be underestimated in terms of research focus and the development of interventions. Both girls were said to be less anxious in response to these relationships, which is a noted issue for this group (Spiker, et al., 2012). However both children also had limited relational and academic competence as expected and the group level finding that neither form of relationship change predicted attainment could plausibly have applied to them, because despite largely positive classroom relationships they made little academic progress.

Four other findings relating to existing ASD theory emerged from the study. Katie and Joanna’s increased tendency to initiate social interactions when they trust a peer or teacher hints at the possibility that they do seek company and possibly relationship (Biklen, 2005), although confirmation of this requires a method to assess the extent to which the motivation behind the initiations is social or related to another objective. Support was provided for the positions that individually delegated assistants for children with ASD may facilitate other classroom relationships as well as hamper them (Hemmingsson, et al., 2003) and that these assistants do not necessarily need formal training as each child with ASD is different (Symes & Humphrey, 2011). Finally, there was confirmation of the proposal (Jones & Frederickson, 2010) that typically developing children can make
allowances for children with ASD, ignoring traits that would otherwise lead to social rejection.

Theoretical implications of this study for the BESD group are more delineated by the research questions as there are fewer leads to follow from previous research. During the literature review it was mooted that some children with BESD might be more sensitive to classroom relationships than typically developing children. Although such a comparison was not made here, the relationship-learning association did seem particularly strong in one case study and peer relationship change was a stronger predictor of attainment in the group overall than other factors with established connections to attainment such as attendance (Gottfried, 2010) and only marginally weaker as a predictor than behaviour problems which are also a well established correlate of attainment (Buhs, et al., 2006) and a prevalent issue in this group (Department for Education and Skills, 2001).

For the pupil who seemed more sensitive to classroom relationships, peer relationships became a positive factor where they had been largely negative following a ‘circle of friends’ (Frederickson, Warren, & Turner, 2005) intervention. This success implies that the notion of pupils making social allowances where they understand that a child is different (Jones & Frederickson, 2010) could also apply to pupils with BESD and may be enhanced by well targeted interventions. There is also evidence favouring suggestions that peer support can be a protective factor against behavioural problems in cases where a pupil is exposed to family adversity (Criss, et al., 2002). However, there was also some support for the suggestion that the link between teacher relationships and classroom functioning is strongest when the dynamic is negative (Murray & Murray, 2004) and in this case one may surmise from developments over the two years of the study that the increased pertinence of classroom relationships generally increased their negative potential more than their positive potential.
In the case where relationships were not the main behavioural issue, they still had an impact on behaviour and classroom functioning, again reducing anxiety which has also been implicated as a common issue for children in this group (e.g. Murray & Greenberg, 2001). By reducing anxiety and disruptive behaviour, classroom relationships are not only improving ability to access teaching but are reducing core symptoms of BESD both in terms of externalising and internalising behaviour problems (Department for Education and Skills, 2001), which suggests that the relationship-learning association could be more important for children with BESD than typically developing peers. This might also apply at group level but the data available cannot support such a claim. To extend the theoretical contribution to the BESD group more fully, a comparison also needs to be made with a case study child who has predominantly internalising behavioural difficulties as neither case was in that subgroup.

A surprising finding with the BESD group was that teacher relationship change was not a significant predictor of attainment and peer relationship change was. If this does not reflect the methodological issues discussed there are several theoretical explanations, although at this stage they are only speculative. Prior research has suggested that teacher relationships and attainment can be correlated but that this relationship is mediated by previous attainment (Hamre & Pianta, 2001) and so will not be a statistically significant predictor if previous attainment is also a predictor. If this applied to teacher relationship change for pupils with BESD the implication would be that low-achieving students’ academic performance is less connected to teacher relationships than other pupils. This would make sense in that additional factors are likely to be acting upon their attainment negatively, but does not explain the discrepancy with peer relationship change.

Alternatively, it may be that teacher relationships are more conditional on attainment (Newberry, 2010) than peer relationships and so teacher
relationship change cannot predict attainment (Van Maele & Van Houtte, 2011). If the trend of peer relationship change being a stronger academic predictor than teacher relationship change is replicated, teasing out its theoretical implications will require a far more detailed set of variables, for example teacher traits and attitudes which have been found to impact on all classroom relationships (Bierman, 2011) and may thus influence the relationship-learning association.

5.2.3.iv - Implications for future research
Aside from the need to replicate the key findings from this research, the majority of implications for future studies concern avenues for refining or extending the understanding of relationship-learning association for pupils with ASD and BESD. Additionally some suggestions are made on the basis of the findings within this thesis that do not relate specifically to relationship-learning association, such as the social allowances peers can make for pupils in these groups.

It is argued here that all findings need to be tested against future research, whether or not a faithful replication is possible or desirable. Given the limitations regarding the data that has been used in this enquiry, this is an important principle for these particular findings. Most specifically, this investigation is situated within the context of the AfA initiative (see appendix 1 for further details including explanation of independent contribution) and thus practitioners and theorists will be able to place more confidence in its suggestions if similar patterns are discovered among children whose schools are not participating in AfA or a similar project. For example, the suggestion that peer relationship change can make a statistically significant contribution to predicting academic attainment for children with BESD needs to be tested with a different sample to see if the association varies outside of the AfA context. Without the constraints of the AfA evaluation, future research will also be able to avoid issues that may have compromised
this thesis such as the procedure within the evaluation of giving school-level feedback on the basis of teacher survey responses.

Refining and extending these findings is largely about addressing the limitations of this thesis in terms of the data that was not collected and which measure concepts that over the course of the analysis have emerged as important directions for expanding this area. Firstly, more in-depth case studies with classroom observations and measures of motivational constructs implicated in the relationship-learning association (Martin & Dowson, 2009) would add precision to the account of the association and improve the practical applicability of the theory that is developing around relationship-learning mechanisms. To expand the scope of this field, future case studies should also include children with different characteristics such as children with ASD whose classroom relationships are less positive, or who are in the high-functioning subgroup, or children with BESD who have predominantly internalising behavioural difficulties.

A quantitative investigation with more timepoints and measures of potentially influential factors such as motivational constructs or cognitive abilities would be an important step forward. This would give further information about mediating factors and therefore relationship-learning mechanisms that may be occurring at group level, as well as more precisely which factors act to reduce or increase the relationship learning association. Future studies would also benefit from using a larger ASD sample and selecting cases to give more balanced proportions in terms of categorical variables such as gender.

As well as the recommendations above, which are aimed directly at refining and expanding concepts of the association, there are also improvements that future research could make to the measurement of relationship and learning individually. In terms of classroom relationships, sociometric instruments (Rotheram-Fuller, et al., 2010) or a more detailed quantitative
tool that monitors different domains of classroom relationships (e.g. Jerome, et al., 2009) could be incorporated. By gaining a more sophisticated understanding of relationships and one that is methodologically comparable to previous studies, researchers will be able to hone the findings of this thesis by increasing clarity about which aspects of classroom relationships have an influence on learning.

Refinements can also be made in the measurement of ‘learning’, particularly in quantitative terms where this investigation used attainment as the sole outcome. If a more holistic view of education is adopted, in line with the Every Child Matters agenda (Department for Education and Skills, 2003) future researchers interested in the relationship-learning association could add learning outcomes similar to those used in Cornelius-White’s (2007) meta-analysis such as creative and critical thinking. Again, a more nuanced account of learning outcomes will improve upon the conclusions of this thesis by broadening understanding of which aspects of learning might be influenced by relationships.

The difficulty in interpreting the theoretical implication of teacher relationship change seeming less important to attainment than peer relationship change suggests that further work is needed should the pattern be replicated. For example, the putative explanation that the teacher relationship-learning association can be bi-directional (Veronneau, et al., 2010) because teachers prefer students who are easier to teach (Van Maele & Van Houtte, 2011) and thus relationship change is unlikely to happen before a notable increase in achievement seems strongly contradicted by the case studies wherein teachers formed bonds in spite of pupils’ low attainment and the difficulty of teaching them. Future research could inquire whether teachers might, like pupils (Jones & Frederickson, 2010), be inclined to make social allowances for pupils in these groups. Were that to be the case, it would be useful to know what factors were associated with teacher willingness to make allowances. However, this would leave the non-significance of teacher
relationship change as a predictor of attainment in these groups unexplained. A more comprehensive analysis of potential mediating and moderating factors on the association may also help to shed light on the finding.

As this thesis was motivated by the desire to inform practical application of the relationship-learning association amongst children with BESD and ASD future research in the area must move towards the development of relationship interventions for these children or testing existing interventions such as rtime (Hampton, et al., 2010) or circle of friends (James & Leyden, 2010) with these groups and monitoring the impact that they have not only on relationships but on learning outcomes and the mediating factors implicated in this study.

In terms of developing new interventions, it would be helpful if future research was able to discover what facilitates typically developing peers making social allowances (Jones & Frederickson, 2010) for children with ASD and BESD. Joanna’s case implies that future researchers should consider teacher relationships and teacher class management traits as potential antecedents of such peer allowances. From the existing literature (e.g. Williams, et al., 2005), there seem to be fewer interventions aimed at improving teacher relationships than peer relationships and so this may also be an important angle for future enquiries.

Finally, some of the unexpected findings in this thesis regarding ASD could prompt exploration. Firstly, it would be helpful for educators to know more about why in some cases, as with Katie, individually deployed assistants help their pupil to build other classroom relationships, but in others they are perceived as a barrier (Hemmingsson, et al., 2003). Researchers might consider evaluating the importance of teacher training or prior ASD experience versus pupil traits or situational factors such as how interactions with others are managed or facilitated. Secondly, the apparent willingness
of pupils with ASD to initiate interactions with others after trust is established also needs refinement in terms of clarifying what facilitated this and whether they were motivated by the interaction or another objective such as an activity.

5.2.3.v - Practical implications

Practical implications are presented on two levels. The first is general and the second relates to more specific implications including those that may only concern certain pupils with ASD or BESD. The overall practical implication of this research is that while SEN vary between individuals (Lewis & Norwich, 2005) in the ASD and BESD groups and may act to reduce the relationship-learning association in terms of relationship change predicting attainment, they may increase the academic salience of classroom relationships in other ways. Therefore planning educational provision for these children would benefit from considering the status of their classroom relationships and taking action if necessary. This approach may not only benefit pupil well-being but also their academic prospects. Although many other factors contribute to learning, as demonstrated by the strong predictive effect of baseline attainment on final attainment, the range of ways in which classroom relationships can impact the process in spite of or because of such additional factors suggests that schools and teachers who do not reflect on the relationship-learning association may be well-advised to do so.

For children in both groups, teacher relationships may be linked to the effectiveness of teaching interactions in terms of conceptualisation, transmission and reception of support. Positive teacher relationships may also lead to improved pupil affect and classroom functioning. Peer relationships were rendered less important as direct learning resources by the social and academic difficulties of case study pupils but also had an important role for pupil affect and classroom functioning.
However, the relationship-learning association may not be strong enough for improvements in classroom relationships to have an impact on attainment for children with ASD. Teacher relationship change was unable to predict attainment for pupils with BESD, although peer relationship change did emerge as a significant predictor. Classroom relationship interventions cannot thus be recommended on the grounds of ‘knock-on’ academic benefits for pupils in these groups as was mooted in the introduction other than in the case of peer relationships for pupils with BESD. While this requires replication, results suggest that the association may be strong enough in this case for improvements to peer relationships to have a tangible academic benefit.

Among children with BESD, there may also be links between classroom relationships and both academic and general motivation, although this has not been proven directly here. Children in the group with relationship difficulties may be more sensitive to relationship-learning association, particularly in terms of negative mechanisms, for example poor teacher relationship leading to pupil unwillingness to accept help. Where difficulties are exacerbated by a teacher trait such as emotional volatility, interventions may prove less effective unless that trait can be influenced. In terms of this particular case study, it is unfortunate that the pupil and teacher were paired in year six after a fractious relationship in year four. The extent of relationship-learning association may be strong enough for some children in this group to justify moving children to different teachers if the relationship breaks down.

Those in the BESD group whose difficulties are not predominantly relational may still be affected by classroom relationships as the case studies suggest that they can alleviate issues that are commonly associated with the group such as anxiety or disruptive behaviour. However, children with BESD are likely to have fewer group-level needs than those with ASD due to the
heterogeneity within the category (Department for Education and Skills, 2001). This limits the practical implications of these findings at group level. However, classroom relationships are likely to be academically influential in some way to most children with BESD given the extent of the association in terms of peer relationship change predicting attainment and the broad range of mechanisms implicated in the case studies.

Children with ASD appear to have more factors limiting the relationship-learning association. In practice, although communication problems or a gap in academic understanding arguably make peer relationships less important as a direct learning resource, the increased requirement on teacher understanding means that difficulties associated with ASD also make teacher relationships more important. There are additional effects of teacher relationships that have implications for practice, such as the suggestion that although an individual needs assistant in one case monopolised the pupil’s classroom interactions she was perceived to improve other classroom relationships as the additional interactions were more positive in her presence than they were otherwise.

The manner in which classroom relationships were useful for children with ASD was consistent between the two cases despite differences in the extent of social, communicative and learning difficulties. If replicated, this implies that the findings could be applicable at group level despite individual differences in severity of impairment. In this way, the practical implications of this research may have a broader reach for children with ASD than those with BESD.

5.2.3.vi - Conclusion

This investigation has expanded the field of relationship-learning association to specifically include two groups of disadvantaged pupils (Department for
Education and Skills, 2001). For different reasons prior literature gave cause for concern regarding the status of classroom relationships and learning outcomes among these groups. Other research suggested reasons to doubt the importance of the relationship-learning association given other traits associated with ASD and BESD. The expansion of the field to these groups thus had the potential to make a contribution that was theoretically rich in terms of viewing the association set against other powerful educational influences, and practically pertinent in terms of questioning where and how much relationships can make a difference to learning for children who may be at particular risk of low attainment.

Because there are multiple mechanisms through which relationships can influence learning, it appears that other forces influencing the education of these children, such as communication difficulties, can simultaneously make classroom relationships less directly linked to attainment and yet more crucial to the learning process. Therefore although the study did not generally find ‘knock-on’ academic benefits accruing from relationship change at group level, it implies that for most if not all individual pupils in these groups there will be ways in which classroom relationships can enhance their learning.

In terms of the wider context of how to successfully include pupils with ASD and BESD in mainstream schools, the conclusion of this study is that classroom relationships are not only an ‘inclusion outcome’ as an indicator of social inclusion, they may also represent a key conduit to inclusive teaching through direct and mediated mechanisms.

A challenge remains for future researchers to expand this early step in mapping out relationship-learning association among these groups to provide a more detailed evidence base for interventions. While relationship-learning mechanisms draw on individual-level factors, there are early
indications that certain mechanisms could apply to most children and thus form the basis of more systemic initiatives.


Cullen, K., & Monroe, J. (2010). Using positive relationships to engage the disengaged: An educational psychologist-initiated project involving professional sports input to a pupil referral unit. Educational and Child Psychology, 27(1), 64-78.


disorders (ASD) in mainstream secondary schools. *British Journal of Special Education*, 38(2), 57-64.


Wigfield, A., & Tonks, S. (2002). Adolescent's expectancies for success and achievement task values during the middle and high school years. In F. Pajares & T. C. Urdan (Eds.), Academic motivation of adolescents (pp. 53-82). Greenwich, CT: Information Age.


Appendices

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Appendix 1 - Fieldwork context: Achievement for All

As acknowledged in the introduction, this project makes use of data collected by the researcher and colleagues as part of another enquiry. A research team from the University of Manchester (Humphrey, et al., 2011) evaluated a national initiative to improve various outcomes for pupils with special educational needs and disabilities (SEND) on behalf of the Department for Children, Schools and Families (DCSF), now the Department for Education (DfE). As this is the origin of all data collected, it is necessary to explain what the initiative was, how the team evaluated it, and why this thesis is an independent, original contribution to knowledge.

The Achievement for All initiative

The Achievement for All (AfA) pilot was launched by the DCSF in 2009 in response to mounting concerns in the UK and elsewhere about a range of outcomes for children categorised as having SEND. For example, the Lamb Inquiry (Department for Children Schools and Families, 2009b) concluded that pupils with SEND were frequently not given enough attention and challenge, while their parents were often inadequately supported by schools. AfA sought to publicise the plight of children with SEND and to encourage schools and the local authorities which supervise them to prioritise these children by attempting various interventions and assisting with collection of data to measure their impact. Following this process, AfA has been made available for schools to opt in to across England and Wales.

The AfA pilot was conducted between September 2009 and July 2011 with a group of children intended to be reasonably representative of the population of children with SEND within English state schools. As such it targeted children in all SEND categories within year groups 1, 5, 7 and 10 in 454 schools from 10 local authorities. Within each local authority an AfA lead was appointed to supervise the implementation of the project in their
group of schools, which included primary, secondary and special schools and Pupil Referral Units. To improve representativeness, the authorities selected comprised a mix of urban and rural areas, northern and southern, affluent and deprived, ethnically diverse and homogenous and so on.

Figure X: AfA logo used by DCSF in guidance for schools (Department for Children Schools and Families, 2009a)

The initiative comprised three strands as illustrated above. The first was concerned with academic progress. Schools were required to use the ‘Assessing Pupil Progress’ framework (Department for Children Schools and Families, 2008) to score each child and serve as a guide for school selection of individual, class and whole-school interventions. During each term of the project schools sent this academic data to their local authorities, and provided them documents regarding their selected interventions. Relative to the average school, pupils in this sample are thus likely to have had more academic support, which arguably reduces the generalisability of the findings of the thesis. However, the extent of this is unclear as many
schools commented to the research team that they may have tried similar interventions without AfA.

Strand two was the only part of AfA to involve a mandatory intervention across all schools. To improve parental engagement, teachers were asked to hold termly meetings with parents that followed a particular protocol or technique known as the ‘structured conversation’ whereby teachers sought to gather parent input about their child or what they felt needed to be done for them at school before jointly planning school and home targets for the child.

The third strand asked schools to target interventions to two of the following five areas according to their understanding of what their pupils needed:

1. Behavioural problems
2. Classroom relationships
3. Bullying
4. Participation in extra-curricular activities
5. Attendance

Each participating school was allocated additional funding in return for participating in the initiative. This funding was administered by local authorities and in several cases was withdrawn for inadequate implementation. Despite the efforts and powers of local authorities it also emerged that there was a wide range of fidelity to the initiative, which had implications for its effectiveness and for data collection (Humphrey, et al., 2011). This patchy implementation arguably reduces the generalisability concern in terms of schools operating differently from ‘normal’, but there is also likely to be a trend towards more data collection from the more willing schools.

*The Achievement for All evaluation*
The DCSF appointed the University of Manchester to provide a formal and independent evaluation of AfA (Humphrey, et al., 2011). This evaluation assessed the impact of AfA on the outcomes that it was intended to improve and identified effective practices at local authority, school and classroom level. The question of impact was addressed quantitatively, by making use of the academic and attendance data already being collected from schools and administering pupil-level surveys to parents and teachers measuring behavioural problems, bullying, classroom relationships, parental engagement and participation in extra-curricular activities (latter two outcomes not part of teacher survey) in January 2010, January 2011 and June 2011. Analyses examined impact longitudinally and in comparison to children in a reference group of non-AfA schools.

Effective processes and practices were largely explored through interviews with all stakeholders in the initiative. This included recruiting a group of 20 case study schools, 2 per local authority and visiting each school 5 times to get an in-depth understanding of progress and challenges faced in implementing AfA.

*Independence of this thesis from the evaluation*

This project has two clear differences from the AfA evaluation. The evaluation did not refer to the relationship-learning association despite measuring and reporting them both individually. The evaluation also included all children with SEND whereas this project focuses on those with ASD and BESD.

As this thesis only includes these groups, it has a smaller quantitative sample. This was connected to the decision not to use parent survey data, as the number of parents within the smaller ASD category that completed the survey at two timepoints would not have produced a satisfactory sample
for the analysis. Unlike the evaluation, phase 1 involved splitting the classroom relationship scale of the teacher survey into teacher and peer relationship scales.

Phase 2 also focussed on relationship-learning association among children with BESD and ASD, which necessitated discounting the majority of interview data collected in the evaluation. However, as the design phase of the AfA evaluation and this thesis overlapped, the researcher was able to supply questions for case study interviews that would be of use to the evaluation and yet provide relevant data for this enquiry.

**Constraints and opportunities from the fieldwork context**

The most problematic area of independence from the AfA evaluation was the constraint that this fieldwork context put on data collection. The interview questions and survey items used here were always gathered at the same time as a broader range of additional data needed by the evaluation. This limited how many questions that relating to research questions 1 and 2 could be included in interviews or surveys, and may have had an impact on the level of respondent attention paid to ‘thesis-relevant’ items. More specific data constraints are presented in the limitations section of the discussion chapter.

Independent data collection was not practically viable due to the high level of researcher involvement in the AfA evaluation and because the ethical permission obtained only covered the data protocol established for the evaluation. However, it is worth considering how the thesis could have differed had it been possible. The project would have been free of the constraints mentioned above, but it would also have had several disadvantages. The quantitative sample would likely have been considerably smaller, and neither sample would reflect the interesting context of AfA where these pupils were, in theory, prioritised more than was
to be expected nationally by their schools. For this contextual reason it was not feasible to have a separate qualitative sample or for this study to include data gathered from the ‘comparison’ schools. Multiple researchers collecting the data made the large sample more possible, and improved rigour in the collection process, as procedures were established and monitored collectively. For example, a senior educational psychologist approved all interview questions in terms of suitability for parents or for children with SEND.

Appendix 2 – Timescale of project

<table>
<thead>
<tr>
<th>Date</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>September - December 2009</td>
<td>Initial literature review</td>
<td></td>
</tr>
<tr>
<td>January 2010</td>
<td>Survey collection 1</td>
<td></td>
</tr>
<tr>
<td>February - March 2010</td>
<td></td>
<td>Case study visit 1</td>
</tr>
<tr>
<td>June - July 2010</td>
<td></td>
<td>Case study visit 2</td>
</tr>
<tr>
<td>November - December 2010</td>
<td></td>
<td>Case study visit 3</td>
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<tr>
<td>January – February 2011</td>
<td></td>
<td>Case study visit 4</td>
</tr>
<tr>
<td>June - July 2011</td>
<td>Survey collection 2</td>
<td>Case study visit 5</td>
</tr>
<tr>
<td>August 2011 – September 2012</td>
<td></td>
<td>Analysis and write-up</td>
</tr>
</tbody>
</table>
INFORMATION SHEET FOR PARENTS

Dear Parent,

Your child’s school is involved in an exciting project called Achievement for All (AfA). This project hopes to improve children’s learning and experience of school. The government has asked us to evaluate how well this project works.

We are writing to you because your child is involved in the project and we would like to know what you think about it. We will collect your views in a 10 minute survey this month and in June of this year.

Please read the following information carefully and decide whether or not you would like to take part. If you would like any more information or have any questions about the research project, please telephone Dr. Alexandra Barlow (details at the end of this letter).

Who will conduct the research?

The research will be conducted by Professor Neil Humphrey and other staff in the School of Education, University of Manchester, Oxford Road, Manchester M13 9PL.

What is the aim of the research?
Our main aim is to find out what impact Achievement for All has on outcomes for children and young people with special educational needs and disabilities. We also aim to find out which processes and practices in schools are most effective in improving these outcomes.

**Where will the research be conducted?**

450 schools across 10 Local Authorities in England are involved.

**What is the duration of the research?**

The project runs from September 2009 until August 2011.

**Why have I been chosen?**

We are writing to you because your child’s school is taking part in the AfA initiative, he/she is on the school's special educational needs register and is also in one of the AfA target year groups (Years 1 and 5 in primary schools; Years 7 and 10 in secondary schools).

**What will I be asked to do if I take part?**

You will be asked to complete a brief survey about:

- your child’s behaviour
- positive relationships
- bullying
- participation in wider activities
- your engagement and confidence in the school.

This survey will be conducted twice – in January 2011 and June 2011. It will take approximately 10 minutes to complete each time. It will be available online. If you do not have access to the internet we will be happy to either provide a paper copy or complete it over the telephone at an agreed time. If you would like to do this please contact Dr. Alexandra Barlow (details at the end of this letter) and she will arrange this for you.
The survey will be available in the following additional languages: Arabic, Bengali, Chinese (traditional and simplified), French, Gujarati, Polish, Somali and Urdu.

In consenting to take part you are also giving your permission for a key teacher at your child’s school to complete a similar but shorter survey (that only covers behaviour, bullying and positive relationships) at the times noted above. There will be no direct contact between any of our research team and your child for this part of the research project.

**What happens to the data collected?**

The data will be analysed by our research team at the University of Manchester. We will write a report based on our analyses for the Department for Education. It is also likely that we will write articles for academic journals based on what we find out in the project. Finally, it is possible that we will write a book about the research. Your child’s name will not be used in any of the reports that we write.

**How is confidentiality maintained?**

All data provided will be treated as confidential and will be completely anonymous. Identifying information (e.g. your child’s name) will only be used in order to match responses about the same individual from different respondents (e.g. parents and teachers) and across different times (e.g. January 2011, June 2011). After this matching process is complete, all identifying information will be destroyed.

The website that houses the survey will be completely secure and password protected. All survey data will be stored on a secure, password protected drive to which only senior members of the research team have access.

**What happens if I do not want to take part or I change my mind?**
It is your decision if you wish to take part.

If you decide to take part you do not need to do anything now – you will be sent further details about when and how to complete the survey in the near future.

If you decide not to take part then you need to either complete the enclosed opt-out consent form and return it to our research team at the address below, or contact Dr. Alexandra Barlow by telephone or email by Monday 10th January 2011.

If you decide to take part and then change your mind, you are free to withdraw at any time without needing to give a reason. If you do this, please rest assured that we will destroy any data generated in relation to your child as part of the study.

**Will I be paid for participating in the research?**

We are not able to offer any payment or incentive for participating in this study.

**Criminal Records Check**

Every member of our research team has undergone a Criminal Records Bureau check at the Enhanced Disclosure level.

**Contact for further information**

Dr. Alexandra Barlow
Educational Support and Inclusion
School of Education
University of Manchester
Oxford Road
Manchester, M13 9PL
What if something goes wrong?

If completing the survey makes you worry about your child’s wellbeing then you should contact his/her school in the first instance and ask to speak to the Achievement for All co-ordinator.

If you ever wish to make a formal complaint about the conduct of the research you should contact the Head of the Research Office, Christie Building, University of Manchester, Oxford Road, Manchester M13 9PL.

Achievement for All National Evaluation

PARENTAL CONSENT FORM

An information sheet is attached to this form. Please read it carefully before making a decision about taking part in the study.

If you are willing to take part then you do not need to do anything at the moment. You will be sent further details about when and how to complete the survey in the near future. In consenting to take part, you are also giving your permission for a teacher at your child’s school to complete a survey about your child.

If you decide not to take part, then you need to complete the opt-out consent form below and return it to Dr. Alexandra Barlow (contact details below) by Monday 10th January 2011.
Finally, please also remember that if you decide to take part, you are free to change your mind at any point in the study. Just let us know and we will destroy any data generated in relation to your child.

I do not wish to participate in the Achievement for All national evaluation. Furthermore, I do not give consent for a key teacher at my child’s school to complete a survey about him/her in relation to this study.

<table>
<thead>
<tr>
<th>Name of child</th>
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<tbody>
<tr>
<td>Sex of child</td>
<td></td>
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<tr>
<td>Year group</td>
<td></td>
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<tr>
<td>Name of school</td>
<td></td>
</tr>
<tr>
<td>Local Authority (if known)</td>
<td></td>
</tr>
</tbody>
</table>

Signed: __________________ (parent/guardian)  Date: __________

Please return this form to:

Dr. Alexandra Barlow  
Educational Support and Inclusion  
School of Education,  
University of Manchester  
Manchester, M13 9PL  
Email: Alexandra.Barlow@manchester.ac.uk  
Telephone: 0161-275-3504
Dear parent

We are writing to you as your child’s school is involved as a case study school in an exciting project called Achievement for All (AFA). This project hopes to improve the learning and experience of school for children with special educational needs and disabilities (SEND). The government has asked us to evaluate how well this project works.

As part of the case study, we would like to speak to you and your child. Please take time to read the following information carefully and decide whether or not you would like to take part.

If you would like any more information or have any questions about the project, please telephone William Bulman on 0161 275 3522 or email him at william.bulman@postgrad.manchester.ac.uk.

Who will conduct the research?

The research will be conducted by Dr. Neil Humphrey and other staff in the School of Education, University of Manchester, Oxford Road, Manchester M13 9PL.
Title of the research

Achievement for All – National Evaluation

What is the aim of the research?

Our main aim is to find out what impact AFA has on outcomes for children and young people with SEND. We also aim to find out which processes and practices in schools are most useful in improving these outcomes.

Where will the research be conducted?

450 schools across 10 Local Authorities in England are involved. For the case study, two schools from each Local Authority have been chosen.

What is the duration of the research?

The project itself runs from September 2009 until August 2011.

Why have I been chosen?

We are writing to you because your child's school is taking part in the AFA initiative, he/she is on the school's SEND register and also is in one of the AFA target year groups (Years 1 and 5 in primary schools; Years 7 and 10 in secondary schools).

What would I be asked to if I took part?

A member of the research team will interview you and your child (separately) on two or three occasions between November 2009 and July 2011. The interviews will each take no more than 30 minutes. You will be asked to talk about a number of areas relating to your child and his / her school. The areas are likely to include:

- your child's behaviour,
- positive relationships,
- bullying,
- participation in wider activities,
- your engagement and confidence in the school,
- improvements made in these areas during the project

Similar topics will be covered when interviewing your child.

In consenting to take part you are also giving your permission for your child to be interviewed.

**What happens to the data collected?**

The interviews will be recorded and then written up so that they can be analysed by our research team at the University of Manchester. We will write a report based on our analyses for the Department for Children, Schools and Families. It is also likely that we will write articles for academic journals based on what we find out in the project. Finally, it is possible that we will write a book about the research. Your name or your child’s name will never used in these reports.

**How is confidentiality maintained?**

All data provided will be treated as confidential and will be completely anonymous. Identifying information (e.g. your name or your child’s name) will not be used.

**What happens if I do not want to take part or I change my mind?**

It is up to you if you want to take part.

If you decide to take part you do not need to do anything – you will be sent further details about times and dates of the interviews in further course. Your child’s school may contact you in order to request contact details so that our research team can get in touch with you directly.
If you decide not to take part then you need to either complete the opt-out consent form enclosed and return it to our research team at the address above or contact William Bulman by telephone or email (details above).

If you decide to take part and then change your mind, you are free to withdraw at any time without needing to give a reason. If you do this please rest assured that we will destroy any data generated in relation to your child as part of the study.

**Will I be paid for participating in the research?**

We are not able to offer any payment or incentive for participating in this study.

**Criminal Records Check**

Every member of our research team has undergone a Criminal Records Bureau check at the Enhanced Disclosure level.

**Contact for further information**

William Bulman  
Educational Support and Inclusion  
School of Education  
University of Manchester  
Oxford Road  
Manchester  
M13 9PL

Tel: 0161 275 3522  
Email: william.bulman@postgrad.manchester.ac.uk

**What if something goes wrong?**
If participation in this research project makes you worry about your child’s wellbeing then you should contact his/her school in the first instance and ask to speak to the Achievement for All co-ordinator.

If you ever wish to make a formal complaint about the conduct of the research you should contact the Head of the Research Office, Christie Building, University of Manchester, Oxford Road, Manchester M13 9PL.
Appendix 5 – Parent consent form (phase 2 participants)

ACHIEVEMENT FOR ALL – NATIONAL EVALUATION (CASE STUDY STRAND)

PARENT AND CHILD CONSENT FORM

An information sheet is attached to this form. Please read it carefully before making a decision about taking part in the case study.

If you are willing to take part then you do not need to do anything at the moment. You will be sent further details about interviews in the near future.

If you decide to take part, then you need to complete the consent form below and return it to William Bulman, Educational Support and Inclusion, School of Education, University of Manchester, Oxford road, Manchester, M13 9PL. Alternatively, William can be contacted by telephone on 0161 275 3522 or email at William.Bulman@postgrad.manchester.ac.uk.

Finally, please also remember that if you do decide to take part, you are free to change your mind at any point in the study.

I wish to participate in the case study strand of the Achievement for All national evaluation. My details are as follows:

<table>
<thead>
<tr>
<th>My name</th>
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<tbody>
<tr>
<td>My child’s name</td>
<td></td>
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<tr>
<td>Name of my child’s school</td>
<td></td>
</tr>
</tbody>
</table>
Signed: ___________________________  Date: __________

Please return this form to William Bulman, Educational Support and Inclusion, School of Education, University of Manchester, Manchester M13 9PL
Appendix 6 – Distribution of residuals

Histograms indicating normality

**Dependent Variable: Mean eng/maths score at time 3**

**SEND primary need category T1: ASD**

- Mean = 0.05
- Std. Dev. = 0.942
- N = 136

**Dependent Variable: Mean eng/maths score at time 3**

**SEND primary need category T1: BESD**

- Mean = 0.01
- Std. Dev. = 0.989
- N = 520
P-P plots indicating normality

**Dependent Variable: Mean eng/maths score at time 3**

SEND primary need category T1: ASD

**Dependent Variable: Mean eng/maths score at time 3**

SEND primary need category T1: BESD
ZRESID v ZPRED plot indicating linearity and homoscedasticity

**Dependent Variable: Mean eng/maths score at time 3**

SEND primary need category T1: ASD

**Dependent Variable: Mean eng/maths score at time 3**

SEND primary need category T1: BESD
Appendix 7 – Sample interview transcript

Sabbir, visit 5

I = Interviewer

P = Participant

I: Okay so how have you been doing at school since we last spoke is it going well?

P: Yeah well.

I: Going pretty well okay so have the teachers been telling you that they’re happy with your progress?

P: Yeah.

I: Yeah okay and how is your behaviour at the moment?

P: Sometimes its good sometimes its bad.

I: Okay. Is it in general is it better than last year would you say?

P: Yeah better than last year.

I: Okay and what's what's helped you improve your behaviour?

P: Support from my friends.

I: Your friends okay okay and is that are they all in your class or ...?

P: Yeah.

I: Okay so what what can they do to help you?

P: They tell me when I'm misbehaving a bit when I'm getting bad behaviour.

I: Okay so they can tell when you're beginning to get a bit angry and frustrated?

P: Yeah.

I: Okay and is that something that the teachers told them to do for you or did they just start doing that?

P: They started doing that.
I: Okay that's really good you didn't ask them to do that, because they've got to know you. How many of them do you think will be in your new school next year?

P: I don't know but I know their names I know some will.

I: Some will be?

P: Yeah.

I: Some of the ones that have been helping you will be there next year?

P: Yeah.

I: Okay that's that's really good and what what don't you like doing in the school what's your least favourite subject?

P: Literacy.

I: Literacy what's your favourite thing to do in school?

P: Science.

I: That's good and is that because of the teachers you have or is it the subjects?

P: Subjects.

I: So what's what don't you like about literacy.

P: Writing.

I: Okay so does that mean you don't like all subjects of writing or is it literacy?

P: All subjects.

I: Okay so does that mean you like Maths?

P: Some.

I: Okay okay and what's are the teachers there to help you with your learning and behaviour or what kinds of things do they ...?

P: Like a behaviour chart.

I: A behaviour chart yeah so is that sort of stickers and sort of ...?
P: Yeah.

I: You make you sort of pick targets and then you get a sticker is that how it works?

P: Yeah.

I: Okay and was that effective did that make a difference?

P: Yeah.

I: Okay. And are you still on something like that or ...?

P: Yeah.

I: Okay is there anything else that you’d like them to do to help you?

P: No.

I: That’s good and do you think that what your friends are doing cause the first thing you mentioned was your friends do you think what they’re doing is more important than the teachers...?

P: Yeah.

I: Okay why do you think its more important?

P: Because they know me the most and I get more help.

I: Right okay yeah and do they do they just help with your behaviour or do they sometimes help with the the learning you know...?

P: Help with learning sometimes.

I: Help you with the learning as well?

P: Yeah.

I: Okay and what do they do to help you with the learning?

P: They help me concentrate like if I’m something on my mind they just say and tell the teacher or something like that.

I: Okay and are these are these people that help you are they all friends that you kind of mix with at break time and lunch time sort of ...?

P: Yeah.
I: And were they helping you when you were younger or they started ...?

P: Just started.

I: Is it just this year started doing that?

P: At the end of year 5 then year 6.

I: Okay why do you think they've changed do you think they've just as they've got older got more grown up or ...?

P: Yeah.

I: Okay that's really interesting.

P: Also I was being a friend to them sometimes.

I: So you've done things for them as well yeah. What kinds of what kinds of things?

P: If they're in trouble I'll just help them out.

I: Okay do you mean with other kids or teachers?

P: Yeah.

I: Okay so how do the teachers here tell you how you're doing with your school work do they have meetings with you or do they write it in a book or ...?

P: I don't know.

I: Okay.

P: Oh yeah at end of the year they'll tell you.

I: At the end of this so do they they only tell you how you're doing once a year?

P: They tell my mum but I don't know.

I: Okay so and then your mum tells you?

P: Yeah.
I: Okay so you don't kind of have conversation every week or every month where they say 'you're doing well in your English Maths' they don't have that kind of conversation?

P: No.

I: Do you have targets at school?

P: Yeah.

I: Do you know what they are? Don't have to tell me but do you know what they are?

P: Yeah.

I: Okay and how often do they change?

P: Well they just stay the same.

I: What they've been the same all year?

P: Not all year like since the beginning of last term.

I: Oh right are these targets all to do with behaviour?


I: Do you have any that are to do with your subjects?

P: No.

I: Okay and how are you doing with you behavioural targets?

P: Very good.

I: Very good yeah do you like going to school?

P: Yeah.

I: Okay are you ever off school at all?

P: Not often pretty rarely.

I: Okay and what kind of why would you miss the sort of ...?

P: If I'm being sick or basically if I'm sick then there's ...

I: Has that always been true or did you not come to school?
P: No just because I’m sick.

I: Okay and do you the things that’s been that have making you not behave well in class the things that trigger bad behaviour ...?

P: Some people being scared or behavioural.

I: Are they do they still kind of bother you the same way?

P: Sometimes it is sometimes they do.

I: Okay so do you have has anyone sort of given you any strategies of what to do if you’re feeling angry or frustrated? Like go and do this instead and think about?

P: Yeah.

I: What kinds of things ...?

P: They tell me to go somewhere else.

I: Go somewhere else was that a teacher that ...?

P: A child my friends.

I: A child oh right so your friends give you advice about what to do. Has the school given you advice like that as well?

P: Yeah.

I: What sort of things did they tell you?

P: They said if I get angry go to the red book calm down.

I: The red book?

P: Yeah.

I: What does that mean what’s the red book?

P: Its where she gives something like (7.55) ?? if you kick someone or you have to like ?? detention at lunch time. She ...

I: Okay so the school the school is kind of given you punishments.

P: Yeah.
I: Have they given you anything else?

P: Well mostly yeah.

I: What they what during the red book?

P: Yeah.

I: Do you think the red book is useful does it mean that you're likely to do your work in the red book does it work?

P: Sometimes it will sometimes it won't. Like they show you when you're supposed to if you just have it wrong you have to pay the price and sometimes you just get ...

I: Okay so why do you think it works sometimes and other times not?

P: Sometimes and other times

I: Ah cause the red book is supposed to be about everything being fair.

P: Yeah.

I: If its not fair (9.05) yeah okay that makes sense. Do you get on well with all your classmates or some of them?

P: Some of them well just one or two of them.

I: Okay and how do you sort of deal with that?

P: I just go to my friends (9.45)

I: Pardon?

P: (too much background noise)

I: Okay and

I: That's good that's pretty good and so its quite easy to avoid those its not okay. Do you have a favourite teacher? Doesn't really matter if you don't?

P: Yeah.

I: You do have one. And what makes them different?
P: They’re more fair than other teachers.

I: More fair?

P: Yeah.

I: So does that mean that they’re sort of better at understanding?

P: Yeah they’re more understanding.

I: Yeah they’ve got the right idea. Something and do you think that you do better in their lessons?

P: Yeah.

I: Is this the teacher that teaches you now?

P: Yeah.

I: So when you’re in a lesson where you’ve got a teacher that has a good understanding of you and what’s going on does that kind of make a difference to how much you like to be there and want to listen?

P: Yeah.

I: And is that teacher good at helping you when you’re stuck?

P: Yeah.

I: Are they better than most of the teachers that are sort of normal?

P: They’re better than most teachers.

I: Do you think maybe the two things are connected the teacher that’s good at understanding behavioural things is is kind of almost ...

P: Yeah.

I: ... always going to be better at understanding pupils?

P: Yeah.

I: And does this teacher trust you?

P: Sometimes.

I: Does is she right to trust you sometimes?
P: Yeah.

I: Should she trust you more often?

P: Sometimes.

I: Okay and so your friends that help with your school work do they?

P: Yeah.

I: And you you help them as well?

P: Yeah.

I: Do do you like working in groups that ...?

P: Yeah.

I: Do you prefer that to by yourself? (3rd party interruption) Nearly finished actually (pause) does sitting with your friends ever stop you from doing your work?

P: Sometimes no sometimes yeah.

I: Silly ones?

P: Yeah.

I: Okay so some friends are better than others?

P: Yeah.

I: And does that mean that you kind of would not sit with silly ones or do you sit with them anyway?

P: Sometimes when they’re stuck I sit with them.

I: When they’re stuck.

P: Yeah. And if they need help in something I can help them.

I: Can you help them not to be so silly?

P: Yeah.

I: Okay can you help them in ways that the teacher can’t help them do you think sometimes?
P: Yeah. Cause the teacher can’t help them if they’re speaking and saying ‘calm down’ they’re just like think oh they’ve just been doing ( a child comes in and does something even more like…

I: Okay so they teachers can’t change their mood too often?

P: Yeah.

I: And they sometimes sound in a way that they make you scared or make you knew what they so you are more effective sometimes?

P: Yeah.

I: At helping sort of other children with their problems?

P: Yes.

I: Okay and are there some so we’ve said that some friends are better than others for working are there some subjects where friends are more useful where sometimes its really good to have friends.

P: Doesn't matter.

I: So its all the same. Okay does it make a difference girls or boys?

P: Mostly girls (14.20)

I: Okay so they’re better to work with you?

P: Yeah.

I: And have you been involved in any bullying since we last spoke?

P: No.

I: Put that there cause of the noise. None at all okay and and are you still going to the same after school clubs; it was film club you were going to?

P: No I don't go to that anymore.

I: Okay is that do you just get bored with it did it finish or ...?

P: I just got bored with it.

I: Okay do you go to anything else instead?

P: No.
I: Okay is there anything that you like is that cause there's nothing that you want to do or is it just cause you like to be at home or ...?

P: Like to be at home.

I: And do you know how often the school have been in touch with your mum recently have they had many meetings? You don't know or they haven't?

P: I don't know.

I: You don't know okay and alright well that's my last question unless there's anything else you want to say about how things have been going?

P: No.

I: Okay great.

(End of Transcript)
Appendix 8 – Sample AfA interview schedule including additional questions for the thesis and rationale

This interview schedule is for pupils during the final visit, and the questions added for this thesis are in bold. Discussion of how the questions developed follows after the schedule.

Case Study Schools

School pupil Interview (Visit 5)

N.B. All of the questions outlined below will be adapted according to the pupil’s age, primary need, provision etc. In some cases not all questions will be asked.

Warm up

i.e. “Can you tell me about any hobbies you have? What is your favourite thing to do when you’re not in school?”

1. Have you heard of Achievement for All?
   i. How did you hear about it?
   ii. What do you think it is?

Academic outcomes

2. What do you like doing at school?/What is your favourite subject at school?
   i. Why do you enjoy this?

3. What don’t you like doing at school?
   i. Why don’t you enjoy this?
   ii. Have these problems got easier lately?
   iii. If so in what way?
   iv. And why do you think this is?

4. What sorts of things have the teachers done to help you at school?
   i. Do you ever go out of class to work to do extra work with a teacher?
   ii. Can you give me an example of something you have worked on together?
   iii. How often do you do this?
   iv. How long have you been doing this?

5. Do you like this?
   i. Do you feel it is helping you?
   ii. In what way?
   iii. Is there anything else you would like them to do to help you?
6. Do you know how well you are doing with your school work?
   i. How do your teachers let you know how you are doing?
   ii. Do you think you are improving in your school work? Why? What has helped you?
   iii. Are you involved in setting your school targets? Have you been more involved recently? Why do you think this is?

Focus in specific wider outcomes

7. Do you like going to school?
   i. Are you ever off school at all?
   ii. Do you know what the school has done to try to make children come to school more often?
   iii. I know the school is doing _________ to improve attendance, has this helped you?

8. Do you think you behave well at school? Why/why not? Do other children behave well?
   i. Has the school done anything to try to help children to behave well?
   ii. I know the school is doing _________ to help children to behave well, has this helped you?
   iii. Has this worked and why?

9. Do you get on well with your class mates?
   i. Has the school done anything to try to help children get along better at school? Has this worked?
   ii. I know the school is doing _________ to help children get along better at school, has this helped you?

10. Do you have a favourite teacher / a teacher that you get on really well with?
    i. What are they like?
    ii. How are they different?

11. Do you have a teacher who is good at helping you if you are stuck?
    i. What do they do?
    ii. Do other teachers do this too?

12. Is there anything that teachers do that you think really helps you learn?

13. Do you think that your teachers trust you?

14. Do you have friends in your class(es)?
    i. Do you ever sit next to them / work with them?

15. Do your friends ever help you with your work?
    i. What do they do?
    ii. Do other children in your class do this too?

16. Does sitting / working with your friends ever stop you from doing your work?
    i. Do you think it’s a good idea overall to be with them?
    ii. Are people in your class ever mean in a way that puts you off from joining in?
17. Have you been involved in any bullying since we last spoke? If yes, could you tell me about it?
   i  If so, how often did it happen?
   ii If so, what sort of bullying was it?
   iii Why do you think other children picked on / bullied / teased you?
   iv Did you tell a teacher or your mum/dad? What happened? Has the situation improved now?
   v Do you know what the school does to try to prevent bullying?

18. Do you do any after school clubs?
   i  What sorts of things do you do? Did you chose to go, why? Tell me about them.
   ii I know the school is doing __________ these clubs has this helped you?
   iii Have there been more clubs on offer lately?
   iv Do you like going to these clubs? Why?
   v Does going to these clubs help you? How?

19. Do teachers have meetings/talks with your parents?
   i  Do you know how often they have these meetings?
   ii Are you ever part of the meetings? Do you like being part of these meetings?
   iii Do they let you know what happened at the meetings? How do your parents tell you?

Although this phase of the study aimed to be as inductive as possible, there was a framework of theory and evidence around the more closed questions such as does sitting with friends ever stop you from doing your work?’. This was based on reports suggesting that friendships have a differential impact on engagement with learning depending on the norms within that friendship (Kutnick & Kington, 2005). Another subquestion, ‘are people in your class ever mean to you in a way that puts you off from joining in’ was based on Raider-Roth’s (2005) argument that peer climate influences a pupils trust in their own knowledge and willingness to participate and on staff claims during an earlier visit that peer climates around Katie and Joanna were very positive and encouraging, and that this was crucial to engagement.

These questions were all intended to be starter questions, in that rather than moving from one to the other the interviewers asked follow-up questions where appropriate. Some of the most interesting data came from follow up questions, for example in the sample transcript provided in appendix 7, Sabbir answers the question discussed above with ‘sometimes no sometimes yeah’. I then tried to find out if this was to do with being distracted by the ‘silly’ friends that teachers had told me about, is in line with the research evidence. However, he replied that he sometimes chooses to sit with those friends as he felt that he could help them more than the class teacher because she was emotionally volatile. Whether or not peers would have felt this helpful, this comment showed the adaptations that Sabbir had made in the context of the broken teacher-pupil relationship.
Appendix 9 – Map of themes generated during coding on Nvivo

- Loose PPR codes
- Friendships depend on similar SEN
- Distinction between friendships and respectful PPRs
- Pupil works with any peer
- Wants to hide academic gap
- Will give answers without having friends in class
- His TA so no need for peer help
- Relatively unfussed by lack of friends
- Group work, distracts pupil
- Pupil more troubled by academic gap
- SEN classmate boosts confidence
- Improved behaviour
- Peers model learning
- Friendly classmates encourage participation
- Motivation to attend
- Sharing task information
- Better group work
- Improved confidence
- Approaching peers for support
Other emergent themes

Moderating factors on relationship – learning association

- Emotional maturity of pupil
- Pupil not calm in large groups
- Some friends can distract
- Girls more school focussed with friends than boys
- Pupil not confident communicating academic information to peers

Miscellaneous themes

- PPR more important than TPR
- Anxiety about schoolwork triggers behaviour problems
- Problem behaviours are pupil’s diversion from learning issues
- Being exposed as knowing less than peers triggers behaviour problems
Appendix 10 – Sample Nvivo summary: data coded under the node ‘Teacher-pupil relationships’ relating to Joanna

No variability in how well teachers relate to pupil

<Internals\Joanna\J's mum vis 2> - § 1 reference coded  [2.13% Coverage]

Reference 1 - 2.13% Coverage

how about her relationships with her teachers, are there some teachers that she’s got a
good relationship with?
R: I think she’s got good relations with all of them, she’s very happy and talk about them
and urr, usually when she doesn’t understand something she ask,
I: umm,
R: you know and I can see that she has got very good relations with them.
I: Umm,
R; All of them.

<Internals\Joanna\J's mum vis 3> - § 2 references coded  [2.06% Coverage]

Reference 1 - 1.39% Coverage

is that a good thing to keep the same form tutor?

RES   I think so yes, she is quite happy, she has got a good relationship with all the
teachers, probably she wouldn’t mind a change, but she is happy, she
never told me anything is wrong, so I am happy with that.

Reference 2 - 0.67% Coverage

She was well with the rest of the children but it was the same relationship I think
with the assistant and with the teacher.

<Internals\Joanna\J's mum vis 5> - § 1 reference coded  [1.24% Coverage]

Reference 1 - 1.24% Coverage

Okay, that's good. Have class teachers been able to build a relationship with her
when the assistant is not there?
Respondent: Yes. I think she has got a good relation with all of them.

Reference 1 - 1.20% Coverage

I probably know her better because I’ve taught her for 6 lessons a week, last year. So it’s the fact that I’ve got a longer, perhaps a deeper relationship with her. And also perhaps because I’m an experienced teacher, whereas a young teacher might not have met, worked with autistic children before. But no, I think she’s got quite good relationships with all the teachers.

Pupil needs to be less dependent on staff academic support

Reference 2 - 3.05% Coverage

So we agree with teachers in the same thing. That maybe get her a bit independent. Because she is very dependent on me, on the assistants.

Interviewer: When did you decide to help her be more independent?

Respondent: Well we have decided this year. Not the beginning, just a couple of months ago.

Interviewer: Has she become more independent yet?

Respondent: If she can do the homework ... she’d do it. Some of them she has to do it with me. But ... I know she has to surf something in internet, or printed or make a poster or things like that, I try to let her to do it. Because if you say, you don’t have to do it, she is always asking you for help. So even in the class the assistants ... do that. Try to tell try to do it by yourself, and then if you get stuck on something then we will help you.
very often she says I can’t do it. And she could do something, maybe not well, maybe just beginning something, obviously not well. But she always tries to get help. She’s lazy in that sense. So you feel more confident with - even at the beginning if she doesn’t have an assistant in important classes, she just panics and is very dependent on the assistant. We think that she doesn’t need too much. Because why she doesn’t progress - maybe she could do it.

Reference 1 - 0.98% Coverage

So she can work independently but she is a bit reluctant to do that at the beginning and that’s one of the targets we’ve just set for her to be more independent.

She tends to say she can’t do it and it’s very difficult to judge how much she can’t do and how much she’s being lazy or too reliant on the help.

Reference 2 - 1.64% Coverage

This year we tried reading the questions to her but we can’t give a prompt or reword them, so it’s quite difficult. And that’s why we’re trying really hard to make her a little bit more independent.

Interviewer: Then the tests wouldn’t be such a difference?

Respondent: Yes, she’s ... She looks at the question and says, I can’t do that, too hard. And you know that she can do some of them. So we’re trying to ease off a little bit. We want her to have a go. At least at the things we think she can attempt.

Reference 3 - 2.22% Coverage

Sometimes you get frustrated with her, because you want her to do - again, it’s not knowing what she truly can do. Is she holding back? Is she capable of pushing herself that bit more? I think it’s less obvious in Joanna
because she knows she’s got autism. And she has problems expressing herself, but then she has got social skills and I’m still not quite sure what her academic ability is. Because as I say, sometimes she can be quite good at things, but sometimes it’s her mind or her attitude saying, I can’t do that. And she’s quite intransient about changing her mind. So yes you do sometimes get a bit frustrated. It’s partly with yourself because you don’t know how much to push her.

**Teacher attributes/practices that don’t promote TPR**

<Internals\Joanna\J's mum vis 3> - § 1 reference coded [0.48% Coverage]

Reference 1 - 0.48% Coverage

she doesn’t like when someone shouts at her or things like that, she gets really stressed.

**Teacher attributes that promote TPR**

<Internals\Joanna\J vis 3> - § 2 references coded [3.51% Coverage]

Reference 1 - 2.63% Coverage

say you were in charge of a school and you had to design a perfect teacher to take a call and you could say exactly what the teacher was like, what would your perfect teacher be like?

RES  Probably very good at teaching us and ..........

INT  What kind of person would they be?

RES  Probably nice and very good with all different kinds of children, from different ages and very good at some subjects and that’s it.

Reference 2 - 0.88% Coverage
And do you think that having a friendly or helpful teacher makes it easier to learn?

I don’t really mind if my teacher is strict.

how do you think the teachers need to behave with Joanna for her to kind of trust them? How do they need to be with her?

I think, I don’t know – just be kind with her, don’t shout, explain to her slowly when she doesn’t understand things. Tell her don’t worry, be normal with her

how can teachers encourage Joanna to explore her own ideas when she has her own ideas?

Make her feel included, and then try to explain a little bit and make her encourage her to think and if she is bringing the homework

are there any opportunities for teachers to talk to Joanna in private, so without the rest of the class being there about her learning, what she knows and what she doesn’t know.

Yes, I think they have got opportunities when she is in the break she is quite happy if they go and told her to have a chat or in the middle of a class sometimes they will say can you got to that class and talk to Mrs whatever her name is. She is happy and she goes and she has got opportunities and if the teacher wants to talk to her she is happy and
even after lunchtime she is most probably in the library or – so she is quite available so if the teacher wants to talk to her – so yes.

Reference 4 - 0.99% Coverage

she is quite happy, I don’t know if she would do it privately, I think she would do it in the class or if she doesn’t have that teacher that day she would go and look for her and ask her.

<Internals\Joanna\J's TA vis 3> - § 1 reference coded [2.66% Coverage]

Reference 1 - 2.66% Coverage

INT What can teachers do to build good relationships?

RES I think it is getting her trust, you can talk to her and she does listen, but she doesn’t always like to be necessarily told what to do, but she likes you to just sit with her and try and explain it and not say you have got to do this, come on hurry up. She would just like a bit more time in a way to think about what she is still in and I think she works better that way, than you know.

<Internals\Joanna\J's teacher vis 5> - § 1 reference coded [2.60% Coverage]

Reference 1 - 2.60% Coverage

**Did you have to do anything different to establish a relationship with Joanna?**

Respondent: I think you have to listen more carefully to what she’s saying. She’s not always as quick to express her opinions or her feelings. Sometimes you have to ask more simple, straight, direct questions for Joanna to answer. And sometimes you have to ask a series of questions or you have to be more encouraging I think about telling her things. Especially at the beginning. When she knows you and trusts you then when she came back after Easter, she could tell you quite happily - she told me her cousin had been baptised and she could tell me everything about that and about the meal afterwards and her relatives and she wanted to bring in pictures.
But at the beginning I found her quite difficult sometimes to understand.

**Teachers find some pupils harder to relate to**

Reference 1 - 1.87% Coverage

I think people make allowances for Joanna and they tend to like her, and they’re very helpful and supportive. It’s quite interesting, because it’s quite an individual thing.

**Interviewer:** What do you mean by that?

**Respondent:** Well, I think teachers judge students. And some students, I think because Joanna tries and she wants to please, that comes across to teachers. And in a way they want to help her. And because she’s got autism, ASD and a statement, so they know she’s not putting it on, there is a genuine problem, then I think all the teachers try and do their best for her.

**TPR important for AO**

Reference 1 - 1.68% Coverage

**RES** Yes, some teachers are trying to help me to make sure I understand some things.

**INT** And what can teachers do to help you, what do they do that is useful?

**RES** Some of them try to explain things and try to write things and try to help me to understand things.
I feel I have got quite close – yeah it is quite nice, they will sort of come and talk. They seem to feel quite comfortable.

Right, OK and do you think that has an impact on how they are learning.

Definitely I think it helps and you can see it when they have got new teachers or new Teaching assistants that they have not necessarily worked with that they have to make that sort of relationship before they start.

Why TPR is important for AO: easier for pupil to seek help appropriately

Do you think that the fact that they do recognise where she is and give her individual support, do you feel that, that, this had, had an impact on her self confidence?
R: Yes I think so, yeah, since she has been, as I have said, it’s been a bit tense but it’s been really positive for her, she is more confident and I said I ask her what she does and understand she’s got good relations with teachers so it’s alright if she doesn’t know something the following day go and ask you know, things like that so it’s been really good for her.

that was one of my main worries when she started secondary school, actually it has been quite very good relationships, better even than in primary, so if she has to ask something she will and if she has got any problems she will tell the teacher, so I think that is very good, a very good relationship.
INT How much difference does it make in terms of getting them to venture things to have built up a relationship with them – so did you see much difference between when you were very new to them to when you got used to them.

RES Yeah, definitely because I have been with them since they were in Year 7 and I am in more lessons this year, but they tend to come and talk about anything now, not just the work they will sort of tell you what they have been doing at the weekend or if they are not feeling very well or if in one case, one of the girls was having sort of friendship problems, so I feel I have got quite close – yeah it is quite nice, they will sort of come and talk. They seem to feel quite comfortable.

Why TPR is important for AO: improving pupil engagement with lesson

RES Yes, Oh yes, because you see the same children, because I go to loads of classes and you see the same kids who have been wonderful, really enthusiastic, learnt a lot and keen to do everything, going into another lesson and they will be complete sods!

INT What kind of things…..
And sometimes you just think, you just can’t believe it is the same children. Chatting all the time, answering back, they wouldn’t dare answer back in another class.

I have Joanna and Sam at the back of maths and even if you can just ask them what do you think the question might be and they can relate to you first and then they will be a bit more confident with putting their hand up and telling the teacher.

Why TPR is important for AO: improved confidence

Do you think that the fact that they do recognise where she is and give her individual support, do you feel that, that, this had, had an impact on her self confidence?

R: Yes I think so, yeah, since she has been, as I have said, it’s been a bit tense but it’s been really positive for her, she is more confident and I said I ask her what she does and understand she’s got good relations with teachers so it’s alright if she doesn’t know something the following day go and ask you know, things like that so it’s been really good for her.

The teachers you know, gave her that confidence and she’s been you know, really good so I don’t really know why she’s changed but it’s good.

Here her confidence has been much much better.
INT  OK and when she didn’t have that confidence did that also change the way that she would kind of tackle the tasks, so say she was asked to do an exercise she was feeling low on confidence.

Reference 2 - 1.94% Coverage

in the class she gets involved and if she doesn’t understand she asks. She gets involved and if she knows the answer I suppose she will say.

INT  OK and why do you think she feels confident? What do you think has helped her to have the confidence to do that?

RES  I don’t know, I think it must be the teacher, maybe also the rest of the class is kind with her.

Reference 1 - 2.31% Coverage

<Internals\Joanna\J's mum vis 5> - § 1 reference coded [2.31% Coverage]

Do you think it’s important for Joanna’s progress that teachers build good relationships with her?

Respondent: Yes. Actually I think there’s quite good relations and that’s given her more confidence this year. If she’s happy with her teacher and she’s confident to ask any question if she doesn’t understand. And I think yes that’s been important.

Reference 1 - 3.29% Coverage

<Internals\Joanna\J's TA (2) vis 3> - § 2 references coded [4.04% Coverage]

you need to sort of big them up a bit and say yes, you know that, yes, you are really brilliant and just say yes, you can do it. You are as good as everybody else, that is what we say to them, because in cooking we had Joanna and the whole class did cooking last year and we thought it was going to be a bit of a trauma really, helping out in their, but they were really, really good and we said to them that they didn’t
realize that they were that good so we kept telling them how well they have managed you know and how they were much better than, or as good as or a lot better than lots of the other Year 7 classes we have had, we didn’t mention names.

Reference 2 - 0.75% Coverage

part of it is confidence with them and we need to make them realize that they can do it and they are capable of a lot more than perhaps they imagine.

<internals\joanna\j's TA vis 3> - § 2 references coded  [5.82% Coverage]

Reference 1 - 2.74% Coverage

what might lead to them doubting their knowledge, so I am talking about times when you know that they know the answer, but they think they don’t and you have to try and coax it out of them.

RES With Joanna she would think that she doesn’t know it anyway, she is quite em – I was having a conversation with her the other day and she said I always don’t know anything, but I said, but you do, you have shown you do and this is just trying to reassure her really.

Reference 2 - 3.08% Coverage

what can you do to encourage children to either express ideas that they are not sure of and how to kind of…..

RES I think it is lots of talking to them really and reassurance, which they do get because there are certain children in the class that we work with and I think there are a couple of Teaching Assistants normally in the class, so if they are not sure they always ask or we go up to them and ask them how they are and how they are feeling and they will tell you, you know, if they are struggling a little bit.
Why TPR is important for AO: Respectful PPRs are strongly influenced by teachers

Reference 1 - 1.84% Coverage

There is 7E, who have got a different form tutor and I think that is a lot to do with it. They are horrible to each other, they are not nice at all!

INT OK.

RES They are always, always thinking that somebody has got something that they should have, they always think they are missing out on something and they are obsessed with looking to see who has got what.

Reference 2 - 4.25% Coverage

In 7E, whereas 8A have been really taught well and they have really had a good form tutor and I think he has made a big, big difference.

INT So what is different about him, what has enable him to do that.

RES What the form tutor, Mr Jones is so consistent, absolutely consistent, there is never any variant from the rules.

INT OK.

RES You know, they know exactly where they are with him, really and I think that is what they need, complete structure.

INT And do his rules and expectations focus on a specific area like in terms of the relationships and how you treat others?
RES  Yes, Oh yes, he is very hot on that.

INT  Is he more hot on that than others?

RES  I think he has made them into a sort of like come on 8A we are the best in the school kind of thing, built up a good form, what do you call it, like a team spirit.

Reference 3 - 1.21% Coverage

in this class that I am in with 8A, which is mostly just English, DT, they work really well because I think the teacher is really good, it is all very calm, structured and they know exactly where they are and what is expected, so that is good

Reference 1 - 2.33% Coverage

Why do you think that class has a different atmosphere to other classes?

RES  I actually think their tutor is really good and he is strict by fair with them and they know if they get into trouble with one of their teachers they would have to talk to their tutor and they seem to have a good relationship with him and they don’t particularly want to upset him, so I think that is part of it.

Reference 2 - 1.84% Coverage

They seem to get on really well with him actually.

INT  And he has established the norms in the group, yeah, OK that’s interesting.
RES Through that I think they have got a good structure to go along in the class, because they just know there are consequences for if they do misbehave, but in a good way.

Reference 3 - 4.19% Coverage

so you don’t have any concerns with Joanna when it comes to bullying from what you see?

RES Only that she is vulnerable. She is the sort of child that maybe does come across as different to the other children, she has not been bullied as far as I know in her class and they are not nasty to her, but I am not sure how she would cope maybe going into a different class. I am not sure whether it would be the same I don’t know.

INT But, within the class?

RES Yes within the class she is in I think she is fine.

INT OK and is that because of these same factors because of having a class tutor that has established rules?

RES Yes, I think so and she is well looked after in the classroom as well

Reference 1 - 1.99% Coverage

Joanna’s form tutor, he’s got a very loud voice, and he’s fairly strict, and he doesn’t stand any messing, for many of them and he treats them all the same in that respect.

It’s really suited that class, because they know where they stand and it is a safe environment and they do know what’s wrong from right. They’ve all been really good about doing homework, getting things in on time. They know how to behave. I’m not saying they do it in every lesson because I don’t know because I don’t see
them. But you know you get reputations, people talk about classes in the staff room. They are never there for bad behaviour.

Why TPR is important for AO: socially sensitive teachers can make good interventions

<Internals\Joanna\J's TA (2) vis 3> - § 2 references coded [7.43% Coverage]

Reference 1 - 3.29% Coverage

you need to sort of big them up a bit and say yes, you know that, yes, you are really brilliant and just say yes, you can do it. You are as good as everybody else, that is what we say to them, because in cooking we had Joanna and the whole class did cooking last year and we thought it was going to be a bit of a trauma really, helping out in their, but they were really, really good and we said to them that they didn’t realize that they were that good so we kept telling them how well they have managed you know and how they were much better than, or as good as or a lot better than lots of the other Year 7 classes we have had, we didn’t mention names.

Reference 2 - 4.15% Coverage

these 3 girls require different sorts of styles of reassurance and some praise to each other or ……

RES      Yes, in fact Sam is very straight forward she likes you to say when she has done really well and she says 'oh thank you miss' and smiles and you can tell she is really happy about it. Joanna sometimes I don’t think she even realizes when she has done something really well.

INT      So if you say it, does that make her realize?
Not always, not always, I don’t think you can always convince her that she has done really well, which is a shame.

Is it always negative, or does she sometimes think she has done something well, when she hasn’t?

No I have never seen her say that she thinks she has done something welll and she hasn’t. No, I have never seen that.

So the trend is to underestimate.

yes, we tend to sit more at the back or the side. Or when I take her out, well I haven’t taken Joanna out because she seems to work quite well with that. And she does work where she can with the girl next to her who is quite supportive. Which is quite nice.

So this girl always seemed to pick Joanna, and she always really asked her a really difficult, like twelve nines. That was really beyond Joanna, and a lot of the class would go, ah - and that’s really horrible asking Joanna that, because they knew. I don’t know why this girl was doing it.

But I invited her to Hub Club as well, so they could see, get used to each other. And it seems to have stopped.

Why TPR isn’t important for AO: Limited receptivity to praise
sometimes I don’t think she even realizes when she has done something really well.

INT  So if you say it, does that make her realize?

RES  Not always, not always, I don’t think you can always convince her that she has done really well, which is a shame.

INT  Is it always negative, or does she sometimes think she has done something well, when she hasn’t?

RES  No I have never seen her say that she thinks she has done something welll and she hasn’t. No, I have never seen that.

INT  So the trend is to underestimate.

Reference 1 - 2.74% Coverage

what might lead to them doubting their knowledge, so I am talking about times when you know that they know the answer, but they think they don’t and you have to try and coax it out of them.

RES  With Joanna she would think that she doesn’t know it anyway, she is quite em – I was having a conversation with her the other day and she said I always don’t know anything, but I said, but you do, you have shown you do and this is just trying to reassure her really.

Why TPR isn’t important for AO: Pupil is less affected by teacher attributes than others

Reference 1 - 1.49% Coverage
Is that different to the case for another girl, who doesn’t have friends, would that affect they are learning more?

RES Yes, I think it is, because there is another girl in there, who seems to be a bit left out of things and she seems generally unhappy, whereas Joanna generally isn’t unhappy.

Reference 2 - 0.94% Coverage

RES You know, if you saw her you would say she was a happy girl, she is quite out going, talkative, you know she doesn’t seem unhappy, whereas perhaps a ‘normal girl’ it would get to her.

Reference 3 - 1.61% Coverage

Lucy is the first one, if you give her an inch she will take a mile, whereas Sam and Joanna wouldn’t, they would behave really, wherever they were and they would get on with the lesson and try and do as much as they could, but Lucy wouldn’t, if she thought she could get away with it with that teacher, she would play up.

Reference 4 - 0.71% Coverage

those 3 girls seem to get on with most of the Teaching Assistants, Sam is always polite and always asks if she wants help and so does Joanna.