The Reciprocal Effects Social Inclusion Intervention (RESII): The design of an intervention to improve the social outcomes of students with Autism Spectrum Conditions (ASC) attending mainstream secondary schools

A thesis submitted to the University of Manchester for the degree of PhD in Education in the Faculty of Humanities

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Abstract
Wendy Symes, PhD in Education
University of Manchester, September 2016

The Reciprocal Effects Social Inclusion Intervention (RESII): The design of an intervention to improve the social outcomes of students with Autism Spectrum Conditions (ASC) attending mainstream secondary schools

Autism Spectrum Condition (ASC) is a lifelong, developmental disability characterised by a ‘triad of impairments’ in social interaction, social communication, and social imagination (Wing, Gould & Gillberg, 2011). Increasing numbers of children and young people with ASC are now receiving their education in mainstream schools (Crosland & Dunlap, 2012). Inclusion in mainstream classrooms is perceived by some to provide the best opportunity for students with ASC to make improvements in social functioning, through modelling the behaviour of their peers (Boutot & Bryant, 2005; Connor, 2000). Evidence suggests, however, that this may not necessarily be the case. In fact, students with ASC are likely to experience a range of negative outcomes such as fewer friendships, more loneliness, less social support and more bullying and social rejection than their typical peers (e.g. Bauminger & Kasari, 2007; Humphrey & Symes, 2010a, 2011). These outcomes may be exacerbated further by the lack of appropriate interventions to adequately address them. Current interventions tend to overlook the role others can play in the social outcomes of students with ASC (Bauminger, 2002), are not designed with the school setting in mind (Crosland & Dunlap, 2012), overlook the needs of older students (Bond et al., 2016), and demonstrate limited generalisability beyond the intervention setting (Flynn & Healy, 2012). This thesis describes the design and development of an intervention designed to improve the social outcomes of students with ASC, by addressing these limitations.

The intervention, named Reciprocal Effects Social Inclusion Intervention (RESII), comprises three parts, designed to be delivered simultaneously. These are: a social skills group for students with ASC; a peer-awareness campaign to improve attitudes towards those with the condition; and a training package for TAs to help them better support social interaction in the classroom. An intervention-research framework that outlines the key steps of intervention design guided the development of RESII. In the first step, a programme model that identified the factors underlying the negative social outcomes of students with ASC (the problem theory) and change strategies to address them (the programme theory), was developed. In the second step, the specific content for RESII was selected. In the third, and final, step, RESII was trialled in two studies involving five schools and 10 students with ASC to establish the feasibility and initial efficacy of RESII. There was some evidence that RESII could be implemented in mainstream secondary schools and have a positive impact on the intended outcomes. Overall, however, the data suggests that RESII is not currently ready to be disseminated more widely. Before its use can be recommended, further research is needed to address the identified theoretical, implementation and research issues. Specifically, future research should establish the feasibility and efficacy of each of RESII’s components individually, include a more homogenous ASC sample and be delivered in schools by the intended delivery agents.
Declaration
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<td>Autism Spectrum Condition</td>
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<td>ASD</td>
<td>Autism Spectrum Disorder</td>
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<tr>
<td>CATCH</td>
<td>Chedoke-McMaster Attitudes Towards Children with Handicaps Scale</td>
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<tr>
<td>CSEIP</td>
<td>Children’s Self-Efficacy for Peer Interactions</td>
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<td>FB</td>
<td>Facilitative Behaviour</td>
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<td>PMI</td>
<td>Peer-Mediated Intervention</td>
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<td>Reciprocal Effects Peer Interaction Model</td>
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<td>SEN</td>
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<td>Social Responsiveness Scale</td>
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<td>Teaching Assistant</td>
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Chapter 1

Background

‘Effective social skills programming should be an integral component of educational programming for children with ASD’ (Bellini, Peters, Benner & Hopf., 2007, p.153).

The opening chapter of this thesis provides the context for the design of an intervention for students with Autism Spectrum Conditions (ASC) attending mainstream secondary schools. The intervention, named ‘Reciprocal Effects Social Inclusion Intervention’ (RESII), was designed to address the negative social outcomes experienced by students with ASC included in mainstream schools, and the limitations of approaches currently available to improve them. This chapter begins with a brief overview of the definition and prevalence of ASC (section 1.1), before summarising the policy relevant to the education of children with ASC (section 1.2). The third section (section 1.3) shows that despite policy being in place to enable students with the condition to thrive in mainstream settings, the social experiences of included students with ASC remain overwhelmingly negative. The chapter ends with a review of approaches to improve these social outcomes, and the limitations inherent in their design, delivery and evaluation (section 1.4). It is concluded that the social needs of included students with ASC are not currently being met, and that new approaches, such as RESII, are desperately needed to address them.

1.1 Definition and prevalence of ASC

ASC is a lifelong, developmental disability characterised by a ‘triad of impairments’ in social interaction (e.g. reduced interest in initiating interactions with others), social communication (e.g. decreased ability to share ideas with others), and social imagination (e.g. difficulty predicting the consequences of ones own or others’ behaviour) (Wing & Gould, 1979; Wing, Gould & Gillberg, 2011). These impairments are likely to emerge within the first three years of childhood, and continue into adulthood (Kanner, 1943; Wing et al., 2011). Originally viewed as an emotional disorder caused by parental neglect (Bettelheim, 1967; Kanner, 1943), ASC is now widely accepted as a neurological disorder related to atypical brain development (Mesibov, Adams & Schopler, 2000). The precise nature of the neurological difficulty remains contested, with a number of competing theories put forward to account for the presence of autistic symptoms. Examples include:
‘mindblindness’, which states that people with ASC lack a ‘theory of mind’, preventing them from understanding the mental states of others (Baron-Cohen, 2000); presence of ‘weak central coherence’, whereby people with ASC have a detail-focused processing style, preventing them from seeing the wider context in which a social interaction occurs (Frith & Happe, 2005); and the absence of ‘mirror neurons’ which have been implicated in social interaction and imitation (Ramachandran & Oberman, 2006). Although important to understanding the nature of the social difficulties experienced by individuals with autism, a deeper examination of these theories is beyond the scope of this thesis. See Frith and Happe (2005) for a concise overview of the competing theories in the field.

Whilst social-cognition deficits are an enduring feature of ASC (Bellini et al., 2007; Laugeson, Frankel, Gantman, Dillion and Mogil, 2012), individuals with a diagnosis of autism vary in their level of impairment, and as a result autism is regarded as a spectrum disorder. The Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5, American Psychiatric Association, 2013), which is one of the most widely used diagnostic criteria for autism, uses the term ‘Autism Spectrum Disorder’ (ASD) to refer to any individual on this spectrum, including those previously labelled with Asperger syndrome, autism or pervasive developmental disorder- not otherwise specified (PDD-NOS). It is felt by some, however, that the use of the word ‘disorder’ places undue emphasis on the difficulties experienced by individuals with autism, and overlooks the strengths they possess, such as exceptional memory, persistence, loyalty and unique and creative ways of approaching problems (Baron-Cohen et al., 2009; O’Neil, 2008; Morewood, Humphrey & Symes, 2011). In light of this, the term ‘Autism Spectrum Condition’ (ASC) is offered as an alternative label (O’Neil, 2008), and it is the term that is adopted throughout this thesis.

The past 20 years has seen an increasing number of children and young people being diagnosed with ASC (Fombonne, 2009). Prior to the 90’s, the estimated ASC prevalence rate was four per 10,000 children (Prior, 2003). Later, Wing (1993) reported an increase to as many as 16 per 10,000 children. Today, the median global prevalence rate of ASC is estimated to be over 60 in 10,000 children although there is variation within and between countries (Elsabbagh et al., 2013). Prevalence rates in Europe, for example, range from 30 in 10,000 to 116 in 10,000. It is uncertain
whether differences in prevalence rates over time or location are the result of differences in diagnostic methods and included samples, or due to genuine increases in the numbers of individuals with the condition (Fombonne, 2009; Prior, 2003; Wing, 1993). Regardless, it is clear that there are now more children with a diagnosis of ASC than at any other time (Matson & Kozlowski, 2011). This is especially true for males, who are six times more likely to be diagnosed with the condition than females (Bitterman, Daley, Misra, Carlson & Markowitz, 2008), although again, it is unclear whether this is in fact the result of changing diagnostic practices (Jick & Kaye, 2003), or gender biases in the instruments used to diagnose ASC, and in the expression of autistic symptoms, (Baron-Cohen et al., 2009).

1.2 The education of students with ASC
The rising numbers of children and young people receiving a diagnosis of ASC has coincided with the global movement towards inclusive education, broadly defined as ‘increasing the participation of all learners in education.’ (Ainscow, Dyson & Weiner, 2013, p.4), preferably in mainstream settings (UNESCO, 1994). Consequently, greater numbers of students with disabilities, including ASC, are receiving an education than ever before (Crosland & Dunlap, 2012; Dybvik, 2004; Keen & Ward, 2004). This is especially true of England, where this PhD study takes place, which has seen the total number of students (aged 5-16 years) identified as having the condition almost double from 39,140 in 2006 to 76,015 in 2014 (Department for Education and Skills 2006; Department for Education 2014), with between 50 to 70% of them attending mainstream settings throughout this time period (Barnard, Prior & Potter, 2000; Department for Education and Skills 2006; Department for Education 2014; Waddington & Reed, 2006). Furthermore, the same figures show that over the last eight years, students with ASC have moved from comprising .5% of the whole school population to 1%, and from 6.4% of all children with Special Education Needs (SEN) to 11.3%, suggesting that as a group, they have grown substantially faster than other groups of learners. Educational inclusion in England is supported by policy that sets out the rights of students with disabilities and SEN. This section provides an overview of that policy in relation to the education of children and young people with ASC.
A child is defined as having SEN if ‘they have a learning difficulty which calls for special educational provision to be made for them.’ (Education Act, 1996, p. 77). In practice, this means a student may be identified as having SEN if they are unable to achieve the expected levels of academic or social attainment without additional support from their teachers and/or school (SENDA, 2001). Whilst approximately two thirds of children diagnosed with ASC do not have a comorbid learning disability (Baird et al., 2006), all of those attending special schools, and an estimated 89% of those attending mainstream schools are identified as having significant SEN (Keen & Ward, 2004). Students with ASC can be regarded as having SEN through the extent to which their triad of impairments impacts on their ability to access school curricula and other activities within their educational setting. For example, their difficulties in social interaction may affect their ability to learn in a social setting; their difficulties in social communication can influence their processing of verbal instructions from teachers; and their difficulties with social imagination mean they may find transitioning from one activity to another challenging (Morewood et al., 2011). Thus, the stability of placement figures in England over the last eight years may be in part due to the fact that the vast majority of students with ASC are likely to be identified as having SEN, and not all of their needs can presently be met in mainstream schools.

Since students with ASC in England are likely to be classified as having SEN, their educational experience is influenced by a number of key national policies and initiatives relating to the education of students with SEN. One such policy is the ‘Special Educational Needs and Disability Act’ (SENDA, 2001), which built on the earlier ‘Disability Discrimination Act’ (1995) to hold schools legally responsible for providing support for children with SEN. Under the act, the identification of, and support for, students with SEN is the responsibility of the school headteacher, although this role is typically filled on their behalf by a Special Educational Needs Coordinator (SENCo). Regardless of who takes on the role, the school must follow statutory guidelines laid out in the SEN Code of Practice (2014) that relate to the assessment, identification and provision of students with SEN aged 0 to 25 years (2014). SENDA requires schools to provide the resources students with SEN need to make academic and social progress, irrespective of the setting in which they are based.
Funding to support children with SEN is taken from the school budget, with the amount spent being decided by the school. It is estimated that approximately £1,400 additional funding is spent per SEN student (McNally, 2009). The support offered to students with SEN in England is highly decentralised, and typically decided by the students’ school or teachers. The SEN Code of Practice (2014) and other guidance documents do, however, promote particular strategies or approaches. For students with ASC, English guidance documents (e.g. Jones et al., 2008) tend to place less emphasis on specific interventions, and more on general, school-level strategies. This is reflected in the practice of mainstream schools in England, where practitioners tend to use a range of interventions and techniques to meet the needs of individuals with ASC, in a ‘combined skills approach’ which involves a combination of generic and autism-specific interventions and pedagogies (Guldberg et al., 2011). This approach also includes the use of Teaching Assistants (TAs) to support students with ASC in lessons (Symes & Humphrey, 2012). Thus, although students with ASC may access support from outside agencies, such as speech and language and occupational therapy (Frederickson, Jones & Lang, 2010; Morewood et al., 2011), or from ASC teams within local authorities (McNally, 2009), the majority of their support comes from within the educational setting in which they are based.

Despite the aforementioned policy, students with ASC are still likely to be disadvantaged socially. Whilst students with ASC have been shown to make significant improvements in their social skills in special schools (Reed, Osborne & Corness, 2010), the findings in mainstream settings present a mixed picture. For example, whilst preschool age children with ASC attending mainstream schools may make greater gains in social functioning than those who do not (Pellicano, 2012), older students in special schools make greater gains in conduct and socialisation than their mainstream counterparts (Reed, Osborne & Waddington, 2012). This is important, since the link between social skills and social status is strongest in children with behavioural difficulties (Frostad & Piji, 2007), and students with ASC in mainstream schools are likely to experience significant emotional and behavioural problems (Osborne & Reed, 2011), particularly compared with their typical peers (Ashburner et al., 2010). Furthermore, this relationship grows stronger with age, suggesting included students with ASC in mainstream schools may experience more
negative social outcomes as they move through their school life. Taken together, the
evidence suggests that students with ASC included in mainstream schools in England
are at risk of negative social outcomes. Section 1.3 examines the social experiences of
included students with ASC in more detail.

1.3 The social experiences of included students with ASC
Individuals with ASC experience difficulties in social interaction throughout their
lifespan (Bauminger, 2002; McConnell, 2002; Pellicano, 2012), which can have
profound effects on their quality of life. For example, their limited experience of
friendships in early life may impair their socioemotional development (Bauminger,
Shulman & Agam, 2003); they may struggle to develop meaningful romantic
relationships as they grow older (Baron-Cohen & Wheelwright, 2003); experience
anxiety and depression (Diamont & Windholt, 1981), and struggle to live
independently (Howlin, Goode, Hutton & Rutter, 2004). Taken together, these
negative outcomes can amount to an estimated lifetime cost of £1.23 million for
individuals with ASC with an intellectual disability, and £.8 million for those without
(Knapp, Romeo & Beecham, 2009). Addressing the triad of social impairments at the
core of the condition is therefore vital if individuals with ASC are to live fulfilling
lives and reach their potential.

Inclusion in mainstream classrooms is perceived by some to offer the best
opportunity for these improvements to be achieved (Leach & Duffy, 2009;
McConnell, 2002), since it enables students with ASC to develop their social skills
through modelling the behaviour of their peers (Boutot & Bryant, 2005; Connor,
2000). Evidence supporting this assumption is, however, sparse. In fact, students
with ASC attending mainstream schools can experience a range of negative social
outcomes, and these are examined in this section. This section is organised around
four areas of social functioning namely friendship, loneliness, social acceptance and
social support and bullying, drawn from the foci of the studies considered in this
review.

1.3.1 Friendship
Few studies examining friendship in students with ASC provide a definition of the
term (Petrina, Carter & Stephenson, 2014). However, one conceptualisation that
appears to be useful identifies closeness (e.g. a strong affective bond), intimacy (e.g. high levels of trust) and companionship (e.g. spending free time together) as key indicators of friendship (Bauminger, Solomon & Rogers, 2010; Bauminger, Shulman & Agam, 2004). Students who have friendships high in these three characteristics are more likely to report higher self-worth (Bauminger et al., 2004), whilst those with poor perceived friendship quality are more likely to experience symptoms of depression (Whitehouse, Durkin, Jaquet & Ziatas, 2009). These findings indicate that friendship can play an important role in the mental wellbeing of all children. However, it is important to acknowledge that students with ASC may not understand friendship in the same way as their typical peers (Whitehouse et al., 2009). Whilst students with ASC can recognise ‘friendship’ as well as typical peers, for example when completing a picture task, they are most likely to identify companionship as a salient feature of friendship, and pay less attention to closeness and intimacy (Bauminger et al., 2004). Older students with the condition have been shown to emphasise the importance of shared interests in maintaining friendships (Daniel & Billingsley, 2010), and their parents acknowledge that their children spend the majority of their time with friends engaged in shared activities, such as playing video games (Petrina et al., 2014). Furthermore, engaging in shared activities is related to higher companionship scores in students with ASC (Kuo, OrsmoND, Cohn & Coster, 2013). Taken together, these findings suggest that students with ASC may define friendships in terms of physical, rather than emotional proximity (Bauminger et al., 2004). However, students with ASC may not necessarily be disadvantaged by their more narrow definition of friendships. Shared interests, such as playing football, can be viewed as offering protection against bullying (Hebron, Humphrey & Oldfield, 2015).

Students with ASC differ not only in the quality of their friendships, but in the quantity of them too. Overall, students with ASC are unlikely to have no friends, and most are able to identify a best friend (Locke, Ishijima, Kasari & London., 2010; Bauminger & Kasari, 2000; Chamberlain, Kasari & Rotheram-Fuller, 2007), although the total number of friendships tends to be lower than for students with other, or no SEN (Rowley et al., 2012). Some of these friendships are reciprocated, and verified by peers, parent and teacher reports (Calder, Hill & Pellicano, 2013; Rowley et al., 2012). Interestingly, students with ASC do not tend to be completely socially
isolated, yet some typical peers may be (Bauminger & Kasari, 2000). However, students with ASC are less likely to be recognised as part of a friendship group (Locke et al., 2010) and have fewer reciprocated friendships (Chamberlain et al., 2007; Kasari, Locke, Gulsrud & Rotheram-Fuller, 2011), than their typical peers. Although it has long been assumed that children and young people with ASC do not want to make friends (Daniel and Billingsley, 2010), more recent research findings suggest that lack of motivation does not explain why they have fewer friendships than their typical peers (Calder et al., 2013; Whitehouse et al., 2009). For example, students with ASC do report self-determined motivation to develop friendships, although this tends to be lower than their typical peers (Whitehouse et al., 2009). Furthermore, whilst social motivation may be linked to friendship quantity and quality in individuals without ASC, this same pattern may not be present in those with the condition (Jobe & Williams White, 2007). This may be because this relationship is influenced by level of social skills, and even if motivation to engage is high, it may not result in friendships if social skills are low (Jobe & Williams White, 2007). Indeed, students with lower levels of social-skills impairment report higher friendship quality (Rowley et al., 2012), whilst difficulties in making and maintaining friendships (Connor, 2000; Daniel & Billingsley, 2010; Locke et al., 2010) and a lack of qualities associated with being a ‘good’ friend (Locke et al., 2010) are all provided as explanations as to why students with ASC do not have a wider circle of friends, even if they would like to. It seems that the social skills of students with ASC play an important role in the development of meaningful friendships.

1.3.2 Loneliness
Feelings of loneliness can arise when an individual is not experiencing the quantity and quality of social relationships they would like (Cassidy & Asher, 1992). Accordingly, understandings and reports of friendship and loneliness are closely related in typical peers (Bauminger & Kasari, 2000). Since students with ASC are likely to have few friendships, and these friendships are likely to be low in closeness and intimacy, we would expect them to report higher levels of loneliness than typical peers, and research findings appear to support this assumption. Students with ASC, especially those attending high school, report higher levels of loneliness than their typically developing peers (Bauminger & Kasari, 2000; Bauminger et al., 2003;
Locke et al., 2010), although these levels are not necessarily high. For example, Whitehouse et al., (2009) recorded average loneliness scores for students with ASC as 18 out of a possible 44 points. As with typical peers, students with ASC report higher levels of loneliness when their overall perceived friendship quality is low (Whitehouse et al., 2009). Furthermore, students with ASC who see themselves as more socially involved than their peers report, have been found to report low levels of loneliness, despite being isolated relative to their typical peers (Chamberlain et al., 2007). Taken together, these findings suggest that friendship quantity and quality is an important predictor of loneliness in students with ASC.

A number of contradictory findings have, however, also been reported. Firstly, some studies have shown that overall friendship quality does not predict loneliness in students with ASC in the same way as it does for typical peers, for example with only friendships high in conflict and/or betrayal doing so (Whitehouse et al., 2009). This is worrying, since experience of conflict in friendships seems to increase for those with ASC with age (Bauminger et al., 2008), perhaps explaining why loneliness is greater in older students. Secondly, even though nearly all students with ASC report having at least one friend, this knowledge does not necessarily lessen feelings of loneliness (Bauminger & Kasari, 2000), and in some cases reported loneliness is almost unrelated to their social networks (Chamberlain et al., 2007). Finally, typically developing peers display a clear pattern of associations between loneliness and their understanding of, and engagement in, peer interactions (Bauminger et al., 2003). Indeed, loneliness is often the key driver for typical peers seeking out and participating in social activities (Bauminger et al., 2003). In students with ASC, however, participating in social interaction is not linked to a reduction in loneliness (Bauminger et al., 2003).

A possible explanation for these discrepancies is that loneliness and friendship are not linked in the same way for students with ASC as they are for typically developing students (Bauminger & Kasari, 2000), possibly due to differing conceptualisations of friendship (described in the previous section), or loneliness. For example, when asked to define loneliness, typical peers tend to focus on two elements: a social component, such as exclusion by others, and an emotional component, such as feelings of sadness (Bauminger & Kasari, 2000). When providing their own definitions, students with
ASC are likely to define loneliness in terms of the social component only (Bauminger & Kasari, 2000). This is relevant here, as having an awareness of both elements is consistently associated with reported loneliness (Bauminger & Kasari, 2000). A possible conclusion then is that whilst students with ASC may report being more lonely, they do not necessarily feel greater levels of sadness (Bauminger & Kasari, 2000). This is, however, unlikely given that higher levels of loneliness in students with ASC have been linked to higher levels of depressive symptoms (Whitehouse et al., 2009). Furthermore, if students with ASC are presented with definitions of loneliness, they are as good as their typical peers at understanding both elements. For example, they are just as likely to appreciate that having a close friend can protect them from feeling sad (the emotional), but also that it is possible to be surrounded by people and still feel lonely (the social) (Bauminger et al., 2003).

1.3.3 Social acceptance and support

Students with ASC who feel they are more social accepted by their peer group are less likely to report feeling lonely (Bauminger et al., 2004). It is worrying, then, that the level of social acceptance and support currently experienced by students with ASC attending mainstream schools is low. Whilst students with ASC are likely to have at least one best friend, they tend to be isolated from the rest of their peers, and often find themselves on the periphery of their class social structure (Locke et al., 2010; Kasari et al., 2011). The average number of social connections is lower for students with ASC than for their peers, and these connections can be fragile (Chamberlain et al., 2007). For example, in some classes students with ASC are connected to the social structure by a single link with a particularly popular student. In other cases, the student may form part of a small social grouping, separate from the more prominent social networks (Chamberlain et al., 2007). This vulnerability is mirrored in the finding that students with ASC report lower levels of social support from classmates and friends than students with dyslexia or no SEN (Humphrey & Symes, 2010a). Overall, students with ASC are more likely to be rejected and less likely to be accepted by their peers than typical students (Jones & Frederickson, 2010; Symes & Humphrey, 2010), putting them at an increased risk of loneliness.

A potential reason for this low social acceptance is that students with ASC do not necessarily seek out interactions with their peers, thus reducing opportunities for
developing supportive relationships with their classmates (Humphrey & Symes, 2011). Indeed, there is evidence that students with ASC seek out secluded spaces away from their peers, such as the library, during break and lunch times (Connor, 2000). Furthermore, typically developing students are much more likely to participate in peer interaction (both initiations and responses) compared with students with ASC (Bauminger et al., 2003). In fact, students with ASC may interact at half the rate of their typical peers (Bauminger et al., 2003). Additionally, not only do they display fewer social behaviours, students with ASC also engage in different social behaviours. They spend more time engaged in solitary behaviours, and less time engaged in cooperative ones than both students with dyslexia or no SEN (Humphrey & Symes, 2011). Finally, when they do interact with peers, their peers are more likely to engage in acts of instrumental verbal aggression towards them, than the peers of students with dyslexia or no SEN (Humphrey & Symes, 2011). These initiations from classmates can be met with reactive aggression from the students with ASC, meaning that social interactions with peers are unlikely to be a positive experience.

The above findings suggest that social isolation is a problem specific to students with ASC, rather than students with SEN more generally. A possible explanation for this is that the social-skills profile of students of ASC, already implicated in the development and maintenance of friendship for these learners, influences the extent to which they are accepted by their peers. Supporting this assumption, students with ASC display fewer pro-social behaviours, such as cooperation, and greater anti-social behaviours, such as shyness, than their typical peers, a pattern which is related to lower social acceptance in typical peers (Jones & Frederickson, 2010). However, this relationship appears to differ for students with ASC: higher pro-social behaviour is not always linked to greater social acceptance (Jones & Frederickson, 2010). It is possible that this is because social impairments of students with ASC may lead pro-social behaviours to be perceived as ‘odd’ by their peers (Jones & Frederickson, 2010). Indeed, students with ASC themselves identify that getting along with classmates can be a challenge, and attribute this to their own social skills: ‘I’m a bit of a quiet character, I sort of struggle to… join in with groups of people’ (Humphrey & Symes, 2010b, p. 88). Conversely, it may be that the more active a student is socially, the less forgiving their peers are of any behaviours that appear odd (Jones & Frederickson, 2010). This may be reflected in the vulnerability students with ASC
report feeling in interactions with their classmates (Humphrey & Symes, 2010b). Thus, whilst increasing peer acceptance and support of students with ASC may protect these students from loneliness, achieving this is likely to involve developing the student with ASC’s social skills alongside peer awareness of the condition (Humphrey & Symes, 2011).

1.3.4 Bullying

The level of social support a student with ASC receives is important not only because it may reduce loneliness, but also because it is inversely related to bullying frequency (Humphrey & Symes, 2010a), as is friendship quantity (Cappadocia, Weiss & Pepler, 2012). It is perhaps unsurprising then, given the low level of friendships, social acceptance and support from peers, that nearly all students with ASC experience bullying and teasing to some degree throughout their school life (Humphrey & Hebron, 2014; Humphrey & Lewis, 2008). In fact, students with ASC report both the lowest levels of social support, and the highest frequency of bullying compared with students with dyslexia or no SEN (Humphrey & Symes, 2010a), although, interestingly teachers only report students with ASC as experiencing more bullying than their typical peers, not more than their peers with SEN (Rowley, et al., 2012). This makes it less clear how the profile of students with ASC places them at an increased risk of bullying.

Bullying can be defined as the presence of unwanted aggressive behaviour(s) directly or indirectly inflicted on an individual by another individual, or group of individuals, across time, which results in physical, psychological or social harm to the recipient (Gladden, Vivolo-Kantor, Hamburger & Lumpkin, 2014). For students with ASC, bullying can take the form of name-calling: ‘They just say ‘Oh hello Harry Potter’ often like that it gets on my nerves…’ (Humphrey & Lewis, 2008, p. 34); being taken advantage of: ‘…other people pick on me and try to get me to fight others’ (Connor, 2000, p. 291); or physical violence: ‘Two girls; one hits me when I don’t say hello, the other hits me every time I say hello’ (Connor, 2000, p. 291). Bullying is not limited to unstructured times, and can occur during lessons: ‘Sometimes those one or two idiots like to throw things at you in lessons, or keep shouting your name’ (Humphrey & Symes, 2010b, p. 87). Perhaps the most worrying feature of the
bullying is that it appears to be sustained across time and setting (Humphrey & Lewis, 2008).

As with friendships and social acceptance, the social impairments characteristic of ASC may mean that those with the condition are at a greater risk of being bullied. Whilst there is no clear relationship between lower social skills and bullying (Sreckovic, Brunsting & Able, 2014), social skills may influence the extent to which students with ASC are aware of and report bullying, or interact with their peers (Rowley et al., 2012; Sreckovic et al., 2014). For example, students with ASC with less impaired social skills are more likely to report being bullied, suggesting they are more socially aware of what those around them are doing (Rowley et al., 2012), whilst other students may not always be aware when bullying is taking place (Hebron et al., 2015). Findings that those students who have greater difficulty making friends are more likely to be bullied (Zablotsky, Bradshaw, Anderson & Law, 2014) contradicts this assumption, however, as does the fact that parental reports also indicate that students with ASC experience greater levels of bullying than students with other or no SEN (Rowley et al., 2012), although it is not clear on what information they base their judgements. A possible alternative is that those with higher social skills are more likely to be motivated to engage with their peers, thus putting them at a greater risk of being bullied, (Jobe & Williams White, 2006), especially as their behaviour may not be accepted by their classmates (Jones & Frederickson, 2010). Taken together, these findings show that the role of social skills as a risk factor in bullying for students with ASC is likely to be complicated, and other factors, such as perceptions of teachers and parents, and acceptance from peers are likely to also play an important role.

Summary

This section has shown how students with ASC included in mainstream schools can experience a range of negative social outcomes in these settings. Despite students generally being able to identify some typical peers with whom they are friends, a number of them would like more, and report feeling lonelier than their typical peers. They receive limited social acceptance from their peers, lower levels of social support and experience higher levels of bullying than students with other, or no, SEN. Furthermore, these outcomes are interlinked: fewer friendships and lower social
acceptance and support lead to greater levels of loneliness, whilst the likelihood of bullying is increased when social acceptance and support is lower. Thus, improving the social outcomes of students with ASC is likely to involve approaches that tackle two or more of these areas simultaneously. In addition, successful approaches are likely to be those that tackle not just the social-skills impairments that underlie ASC but also the understanding of the condition amongst their peers. For example, whilst social-skills training could potentially increase the likelihood of students with ASC making and maintaining friends, it is unlikely to reduce bullying if their peers are not more accepting of their condition.

The outcomes presented here suggest that despite inclusive educational policy, mainstream schools are not currently meeting the social needs of students with ASC. What is not clear, however, is whether the negative social outcomes arise because students are not receiving the support they require (Bellini et al., 2007), or because the support they are receiving is inadequate (for example, addressing just one of the issues underlying their negative outcomes). Traditional approaches to meeting the social needs of students with ASC, which typically involve teaching them social skills (Flynn & Healy, 2012), have been criticised for their failure to take into account the role others can play in the social outcomes of students with ASC (Bauminger, 2002), the educational setting (Parsons & Kasari, 2013), or the needs of older students (Webb, Miller, Pierce, Strawser & Jones, 2004), and for the poor generalisation of intervention gains to other contexts (Williams White, Keonig & Seahill, 2007). The following section presents an overview of the interventions currently found in the literature, and highlights some of their inherent limitations. The limitations of current approaches to improving the social outcomes of included students with ASC are central to the design of RESII, and as such, the implications of these limitations for practice are considered in greater depth in the following chapter.

1.4 Current approaches to improving the social outcomes of students with ASC

There is an abundance of interventions designed to improve the social outcomes of children and young people with ASC (Strain, Schwartz & Barton, 2011). McConnell (2002) classifies these interventions as either (1) ecological variations, which involve changing the physical or social environment, (2) collateral skills interventions, which
involve training in seemingly unrelated skills, (3) child-specific interventions, which involve direct training in social skills, (4) peer-mediated interventions (PMI), which involve peers in the teaching of social skills, and (5) comprehensive interventions, which involve a combination of two or more of the first four approaches. Whilst there does not appear to be one approach that is necessarily superior to the others in all circumstances (Guldberg et al., 2011; Parsons, Gulberg, MacLeod, Jones, Prunty & Balfe, 2011), review articles have identified those that seem the most promising in terms of improving social outcomes. McConnell (2002) concluded that, of the five approaches, PMI appeared most successful for use with younger students, in terms of both improving social skills, and producing qualitative improvements in the social outcomes of students with ASC, specifically in their interactions with their typical peers. Similar recommendations have been reported elsewhere, including for use with older students with the condition (Chan et al., 2009; Odom, Collet-Klingenberg, Rogers & Hatton, 2010; Reichow & Volkmar, 2010; Wong et al, 2013). A possible reason for the superior outcomes of PMI is the inclusion of others, namely peers, in their delivery. This is supported by the fact that the second most promising approach identified by McConnell (2002) was comprehensive interventions, some of which included child-specific approaches combined with opportunities to interact with typical peers. It was concluded that ‘interventions directed to both young children with autism and their typical peers can produce pronounced effects on social interaction…’ (p.365), both within, and outside of, the intervention setting.

Bond, Symes, Hebron, Humphrey & Morewood (2016) also identified comprehensive interventions as a promising approach to improve the social outcomes of students with ASC, but noted that evidence for their use within educational settings, and secondary schools in particular, is limited. This is apparent when examining the types of interventions reported in the literature for this age group. Ten studies reporting on the efficacy of nine interventions for secondary school students with ASC are presented in table 1.1. These studies were included in two systematic literature reviews of interventions for use in the education of children and young people with ASC, covering the period 2002 to 2013. They therefore present a ‘snap shot’ of the approaches used with this group of learners, and include some of the most recent studies in the field. Using the classification system proposed by McConnell (2002), seven of the interventions were child-specific, one was an ecological variation, and
one was a PMI. This is particularly worrying, since although child-specific interventions, which involve the direct teaching of social skills, appear to be a popular approach (Bellini et al., 2007; McConnell, 2002), and although there is evidence that they can improve social skills (Cappadocia & Weiss, 2011; McConnell, 2002; Parsons, Gulberg, MacLeod, Jones, Prunty & Balfe, 2009; Schreiber, 2011; Williams White et al, 2007), they do not appear to impact on the wider social outcomes of students with ASC (Bellini et al., 2007; Bond et al., 2016; Flynn & Healy, 2012; McConnell, 2002; Schreiber, 2011), perhaps due to the important role others, such as peers, can play in these outcomes. Indeed, Bellini et al., (2007) conclude that: ‘…social-skills interventions have been minimally effective for children with ASD’ (p.153). Furthermore, although it was acknowledged that outcomes for older students were slightly better than for their younger counterparts, this was attributed to the relatively small number of studies involving this population, rather than an indication of their effectiveness with them (Bellini et al., 2007)
<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Targeted outcomes</th>
<th>Intervention type</th>
<th>Intervention</th>
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<tr>
<td>Bauminger (2002)</td>
<td>15 (11 boys, 4 girls) children and young people with high functioning autism, aged 8-17 years (mean age 11 years), attending mainstream schools.</td>
<td>Social cognition Emotional understanding Social interaction</td>
<td>Child-specific (general instruction, adult-mediated prompting and generalisation techniques)</td>
<td>Intervention agent (teacher) explicitly taught participants social skills in a group. Content focused on friendship, understanding simple emotions, and social initiation. Skills were practised with a typical peer, and encouraged at home by parents.</td>
<td>Improvements in all three targeted outcomes. Limitations of the study include a lack of control group, and potential researcher bias due to the intervention and research being conducted by the same researcher.</td>
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<td>Broderick, Caswell, Gregory, Marzolini &amp; Wilson (2002)</td>
<td>9 (male) young people with Asperger’s syndrome, aged 12-15 years, attending mainstream schools</td>
<td>Social skills Self-esteem</td>
<td>Child-specific (general instruction, adult-mediated prompting)</td>
<td>Intervention agent (unclear) taught social skills in a group. Session content focused on specific social skills, such as eye contact. The skills were then practiced in a community setting (youth club) with support from adult helpers (various, e.g. undergraduate psychology students, SENCOs, youth leaders)</td>
<td>Confidence in social skills increased. By the end of the intervention the participants did not need the help of their adult helpers when socialising in the youth club, which was taken to indicate improvement in social skills. Limitations of the study include a lack of control group, and absence of outcome measures within the educational setting</td>
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<td>Davis, Boon, Cihak &amp; Fore (2010)</td>
<td>3 (male) young people with Asperger’s syndrome, aged</td>
<td>Initiate and maintain ‘other-focused’ conversations with</td>
<td>Child-specific (general instruction, generalisation)</td>
<td>Intervention agent (teacher) taught conversational skills one-to-one. Session content focused on the skills needed</td>
<td>Participants spent 215% more time engaged in other-focused conversations in the intervention setting, and this</td>
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<td>Source</td>
<td>Sample Description</td>
<td>Intervention Content</td>
<td>Intervention Details</td>
<td>Limitations</td>
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<td>Koegel, Vernon, Koegel, Koegel &amp; Paullin (2012)</td>
<td>3 (male) young people with ASC, aged 11-14 years, attending mainstream schools</td>
<td>Social initiation, Engagement in conversations</td>
<td>Intervention agent (unclear) ran a lunchtime club open to all students (including typical peers) based around the special interests of each student with ASC. Involved participating in activities related to the special interest e.g. a card game.</td>
<td>Participants increased the percentage of time initiating or engaging in conversations with their typical peers. Limitations of the study include a lack of control group, small sample size, and absence of outcome measures within the child’s educational setting.</td>
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<td>Laugeson, Frankel, Mogil &amp; Dillon (2009)</td>
<td>33 (28 male, 5 female) young people with high functioning autism and Asperger’s syndrome, aged 13-17 years (mean age 14 years), half attending mainstream schools</td>
<td>Social skills, Social interaction, Friendship</td>
<td>Intervention agent (clinical psychologist) taught social skills in a group. Session content focused on five key areas of social functioning e.g. social interaction and coping with bullying. The content was taught through didactic instruction, role-playing, modelling and homework. Parents attended a simultaneous group where</td>
<td>The treatment group showed greater social skills knowledge, were more likely to host friends, and reported a greater quality of friendship than the control group. Effects did not generalise to educational setting.</td>
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<td>Study</td>
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<td>Laugeson et al., 2012</td>
<td>28 (22 male, 5 female) young people with ASC aged 12-17 years (mean age 14 years), attending mainstream secondary schools</td>
<td>They learnt how to support the development of the targeted skills.</td>
<td>The treatment group showed greater social-skills knowledge and were more likely to host friends than the control group. These outcomes were maintained at 14 weeks, and generalised to the educational setting.</td>
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<td>MacKay, Knott &amp; Dunlop (2007)</td>
<td>46 children and young people with ASC, mean age 14 years, majority attending mainstream schools</td>
<td>Social skills</td>
<td>Intervention agent (various, e.g. speech and language therapist, teacher, psychologist) taught social skills in a group. Session content focused on social and emotional perspective taking, conversation skills and friendship skills. The skills were taught through group games, discussions, role plays and community outings.</td>
<td>Participants and their parents both reported improvements in social skills and social competence following the intervention. Large effect sizes. Limitations of the study include a lack of control group, and absence of outcome measures within the child’s educational setting.</td>
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<td>Minihan, Kinsella &amp; Honan (2011)</td>
<td>5 (4 male, 1 female) young people with Asperger’s syndrome aged 15-</td>
<td>Social skills</td>
<td>Intervention agent (SEN teachers) taught 10 specific social skills in a group. The teachers were trained to deliver the intervention by an</td>
<td>Participants had clinically significant improvements in social skills, but this did not generalise to the home setting. Limitations of the</td>
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<td>Study</td>
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<td>Methodology</td>
<td>Outcomes</td>
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<td>Trottier, Kamp &amp; Mirenda (2011)</td>
<td>2 (male) non-verbal young people with ASC, aged 11 years, attending mainstream schools</td>
<td>Frequency and appropriateness of communicative acts</td>
<td>Peer mediated</td>
<td>Intervention agents (typical peers) were trained to prompt students with ASC to use a speech generating device during social games. The peer training was successful, but this did not result in compelling changes in the frequency and appropriateness of communicative acts for students with ASC engaged in. Limitations of the study include a lack of control group, small sample size, and absence of outcome measures within the child’s educational setting.</td>
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<td>Webb, Miller, Pierce, Strawser &amp; Jones (2004)</td>
<td>10 (male) young people with high functioning autism, aged 12-7 years (mean age 14 years), attending mainstream schools</td>
<td>Social skills needed to successfully engage in group work</td>
<td>Child-specific (general instruction)</td>
<td>Intervention agent (teacher) taught social skills in a group. Session content focused on five social skills needed to successfully engage in group work. The skills were explicitly taught and then practiced through role play and games. Participants mastered the five skills but findings did not generalise beyond the intervention setting. Limitations of the study include a lack of control group, and potential bias due to the intervention and research being conducted by the same researcher.</td>
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In line with McConnell’s (2002) findings, all seven of the child-specific interventions resulted in improvements in social skills, but there was only evidence of generalisation beyond the intervention setting for three of these (Bauminger, 2002; Davis et al., 2010; Laugeson et al., 2012). Interestingly, these were three of only four interventions that included generalisation techniques in their delivery. It is possible that the fourth study (MacKay et al., 2007) also resulted in generalisation, but this could not be established as no outcome measures were used in the participants’ education setting. The ecological variation intervention (Koegel et al., 2012) resulted in observable social gains, specifically in the duration and quality of social interactions with typical peers. This was one of only two studies that reported qualitative improvements in the social outcomes of students with ASC. The other study (Davies et al., 2010) was a child-specific approach, which also included structured interactions with peers. Overall, the findings from the studies in table 1.1, combined with the recommendations from other reviews of social interventions for students with ASC, suggest that the best social outcomes can be achieved through the inclusion of peers in interventions (McConnell, 2002; Schreiber, 2011). Despite this, typical approaches tend not to include others in their delivery, especially peers, (Bauminger, 2002), and this is possibly because they seldom take place in education settings. For example, although the interventions included in table 1.1 all involved students attending mainstream schools, four of them did not take place in their education setting, and of the five that did, only one took place within the typical routines of the school day (Koegel et al., 2012).

The above findings highlight a number of limitations with the approaches currently used to improve the social outcomes of secondary school students with ASC. Firstly, although there is evidence that involving peers can result in the best outcomes for older students with the condition (Bond et al., 2016; Chan et al., 2009; Odom et al., 2010; Reichow & Volkmar, 2010; Wong et al, 2013), interventions seldom do so in practice. This is possibly because, secondly, intervention studies do not always take place in school settings (Bond et al., 2016), or form part of the students’ typical educational experience (Crosland & Dunlap, 2012; Reichow & Volkmar, 2010). It is important to note that whilst review articles may only include studies with a level of methodological rigour that could potentially exclude studies conducted in practice settings (e.g. Reichow & Volkmar, 2010), this limitation was also evident in the Bond
et al. (2016) review which explicitly chose studies with direct relevance to school settings. Thirdly, the available evidence regarding social-skills interventions for older students is limited (Bellini et al., 2007; Bond et al., 2016; Crosland & Dunlap, 2012; Parsons et al., 2009), making it difficult to draw reliable conclusions about what works best with this group of learners (Bellini et al., 2007). Fourthly, although four of the studies in table 1.1 included strategies to promote generalisation of intervention gains to the students’ wider educational or social setting, poor generalisation of social skills gains remains a consistent limitation of social-skills interventions (Crosland & Dunlap, 2012; Mackay et al., 2007; White et al., 2007). It seems clear that if the negative social experiences of included students with ASC presented in section 1.3 are to be improved, then these limitations need to be understood and specifically addressed during the design and development of new interventions. The remainder of this section therefore examines these limitations in more detail.

1.4.1 Limitations of current approaches

At present, child-specific interventions, which involve the direct teaching of social skills, appear to be the favoured approach to improving the social outcomes of students with ASC, especially with older students with the condition (see table 1.1). A possible explanation for this is that interventions are developed based on the assumption that teaching ‘…the social interaction skills necessary to build relationships with others’ (Flynn & Healy, 2012, p.432) will result in improved social outcomes for students with ASC. An emerging body of evidence, however, indicates that this assumption may be flawed, as other factors can, and do, play a role in social outcomes. A study examining the educational experiences of included students with ASC, for example, concluded that: ‘Pupils with ASD are predisposed to social isolation by virtue of their disability…classmates lack of understanding of this disorder, however, aggravates autistic children’s drift towards marginality’ (Ochs, Kremer-Sadlik, Solomon & Sirota, 2001, p.40). This is supported by the ‘Reciprocal Effects Peer Interaction Model’ (REPIM, Humphrey & Symes, 2011), which provides a theoretical framework for explaining the social exclusion of students with ASC. According to the model, the social-cognition deficits of students with ASC interact with their peers’ lack of understanding of the condition to produce low frequency and quality social experiences, resulting in isolation of students with ASC and the continued ignorance of their peers. The limited outcomes of current intervention
approaches may therefore be due to the fact that they address just one, and not all, of the causes underlying the negative social experiences of students with ASC.

In line with the above, it is argued that ‘improvement of social skills...requires the participation of different social agents in the child’s environment (peers, parents and teachers)’ (Bauminger, 2002, p.294). Thus, including peers in interventions may still not be enough if other factors influencing the social experiences of students with ASC remain unaddressed. Whilst teachers can undoubtedly play a role in social inclusion (e.g. Robertson, Chamberlain & Kasari, 2003), there is evidence that TAs also influence social outcomes. The use of TAs has been overwhelming linked to negative social outcomes such as increased stigma and reduced social interaction with peers (Giangreco & Doyle, 2007; McVitie, 2005), including in students with ASC (Alston & Kilham, 2004). A recent study of 40 students with ASC, 40 with dyslexia and 40 with no SEN found that students with ASC were less included in lessons than either comparison group, specifically in terms of supporting or getting along with their classmates (Symes & Humphrey, 2012). Accompanying qualitative data indicated that these outcomes were more likely for students supported by TAs, and this seemed to be because the TAs tended to sit next to the students with ASC, and/or work with them during group or paired tasks, reducing the opportunities for them to interact with their peers. These findings mirror those found in other studies looking at students with a range of SEN (e.g. Hemmingsson, Borell & Gustavsson, 2003; Howes, 2003). Since TAs are one of the most common methods schools employ to facilitate inclusion for students with ASC (Alston & Kilham, 2004), the impact their role can have clearly needs to be considered during both the design and delivery of interventions to improve the social outcomes of these learners.

The latter point is particularly important, given that a second limitation of social-skills interventions is that they are not typically delivered in mainstream, or even educational, settings (Dodge, 2014; Fletcher-Campbell, 2003; Reichow & Volkmar, 2010), with the majority occurring in clinical settings (Parsons & Kasari, 2013). Indeed, whilst the number of interventions for children and young people with ASC increased between the 1980’s and 1990’s, there was an overall decrease in interventions taking place in natural settings (e.g. schools) and involving staff/people from those settings (e.g. teachers) (Stichter, Clarke & Dunlap, 2004), and this does
not appear to have improved with time (Bond et al., 2016; Parsons et al., 2009). The lack of intervention studies conducted within educational settings not only means that the impact those in such settings can have is overlooked, but it also makes it difficult to draw assumptions about what works best in those settings (Parsons et al., 2011). Furthermore, whilst some social-skills intervention studies are conducted in mainstream settings (Reichow & Volkmar, 2010), only a small number of studies have been conducted in students’ classrooms during normal routines and activities (Crosland & Dunlap, 2012). This makes it difficult to determine which types of intervention are acceptable to staff and students, and which can feasibly be implemented around the competing priorities characteristic of such settings (Lendrum & Humphrey, 2012). In light of this, there are calls for interventions to be developed that are ‘school ready’ (Parsons & Kasari, 2013). New social-skills interventions therefore need to include others, such as peers and TAs in their design and delivery, and be feasible to implement in mainstream education settings.

The poor social outcomes of secondary school students with ASC are not, however, only the result of the role others can play, or the school context, being overlooked in social-skills interventions. Review articles indicate that the age of participants is also a limitation of numerous studies evaluating interventions for students with ASC (Bond et al., 2016; Flynn & Healy, 2012; Parsons et al., 2009; Reichow & Volkmar, 2010). It is concluded that widening the age range of study participants from mainly primary school age students to include more secondary school age students is needed to determine which strategies are effective and feasible for students of all ages and grades (Crosland & Dunlap, 2012; Strain et al., 2011). Furthermore, there is reason to believe that social-skills interventions designed for use with younger students with ASC may not be suitable for older students with the condition (Davis et al., 2010; Webb et al., 2004). Firstly, the nature of friendships change with age (Locke et al., 2010), meaning students with ASC may need new to learn new skills to navigate them. Secondly, peers in high school may be less tolerant and accepting of difference than their peers in primary school (Chamberlain et al., 2007), meaning students may be at a greater risk of isolation. Thirdly, in secondary school, students change classes every lesson, exposing them to a far greater number of peers (Locke et al., 2010), meaning they risk a potentially greater range of negative social outcomes. Taken together, it is clear that interventions need to be developed with the specific needs of
secondary school students in mind, and intervention studies need to include this population in their participant sample.

The fourth, and final, limitation considered here is the lack of measured, or observed, generalisation reported within many social-skills interventions for students with ASC (Crosland & Dunlap, 2012; Mackay et al., 2007; Williams White et al., 2007). That is, studies either seldom measure whether skills obtained within intervention settings generalise to other contexts, or, if they do, the observed impact tends to be limited (Bellini et al., 2007; Crosland & Dunlap, 2012; Flynn & Healy, 2012). Such findings have led to the conclusion that ‘…the one persistent challenge [in the field of social-skills interventions is] to develop and validate interventions that promote generalisation…of intervention skills’ (Schmidt, Sticher, Lierheimer, McGhee & O’Connor, 2011, p.2). For Bellini et al., (2007) this means that ‘school personnel should create an explicit plan for promoting generalisation when developing a social-skills intervention’ (p162). This is important, as students with ASC can find it difficult to generalise the skills learnt in an intervention to their wider social setting (Broderick et al., 2002). This is demonstrated in the nine interventions presented in table 1.1. The only studies that reported intervention gains beyond the intervention setting were those that used generalisation techniques. Such techniques included the use of parents (Laugeson et al., 2012) and peers (Bauminger et al., 2002; Davis et al., 2010). In light of the first and second limitation of social-skills interventions, discussed above, it seems clear that if intervention gains in social skills are to translate into qualitative improvements in their social experiences, peers and/or TAs should feature in the generalisation plans of social-skills interventions for use with secondary school students with ASC far more than they currently do (Schreiber, 2011).

Summary
This section has shown that whilst numerous interventions have been developed to address the social needs of students with ASC (Strain et al., 2011), those that involve others in their delivery, such as peers, tend to be more effective than those that do not (Bond et al., 2016; McConnell, 2002; Odom et al., 2010; Reichow & Volkmar, 2010). This is possibly because they address more of the factors underlying the students’ negative social experiences than other interventions (Bauminger, 2002). Despite this,
such approaches do not seem to be routinely used with secondary school students with ASC in inclusive settings. One possible reason for this is that few intervention studies are conducted in educational contexts (Dodge, 2014; Reichow & Volkmar, 2010), making the inclusion of peers, or others in such settings, problematic. Furthermore, study samples seldom include older children with the condition, thus, even if such approaches are used, their success with secondary school students is less well documented. Overall, interventions to improve the social outcomes of secondary school students with ASC are flawed in that the role others can play in the social outcomes of students with ASC (Bauminger, 2002), the educational setting (Parson & Kasari, 2012), the needs of older students (Bond et al., 2016; Flynn & Healy, 2012), and the generalisation of intervention gains to the wider social setting (Crosland & Dunlap, 2012; Williams White et al., 2007) are all typically overlooked in the design, implementation and evaluation of such approaches.

1.5 Conclusion

Over the last 20 years, more children and young people with ASC have received their education in mainstream classrooms than ever before (Keen & Ward, 2004; Crosland & Dunlap, 2012). A number of countries, including England, where the research in this thesis was conducted, have policy in place to enable students with ASC in these settings to access support that addresses the social-cognition deficits that characterise the disorder (Bellini et al., 2007). Section 1.3. of this chapter however, showed that despite this, students with the condition currently experience a range of negative social outcomes in inclusive settings, including few friends, loneliness, limited social acceptance and support, and bullying (e.g. Bauminger & Kasari, 2007; Humphrey & Symes, 2010a, 2011). Although this may in part be because students are not always able to access the support they need (Bellini et al., 2007; Williams White et al., 2007), the findings presented in section 1.4 suggest that they are more likely the result of the support being inadequate. Specifically, current approaches to improving the social outcomes of students with ASC do not take into account the role others can play in these outcomes (Bauminger, 2002), the educational setting (Crosland & Dunlap, 2012), the needs of older students (Bond et al., 2016) or the generalisation of intervention gains to other contexts (Flynn & Healy, 2012), during their design or delivery. Given the worrying level of social isolation students with ASC are currently experiencing in mainstream school settings, it is imperative that they have access to
effective interventions. New interventions, which address these limitations, are therefore needed.

RESII, the intervention designed for this thesis, was developed specifically to address these limitations, and, in doing so, improve the social outcomes of secondary school students with ASC included in mainstream schools. It does this by firstly including both peers and TAs in the delivery of the intervention, alongside the students with ASC. Secondly, the structures and routines of mainstream secondary schools, and the views of those within them, were considered throughout the design and development of RESII. Thirdly, it was designed specifically for use with older students with the condition (those aged 11 to 14 years), and includes them in the research accordingly. Finally, it includes an explicit plan for improving the generalisation of intervention gains beyond the intervention context, namely training TAs to facilitate, rather than hinder, social interactions between students with ASC and their typical peers. The design of RESII was guided by an intervention-research framework developed by the researcher, the first step of which involves the identification of the factors underlying the issue to be addressed (the problem theory) and possible strategies to address them (the program theory), as well as the implementation context, agent and recipients. These tasks, and the resultant program model of RESII, form the basis of chapter two.
Chapter 2

Reciprocal Effects Social Inclusion Intervention (RESII) programme model

‘Teach specific social skills to children with autism and typically developing peers and provide in situ intervention to prompt social interaction’ (McConnell, 2002, p. 368)

This chapter provides an overview of RESII’s programme model, and presents the theory and evidence underlying its development. The process of designing RESII was guided by a framework which outlines the steps required to design and develop interventions appropriate for use in social and community settings, such as schools. The first of these steps involves the identification of factors underlying the outcomes of interest (the problem theory) and potential means of addressing them (the programme theory). These activities form the basis of this chapter, which begins with an overview of the guiding framework (section 2.1), followed by a brief overview of RESII’s programme model (section 2.2) before presenting the problem theory (section 2.2.1) and programme theory (section 2.2.2) in further detail. This is followed by consideration of the intended implementation setting (section 2.2.3). This chapter concludes by setting out how RESII addresses the limitations of previous approaches to improving the social outcomes of students with ASC in mainstream secondary schools, and presents the research questions this thesis sought to answer.

2.1 Guiding framework

An intervention can be defined as a ‘purposively implemented change strateg[y]’ (Fraser & Galinsky, 2010, p. 459), which seeks to ‘enhance or maintain the functioning and well-being of an individual, family, group, community or population’ (Schilling, 1997, p. 174). There are different types of research involving interventions, including those that focus on the design and development of interventions (Gilgun & Sands, 2012; Schilling, 1997). This type of research is referred to as intervention research. Intervention research is concerned not only with whether an intervention works, but also with the steps that have led to it being effective (Gilgun & Sands, 2012). Furthermore, its primary outcome is the intervention itself, rather than a comprehensive evaluation of one (Fraser & Galinsky, 2010; Thomas, 1989). Intervention research involves researchers moving through a series of stages, in which they seek to provide
increasingly convincing evidence for their intervention (Campbell et al., 2007). The benefit of this approach is that it allows intervention developers to identify exactly where they are in the development process, and tailor their research activities accordingly (Campbell et al., 2007). For example, when an intervention has first been designed, it makes little sense to immediately test its effectiveness in a large-scale population study, if other issues, such as its acceptability by potential users, have yet to be established (Schilling, 1997). Furthermore, such studies can be costly, and the intervention research paradigm allows intervention effectiveness to be established through a series of smaller, lower-cost studies (Comer, Meier & Galinsky, 2004).

Intervention research has two broad stages: the design of a programme, and its development over a series of studies, divided into a series of steps (Fraser & Galinsky, 2010). The steps move from establishing the theoretical model underpinning the intervention and its activities, to developing and refining the intervention content, through a series of increasingly rigorous efficacy and effectiveness trials (Gilgun & Sands, 2012). These steps allow interventions to be designed and developed in a systematic way (Thomas, 1989). Although models of intervention research typically represent these steps as sequential (e.g. Fraser & Galinksy, 2010), in reality they are iterative, and the findings from one step can lead to a move forwards or backwards, depending on the research findings at each stage (Comer et al., 2004). Importantly, collaboration with potential service-users and delivery agents is key at every stage of development, in order to ensure that the final intervention can be reliably implemented in practice settings (Comer et al., 2004).

The intervention-research framework guiding this thesis was derived from frameworks for intervention research suitable for the development of complex interventions, namely, Campbell et al., (2000), Fraser & Galinsky; (2010) and Rothman & Thomas, (1994). Each of these frameworks is intended for use in the design and development of interventions that comprise multiple parts, involve multiple groups in their delivery, and are intended to be used therapeutically in community settings, such as schools. These characteristics were relevant to RESII, which includes peers and school staff in its delivery alongside students with ASC, in school settings, in an attempt to remediate the negative social outcomes currently experienced by these learners. An overview of the guiding framework is presented in table 2.1. The framework identifies six steps that are
key to the development of an intervention, and highlights core activities and considerations pertinent to each step. Steps one to three are concerned with the design of the intervention, whilst steps four to six focus on intervention development.
Table 2.1 The framework guiding the design and development of RESII (developed from Campbell et al., (2000), Fraser & Galinsky; (2010) and Rothman & Thomas, (1994))

<table>
<thead>
<tr>
<th>Step</th>
<th>Purpose</th>
<th>Core tasks</th>
<th>Key considerations</th>
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| One  | Develop programme model | • Conduct literature review to identify:  
  ▪ Malleable risk factors (problem theory)  
  ▪ Appropriate change strategies (programme theory)  
  ▪ Expected proximal and distal outcomes  
  ▪ Determine intervention level | • The number of ‘parts’ the intervention will have, and how they will fit together |
| Two  | Design intervention content | • Identify relevant content  
  • Collaborate with intended intervention agents and recipients  
  • Write intervention manual  
  • Identify essential content and fidelity criteria | • The context in which the intervention will be used |
| Three| Determine appropriateness and feasibility of intervention and intended research methodology | • Identify or develop outcome measures  
  • Pilot the intervention in a series of studies to assess:  
  ▪ Appropriateness and feasibility of the intervention  
  ▪ Appropriateness and feasibility of intended research methodology  
  ▪ Initial efficacy of the intervention  
  ▪ Refine intervention and/or research methodology | • The context in which the research methodology will be used  
  • Triangulation of data  
  • Ability to draw causal inferences |
| Four | Establish efficacy | • Run a series of highly-controlled studies to determine efficacy  
  • Deliver the intervention under the best possible circumstances | • Fidelity to the intervention manual  
  • Selecting the control group  
  • Randomisation to treatment or control  
  • The extent to which the intervention differs from ‘treatment as usual’  
  • Ability to draw causal inferences |
| Five | Establish effectiveness | • Evaluate the effectiveness of the intervention in less-controlled studies in ‘real-life’ settings  
  • Develop adaptation guidelines | • Fidelity to the intervention manual  
  • Ability to draw causal inferences |
| Six  | Dissemination | • Diffusion – preparation of dissemination media e.g. publication of findings  
  • Adoption – facilitate use by the intended consumers | • The extent to which the intervention is adapted e.g. for use with new populations  
  • Communication between programme developers and intervention consumers |
Step one of the guiding framework involves the conceptualisation of the programme model. The core tasks at this stage are to identify those factors underlying the problem to be addressed (the problem theory), the steps that could be taken to address it (the programme theory), and the expected outcomes (Campbell et al., 2000; Fraser & Galinsky, 2010). This step is regarded as the foundation of good intervention design (Fraser & Galinsky, 2010), and the importance of deriving the intervention components from theory is emphasised (Gilgun & Sands, 2012). In line with this, frameworks for intervention research typically emphasise the importance of conducting a literature review in the early stages of intervention research (Campbell et al., 2000; Carroll & Nuro, 2002; Rothman & Thomas, 1994). Consulting relevant empirical literature enables researchers to identify potential malleable factors that can be targeted through intervention (Fraser & Galinsky, 2010), and to uncover early evidence that the intervention will work as intended (Campbell et al., 2007). Accordingly, this chapter presents the findings from the literature review conducted in the early stages of the research process, and demonstrates how these findings were used to develop RESII’s programme model. However, Fraser & Galinsky (2010) also acknowledge that the literature cannot be considered in isolation: the intended intervention setting must also be considered at this early stage. Accordingly, this chapter also considers RESII’s intended implementation context.

The intended outcome of step one of the guiding framework is a general overview of the form the intervention should take. The intended outcome of step two is the specific activities and resources needed to deliver the intervention (Carroll & Nuro, 2002; Fraser & Galinsky, 2010; Rothman & Thomas, 1994). At this stage, the views of intended service users and delivery agents are sought, to more clearly understand the contextual factors that will influence how the intervention might be delivered (Campbell et al., 2000; Comer et al., 2004). Doing so is argued to increase the likelihood that the intervention is acceptable to users (Gilgun & Sands, 2012), and thus more likely to be adopted and implemented as intended at later stages in the research (Campbell et al., 2007; Fraser & Galinsky, 2010). As a result, input from potential users is given more weight than the findings from empirical research at this stage in the design process (Fraser & Galinsky, 2010; Schilling, 1997). Accordingly, the design of RESII’s content was based on the views and practices of students with ASC and their schools. The process of designing the intervention content is presented in chapter three of this thesis.
The third step in the guiding framework is concerned with piloting the first version of the intervention to determine the appropriateness and feasibility of the intervention and the intended research methodology, and to gather rudimentary evidence of efficacy (Comer et al., 2004; Gilgun & Sands, 2012). At this stage, it is appropriateness, rather than effectiveness that is emphasised, and as such, the context in which the intervention and research methodology will be used is again of central importance (Fraser & Galinsky, 2010; Schilling, 1997). In other intervention-research frameworks, step three is typically subsumed under step four – establishing efficacy, (e.g. Campbell et al., 2000; Carroll & Nuro, 2002; Fraser & Galinsky, 2010; Rothman & Thomas, 1994). The guiding framework used here distinguishes between these two elements for two reasons. Firstly, examples of intervention research following frameworks such as the one proposed by Fraser & Galinsky’s (2010), place greater emphasis on the design of the intervention content prior to considering efficacy more generally (e.g. Aventin, Lohan, O’Halloran & Henderson, 2015). Secondly, there is differentiation in the literature between studies whose purpose is to determine feasibility of both the intervention and its methods at the very early stages of development, and studies which want to examine intervention efficacy once initial appropriateness had been established (e.g. Comer et al., 2004). This was especially pertinent to this thesis, since one of the core rationales for developing RESII was the need for interventions to be suitable for use within educational settings. Thus, it was felt that it was important to establish feasibility before attempting to determine the potential impact the intervention might have.

In this thesis, two studies were conducted during the third step of the guiding framework. The first study was conducted to refine the content of the intervention, and to gather initial information regarding the appropriateness and acceptability of the use of the intervention and research methods in a secondary school setting. The findings from this study fed into the second study, the focus of which was on refining the content of the intervention further, whilst also attempting to gather early indications of RESII’s efficacy. This approach was similar to that advocated by other intervention researchers in the field (e.g. Comer et al., 2004). It is important to note that intervention research does not advocate any particular research methodology (e.g. quantitative research vs. qualitative research), or research design (e.g. single-case experimental designs vs. randomised control trials) (Campbell et al., 2000). Rather, it advocates a pragmatic
approach (Creswell & Plano Clark, 2007), whereby the methods best suited to meeting the aims of each step are utilised (Fraser & Galinsky, 2010; Rothman & Thomas, 1994; Schilling, 1997). Accordingly, since step three of the guiding framework was concerned with refining the intervention design, qualitative data were collected alongside quantitative data to provide greater insights into the intervention acceptability and efficacy. Furthermore, since the first study was not concerned with establishing efficacy, a control group was not utilised, where as it was for the second study. Further details regarding the methodology and findings of study one and study two can be found in chapters four and five respectively.

The latter three stages of the guiding framework are concerned with the development of the intervention once it has been designed (Carroll & Nuro, 2002; Fraser & Galinsky, 2010; Rothman & Thomas, 1994). Accordingly, step four is concerned with establishing efficacy in a series of highly controlled studies (Campbell et al., 2000; Fraser & Galinsky, 2010). Step five (sometimes combined with step four) involves establishing the intervention’s effectiveness under real-life conditions (e.g. delivery by intervention agents rather than the intervention developers) (Campbell et al., 2000; Carroll & Nuro, 2002; Fraser & Galinsky, 2010; Rothman & Thomas, 1994). Step six involves the dissemination of the intervention and research findings to groups beyond those initially targeted (Fraser & Galinsky, 2010), and requires research into how the intervention can be adapted to suit new populations (Rothman & Thomas, 1994). Each of these steps typically involves large sample sizes and delivery by multiple intervention agents, and were thus beyond the scope of this thesis. Conclusions from the initial two studies, and their implications for the future development and evaluation of RESII, are discussed in chapter six, the final chapter of this thesis.

### 2.2 Programme model

Completion of the first step of the guiding framework led to the development of the programme model underpinning RESII, depicted in figure 2.1. A programme model, also known as a theory of change (Weiss, 1996) or programme theory (Chen, 2006), is a model of the ‘intended processes of [a] programme…the means and the steps by which a programme is intended to work’ (Weiss, 1996, p.173). Specifically, a programme model identifies the determinants of the outcomes being targeted, the change strategies intended to address them and the expected changes to the targeted outcomes as a result,
as well as the context in which the intervention will be delivered (Chen, 2006; Fraser & Galinsky, 2010). These processes map on to the problem theory, programme theory, proximal and distal outcomes and implementation context proposed in step one of the guiding framework, respectively.

Figure 2.1 RESII’s programme model

RESII’s problem theory identifies three factors underlying the negative social outcomes of included secondary school students with ASC. These are the social-cognition deficits that characterise the disorder, the limited awareness of the condition amongst their peers, and the ways in which TAs are deployed to support them. The programme theory comprises three change strategies to address these factors, namely social-skills training for the students with ASC, raising peer awareness of the condition, and redeploying TAs more effectively. It was hypothesised that RESII would improve the social outcomes of included students with ASC by firstly improving their social skills, raising peer awareness of the condition, and increasing the extent to which their TAs facilitate
social interaction (proximal outcomes), which in turn would lead to more social support, greater social acceptance from peers, and an increase in social interaction (distal outcomes). Given the role peers and TAs play in RESII’s problem and programme theory, mainstream schools were selected as the implementation context, where it is hoped that school SENCOs can deliver the intervention to students aged 11-14 years, within the typical structures and routines of the school day.

2.2.1 Problem theory
RESII’s problem theory identifies three factors underlying the social outcomes of included secondary school students with ASC. These are: (1) the social-cognition deficits that characterise the condition, (2) the limited awareness of the condition amongst their peers, and (3) the ways in which TAs are deployed to support them. These were identified in a review of the literature that included peer review articles and unpublished studies, such as PhD theses, as recommended by Bellini et al. (2007). They propose that such studies be considered in order to reduce the possibility of publication bias, and to provide a clearer account of the research currently being conducted within the field of social-skills interventions for students with ASC. A title search was conducted in three relevant databases (ASSIA, ERIC and PsycINFO) using the search terms autis* and social. Search terms were kept broad to ensure relevant articles were likely to be found. Due to the large rate of returned articles, results were limited to articles published from 2008 onwards, written in English and involving human participants. After duplicates were removed, 394 records were retained. Relevant literature already known to the supervisor (including grey literature) was also included.

The returned articles were then considered for inclusion in the literature review. Articles were included in the review if they focused on the education of secondary-school students with ASC, if they focused on the social outcomes of included students with ASC, or focused on an aspect of the school environment relevant to these outcomes. Articles were excluded if they focused on younger children with the condition (unless they explored social inclusion in school settings) or if they did not examine the social outcomes of students with ASC. Where possible, research examining the views of students with ASC was included (e.g. Connor, 2000; Humphrey & Lewis, 2008; Humphrey & Symes, 2010b; Rossetti, 2012), although research involving adults with the condition (e.g. Milton & Lyte, 2012) was not reviewed. From the articles retained
for use in the review, a number of factors relevant to RESII’s problem theory were identified. Of them, the social skills of students with ASC, the attitudes of their peers and the use of TAs emerged as key factors underlying the negative social outcomes of students with ASC.

Whilst other factors, such as the support offered by parents (e.g. Laugeson et al., 2012) or the attitudes of their teachers (e.g. Robertson, Chamberlain & Kasari, 2003) were also identified in the review, they were not included in RESII’s problem theory for three reasons. Firstly, the three included factors were felt to most closely address the limitations of current intervention approaches (e.g. the inclusion of peers in the delivery of interventions, and limited generalisation of intervention gains). Secondly, in terms of feasibility, peers and TAs were considered easier to include than parents or teachers, especially in secondary schools where students may encounter multiple teachers in a given week. Thirdly, all interventions can struggle to be truly ‘comprehensive’: even with the inclusion of teachers and parents, other groups such as educational professionals or siblings would still be excluded. Thus, it was decided that the problem model would be limited to those factors most likely to address the limitations of current approaches, and those that could most feasibly be implemented within a secondary school setting. The limitations of this approach are explored in more detail at the end of this thesis (chapter six) in light of the outcomes of the initial trial of RESII.

The first two factors identified as underlying the negative social outcomes of included students with ASC in RESII’s problem theory are the social-cognition deficits that characterise the disorder, and the lack of awareness of the condition amongst their peers. These two factors were included based on findings from a large-scale ESRC-funded study examining the social experiences of included secondary school students with ASC, which lead to the development of the REPIM (Humphrey & Symes, 2011, see figure 2.2). The REPIM provides a theoretical framework for understanding the processes underpinning social outcomes for included students with ASC. That is, it attempts to explain why students with ASC are at risk of social exclusion. According to the model, negative social outcomes are the result of an interaction between endogenous (within the student with ASC) and exogenous (within the peer group) factors. Specifically, the student with ASC’s difficulties in social cognition mean they may have poor social and communication skills, and their peers’ lack of awareness of the
condition can lead to them being less accepting of this difference. The result of this is reduced quality and quantity of peer interaction. This, in turn, leads to the student with ASC having fewer friends and social support, and increased exposure to bullying. Overtime, this can lead to the student with ASC becoming increasingly isolated and lonely, and the negative nature of their social interactions causes them to withdraw from social contact with others. This withdrawal means that the student with ASC has less chance to practice and develop their social skills, whilst their peers simultaneously have fewer opportunities to learn about ASC, meaning their attitudes are unlikely to change. According to the REPIM, then, improving the social inclusion of students with ASC requires addressing their social-cognition deficits at the same time as their peers’ awareness of the condition.

Figure 2.2 The Reciprocal Effects Peer Interaction Model (REPIM, Humphrey & Symes, 2011, p. 400)

Humphrey and Symes (2011) drew support for their model from their large-scale study examining the social experiences of included secondary school students with ASC. The researchers found that students with ASC spent more time than students with other, or no SEN, engaged in solitary play, and less in cooperative play. This suggests, in line
with the REPIM, that students with ASC have fewer opportunities to interact with their peers and/or may choose to withdraw from them to avoid negative experiences. The latter point was supported by the finding that students with ASC were more likely to be verbally abused by their peers than students in the other two groups, and the students with ASC were themselves more likely to engage in reactive verbal aggression, indicating a poor quality of social interaction. An interesting finding was that the peers of the students with ASC were more likely to initiate interactions with them than the peers of the students in the other two groups, yet they still spent more time alone. These results can still be interpreted in line with the REPIM, however, as they suggest that although their peers are initiating conversations, they may not be doing this in an ‘autism-friendly’ way. It also suggests that the students with ASC may not have the necessary skills to sustain a conversation once it’s started. The authors concluded that, overall, the findings from their study supported the assumptions of the REPIM. Further support comes from study findings that show how including peers alongside students with ASC in social-skills interventions can result in better outcomes than either method alone (Kasari, Rotheram-Fuller, Locke & Gulsrud, 2012; Schmidt et al., 2011).

Based on the REPIM then, the social-cognition deficits of students with ASC were identified as the first factor underlying the negative social outcomes of these learners, and aside from the REPIM, there is a strong justification for including them as part of the problem theory of RESII. Individuals with ASC, by virtue of their diagnosis, experience difficulties in social situations and social relationships throughout their lifespan (Bauminger, 2002; McConnell, 2002; Webb et al., 2004). These difficulties suggest that problems in interpreting social information (Webb et al., 2004), such as the emotions (Bauminger, 2002), or the perspectives of others (MacKay et al., 2007) will need to be remediated if students with ASC are to successfully initiate and maintain conversations (Davis et al., 2010) or develop friendships (Laugeson et al., 2009) in inclusive settings. Most likely as a result of this assumption, interventions to improve the social outcomes of students with ASC typically focus on the explicit teaching of social skills (Flynn & Healy, 2012; McConnell, 2002), and that was apparent in the interventions used with secondary school students presented in section 1.4. All nine of the interventions targeted social skills, and six of these also targeted wider social outcomes such as friendships (Laugeson et al., 2009), social interaction (Bauminger, 2002; Davis et al., 2010; Koegel et al., 2012; Trottier et al., 2011) and the ability to
work as part of a group (Webb et al., 2004). The evidence reviewed here suggests that the social-cognition deficits of students with ASC play an important role in their social outcomes in mainstream schools.

The REPIM also identifies peer awareness of, and attitudes towards, students with ASC as playing a key role in the social outcomes of included students with ASC, and thus the peer awareness of the condition was the second factor identified in RESII’s problem theory. Two strands of evidence provide support for their inclusion in RESII’s problem theory. These are studies that show that peer awareness of the ASC can influence attitudes and behavioural intentions towards children and young people with the condition, and studies indicating that peer awareness is currently limited. With regards to the first of these strands, there is some, albeit limited, evidence that peer awareness of ASC can lead to more positive attitudes towards those with the condition. One study (Mavropoulou & Sideridis, 2014) found that school-age students who had greater experience of ASC (measured by the length of time they spent sharing the same table as a peer with ASC during class time) had greater knowledge of ASC, and more positive attitudes and behavioural intentions towards those with the condition. In an experimental study, it was reported that students have more positive attitudes and behavioural intentions towards a child displaying autistic behaviours if their behaviour is accompanied with descriptive (i.e. they are told the child has ASC) and explanatory (i.e. they are told how ASC affects their behaviour) information than either no information, or descriptive information alone (Campbell, Ferguson, Herzinger, Jackson & Marino, 2004). These findings are supported by theories within the psychological literature such as the ‘Theory of Planned Behaviour’ (Ajzen, 2001) which states that behavioural intentions can be predicted, in part, through attitudes towards that object/behaviour. Furthermore, studies evaluating attempts to raise peer awareness have reported gains in peer attitudes towards students with ASC, alongside improved social outcomes for those with the condition (e.g. Gus, 2000; Etherington, 2007).

The second strand of evidence comes from studies showing that peer awareness of ASC is limited. Although awareness of the term ‘autism’ has increased over the last ten years (Campbell & Barger, 2014), this has not been accompanied by a greater understanding of how ASC affects individuals. Campbell & Barger (2011) surveyed 1,105 middle school students to see what they knew about ASC. Forty-six per cent of the students
reported prior knowledge of ASC, and those students were more likely to score higher on an ASC knowledge test. Overall, however, there were significant gaps in student understanding of ASC: Forty-two per cent of students did not know that students with autism may have difficulty looking at others, and 21% did not know that students with autism sometimes have difficulty changing activities. In another study, Campbell et al. (2011) asked 450 middle school students to write down what they knew about autism. Around 70% were able to provide an accurate definition of ASC, but for the majority of students (53.5%), the only thing they knew about ASC was that it was a disability. Only 22% reported social difficulties being a feature of ASC, 12% communication difficulties and just under 2% identified restrictive/repetitive behaviour. Stilton et al. (2011, cited in Campbell & Barger, 2014) found very similar findings with elementary school students. Taken together, these studies suggest that whilst there is some awareness of ASC within the student population, this understanding is very limited. This is a concern, given the evidence that awareness of the condition appears to be a predictor of attitudes and behavioural intentions towards students with ASC. As a result of the findings presented here, peer awareness was included in RESII’s problem theory.

The third and final factor in RESII’s problem theory is the way in which TAs are typically deployed to support students with ASC. TAs are support staff who ‘may work supporting an individual or a group of individuals, or they may support the teacher in the classroom’ (TDA, 2010, p.11). It is interesting that although TAs are one of the most popular methods schools employ to facilitate inclusion in mainstream settings for students with a range of SEN (Howes, 2003; Giangreco & Doyle, 2000; Groom & Rose, 2005), including students with ASC (Alston & Kilham, 2004), they are not included in the REPIM (Humphrey & Symes, 2011). This is a potential limitation of the model, especially considering that research by the same authors has linked the presence of TAs to a reduction in the extent to which supported students with ASC engaged with their peers during lessons (Symes & Humphrey, 2012). Indeed Baxter (2014) identified TAs as the most prominent contextual factor influencing the extent to which students with ASC interact with their peers and recommended their inclusion in the REPIM accordingly. The use of TAs may result in a ‘buffer zone’ being formed (Baxter, 2014, p.39), an idea supported by the finding that TAs who spend the majority of their time sat next to the students they support, can prevent them from interacting with others (Symes & Humphrey, 2012), and that by training TAs to facilitate, rather than hinder,
social interactions, the social inclusion of students with ASC increased (Baxter, 2014). These findings can be explained through the TAs perceptions of their role. The same TAs were interviewed about their experiences of supporting students with ASC (Symes & Humphrey, 2011a). They overwhelmingly felt that their job was to keep students ‘focused’ on their work, for example prompting them when their attention may have drifted. Developing social skills was seldom acknowledged to be part of their role, and in fact it may be discouraged given that some TAs felt their purpose was to keep the students ‘quiet and to not make a scene’ (p. 61).

Other studies have also found that TAs may have a detrimental impact on the social lives of the students they support. The use of TAs has been linked to increased stigma and reduced social interaction with peers for students with a range of SEN (Giangreco & Doyle, 2000; McVittie, 2005), including students with ASC (Alston & Kilham, 2004), and students themselves seem to be aware of the barrier TAs can present. Rossetti (2012) interviewed three high school students/young adults with ASC and their friends to explore how their friendships had developed within inclusive educational settings. The interviewees identified a number of ways in which the development of their friendships had been hindered by the presence of TAs. This included removing students early, or holding them back, in class during peak social times in the school day such as break times and transitions between lessons. Thus, TAs not only appear to influence the extent to which students with ASC interact with their peers during lesson time, but also during those times of the day when social interaction is most likely. The TAs interviewed in the Humphrey & Symes study identified training as being one factor that impacted on the quality of support they felt they could offer students with ASC (Symes & Humphrey, 2011a). In fact, it is widely reported that TAs are likely to start their role with relatively little training or prior knowledge of the condition (Blatchford et al., 2009; Giangreco & Doyle, 2000; Symes & Humphrey, 2011b). Therefore, the extent to which TAs are prepared to support students with ASC could play an important role in the social outcomes of these students attending mainstream schools, and therefore TAs were included in RESII’s problem theory accordingly.

Summary

The three factors included in RESII’s problem theory were selected based on the REPIM (Humphrey & Symes, 2011), and the impact TAs can have on the social
experiences of students with ASC. It is important to acknowledge that these are by no means the only factors that could have been included. For example, a number of studies have identified the important role that teachers can play in the social lives of students with the condition (Eman & Farrell, 2009; Robertson, Chamberlain & Kasari, 2003), and there is evidence they may currently lack the training and knowledge to effectively support them (Connor, 2000; Sciutto, Richwine, Mentrikoski & Niedzwiecki, 2012).

Despite this, teachers were not included in RESII’s problem theory. Fraser & Galinsky (2010) propose that a problem theory should include only those factors that can be altered through the implementation of change strategies. It was felt that, for secondary school students, including teachers was potentially unrealistic as a student will encounter numerous teachers across their school day, week or year, meaning that every teacher coming into contact with them would have to be involved in the intervention in some way. Practically, this seems a less feasible and efficient intervention point than their peers or TAs, who are far more likely to consistently accompany the student throughout their school life. Indeed, one study examining the social experiences of students with ASC concluded that ‘…the practice of inclusion rests primarily on unaffected schoolmates rather than teachers’ (Ochs et al 2001, p.399).

This section has presented the rationale for the three factors included in RESII’s problem theory. With regards to the first factor, the role social-cognition deficits are hypothesised to play in the social outcomes of students with ASC (REPIM, Humphrey & Symes, 2011), combined with their prominence in popular approaches to improving their social outcomes (e.g. Flynn & Healy, 2012), lead to them being included in the problem theory. The role peer awareness is postulated to play in the social outcomes of students with ASC (REPIM, Humphrey & Symes, 2011), and the findings that higher peer awareness can improve social outcomes for students with ASC (Mavropoulou & Sideridis, 2014) combined with the low level of peer awareness reported in the literature (Campbell & Barger, 2014), lead to peer awareness being included in the problem theory. Finally, the role TAs play in the inclusion of students with ASC, combined with the negative outcomes associated with their use (Symes & Humphrey, 2012), lead to TAs being included in the problem theory. Development of the problem theory constitutes just one part of the first step in the intervention-research framework guiding this study. Once potential factors underlying the problem had been identified, the next
step was to identify potential areas of intervention, or change strategies, that could be used to address them. These are discussed in the following section.

2.2.2 Programme theory
The programme theory of an intervention identifies possible change strategies that can be employed to address those factors identified in the problem theory (Fraser & Galinsky, 2010). Therefore, the literature used to identify factors for RESII’s problem theory was used to identify potential change strategies for remediating the social-cognition deficits of students with ASC, raising awareness of the condition amongst peers, and reducing the negative impact TAs can have on the social outcomes of these learners. When identifying suitable change strategies, however, an important consideration is the intended outcomes of the intervention (Chen, 2006). Thus far, it has been stated that RESII was designed to improve the social outcomes of included students with ASC. Specifically, it was designed to address those outcomes identified in section 1.3, namely friendships, loneliness, social acceptance, social support and bullying, combined with the outcomes identified during the development of the problem theory (quality and frequency of social interaction). These outcomes were combined to produce three broad aims: (1) increased social support (including more friendships and reduced loneliness) (2) increased social acceptance (namely inclusion in social networks), (3) and increased quality and frequency of social interaction (including a reduction in bullying). Therefore, change strategies were selected that addressed the factors identified in the problem theory, and that showed evidence of producing the targeted distal outcomes. This section presents the rationale for the change strategies selected for inclusion in RESII’s programme theory, and, in doing so, outlines the way in which those strategies result in the intended outcomes.

The problem theory identified the social-cognition deficits of students with ASC as one factor underlying their negative social outcomes in mainstream secondary schools. According to the REPIM (Humphrey & Symes, 2011), these deficits lead to poor social and communication skills, which, when combined with the lack of awareness and acceptance of the condition amongst their peers, results in reduced quality and frequency of peer interaction. This in turn leads to other negative outcomes such as fewer friendships and reduced social acceptance, all of which are distal outcomes targeted by RESII. Thus, to achieve better social outcomes for students with ASC,
change strategies that improve their social and communication skills appear vital. Indeed, it is accepted that the only way students with ASC can develop their social skills is through explicit instruction (MacKay et al., 2007; Laugeson et al., 2012; Schreiber, 2011). As noted in the previous section of this chapter, and in section 1.4, there are numerous interventions that target the social-skills development of children and young people with ASC. A distinction can be made between interventions that seek to develop social skills directly and indirectly (Kasari et al., 2012, Mackay et al., 2007). Examples of direct training methods include social-skills groups, video modelling and social stories. There are fewer indirect training methods, but one that seems particularly prominent is peer-mediated interventions (PMI). Of these approaches, social-skills groups appear to be preferred for use with older students with ASC. For example, of the nine interventions presented in table 1.1, six involved the direct teaching of social skills in a group format. All six of these interventions resulted in improvements in the targeted social skills, making them a potential change strategy for inclusion in RESII’s programme theory.

Social-skills groups have been identified as an effective method of improving the social skills of children and young people with ASC in a number of review articles (Cappadocia & Weiss, 2011; Flynn & Healy, 2012; Parsons et al., 2009). Reichow & Volkmar (2010) undertook a rigorous review of interventions to improve the social skills of school-age children with ASC and concluded that social-skills groups were one of only two approaches (the other being video modelling) that had accumulated enough supporting evidence to meet the criteria of an evidence-based practice. As a result, their use with school-age students was recommended, albeit with the caveat that they worked best in a clinical setting. This is most likely due to the fact that interventions studies seldom take place in school settings (Crosland & Dunlap, 2012). PMIs which commonly involve training peers to model appropriate social behaviour, and initiate social interactions, have also been identified as a promising approach (Chan et al., 2009), and there is support for their use in school settings (Bond et al., 2016; Chan et al., 2009; Wang & Spillane, 2009). However, although PMIs have been found to be effective, the long-term impact of such approaches is not well established (McConnell, 2002; Bellini et al., 2007), and their success may be limited by the extent to which the student has access to trained peers (McConnell, 2002). Furthermore, there is concern surrounding the ethics of making peers responsible for developing the social skills of
another child (Parsons et al., 2009), with developing peer awareness being offered as an alternative approach (Parsons et al., 2009). As a result, a social-skills group was selected as the preferred change strategy to address the social-cognition deficits of students with ASC.

It is acknowledged that social-skills groups have limited impact on the wider social outcomes of students with ASC (McConnell, 2002). Of the six social-skills groups included in table 1.1, for example, only two of them resulted in wider social outcomes similar to those targeted by RESII, namely social interaction (Bauminger, 2002) and friendships (Laugeson et al., 2009; 2012). This is in contrast to PMIs, which have been reported to have a positive impact on wider social outcomes (Bond et al., 2016; Reichow & Volkmar, 2010). It is argued here, however, that the superior outcomes of PMIs are a result of them addressing some of the weaknesses of other approaches to improving social outcomes, such as including peers in their delivery, and providing opportunities for generalisation. Thus, whilst social-skills groups alone may not be an effective change strategy for improving the social outcomes of students with ASC, when combined with the other two change strategies of RESII (involving peers and TAs respectively), the superior outcomes of PMIs could be achieved, and the limitations of PMIs overcome. This is supported by findings that combining a social-skills group with a PMI, produces better outcomes than either method separately (Kasari et al., 2012; Schmidt et al., 2012), indicating that social-skills groups do offer additive value.

Furthermore, intervention-research frameworks emphasise the importance of selecting change strategies that are in a format recognisable to the delivery agents and recipients, since this can increase the likelihood of them being implemented within the intended setting. Social-skills group appear to be a popular approach, and have been shown to be acceptable to schoolteachers and adolescents with ASC (Bauminger, 2002; MacKay et al., 2007; Minihan et al., 2011; Webb et al., 2004), suggesting they may be an appropriate change strategy for use with secondary school students with ASC.

The social-cognition deficits of students with ASC are just one of three factors identified as underlying the negative social outcomes of included students with ASC in RESII’s problem theory. The awareness their peers have of the condition is also claimed to play a role, in so far as their limited knowledge interacts with the student with ASC’s poor social and communication skills to result in negative social outcomes (Humphrey
Furthermore, it has been shown that peer awareness of ASC may be limited (Campbell & Barger, 2014). Thus, change strategies to raise peer awareness of the condition were sought. Schools already appear to see the value of raising peer awareness of ASC as a way to protect students with the condition from negative social outcomes such as bullying or rejection, with a popular approach being disclosure of diagnosis (Frederickson et al., 2010). Disclosure of diagnosis typically involves a one-off, informal conversation with the peer group of a student with ASC from the class teacher, school psychologist, or other member of relevant staff, in which it is revealed that the student has the condition (Ochs et al., 2001). Despite the limited information about ASC being provided in such sessions, it seems that disclosure can have a positive impact. Seven of 16 participants in Ochs et al. (2001) study had disclosed their diagnosis to their peers, and these students enjoyed more positive experiences at school, and were more likely to receive social support from their peers than those who had not. Furthermore, experimental studies have shown that providing relatively little information about a student’s ASC diagnosis can improve attitudes (Dowjotas, 2009) and behavioural intentions (Campbell et al., 2004; Swaim & Morgan, 2001) towards them. However, attitudes may still be more negative than they are towards students with less severe (Dowjotas, 2009) or no ASC (Campbell et al., 2004; Swaim & Morgan, 2001), indicating that disclosure of diagnosis alone may not be enough to result in full acceptance of students with the condition. It is possible that more comprehensive approaches are needed.

Gus (2000) evaluated the use of a whole-class approach to improving peer awareness and attitudes of ASC. In the study, the class teacher of a secondary school student with ASC, who was experiencing social isolation at school, spoke to his peers about the condition. The session was used not only to disclose his diagnosis, but also to help students understand how ASC impacted on his social behaviour, and what they as a class could do to support him. One week after the session, the majority of students felt that they had learnt something about ASC, and were able to list ways to support the student. The impact of the session was still felt 23 weeks later, when almost all of the peers reported a change in their attitudes towards the student, which had resulted in them acting differently towards him, such as trying harder to include him in conversations. Furthermore, the class teacher and TA who supported the student both reported that he was happier since the intervention. Small-group approaches to
improving peer attitudes towards ASC have reported similar results. Etherington (2007), describes an intervention to target bullying of a student with ASC. A small group of ‘peer supporters’ was taught what ASC is, how it can affect individuals with the condition, and how they could support the targeted student with ASC. There was an immediate reduction in bullying upon starting the intervention, with the student with ASC reporting that: ‘now I’ve got my peer supporters, I don’t feel alone anymore…’ (p. 6). The supporters themselves said that they had benefitted from taking part, and the school were looking to extend the intervention to other year groups. Other small-group approaches have had similar success (Fredrickson, Warren & Turner, 2005; Kalyva & Avramidis, 2005; Whitaker, Barratt, Joy, Potter & Thomas, 2003).

Taken together, it seems there are three potential change strategies for raising peer awareness of ASC. These are disclosure of diagnosis, whole-class approaches and small-group approaches. Although all of the approaches have evidence of successfully improving social outcomes of included students with ASC, disclosure of diagnosis is not always associated with high levels of acceptance (e.g. Campbell et al., 2004). Furthermore, it relies on the student being comfortable with their peers knowing they have the condition, which some are not (Humphrey & Lewis, 2008; Humphrey & Symes, 2010b). Therefore, disclosure of diagnosis was not included as the change strategy in RESII’s programme theory to improve peer awareness. Of the remaining two approaches, there is more supporting evidence for small-group approaches for raising peer awareness than whole-class approaches, including in mainstream school settings. Despite this, they were not included in RESII’s programme theory, for a number of reasons, outlined below.

Firstly, small-group approaches were perceived to be similar in some respects to PMIs. For example, the peers in the Etherington (2007) study were required to make themselves available to support the student with ASC during their break times. This related to the earlier concerns regarding the practicalities and ethics of using peers in this way (McConnell, 2002; Parsons et al., 2011). Secondly, adopting such an approach would mean that peer awareness would be limited to those students who had participated in the intervention, potentially meaning that the students with ASC would still be at risk of experiencing negative social interactions with untrained peers (Humphrey & Symes, 2011). Thirdly, teachers themselves view raising whole-class
awareness of the condition as an important way to promote inclusion for students with ASC (Frederickson et al., 2010; Lindsay, Proulx, Scott & Thomson, 2014), and have reported the desire to do so more than they currently do (Frederickson et al., 2010). Thus, whilst PMIs may have more empirical support, whole-group approaches have more support from the intended intervention agents.

A whole-group approach was therefore chosen as the most suitable change strategy to adopt since it overcomes the limitations of PMIs and is likely to be acceptable within the intended intervention context. This is very important, since the feasibility of implementing an intervention within the desired setting is a key consideration in intervention research, especially during the development of the program theory (Fraser & Galinksy, 2010). Furthermore, although there is limited evidence for the effectiveness of whole-class approaches with the peers of students with ASC, they have been used successfully with the peers of students with other disabilities such as Tourette’s syndrome (Holtz & Tessman, 2007), and approaches that focus on specific disabilities are found to be more effective than those which focus on disability more generally (Campbell, 2006; Godeau et al., 2010). Thus, a whole-class approach was chosen as the change strategy for raising peer awareness of ASC.

TA training is the third factor included in RESII’s programme theory. TAs have been linked to a number of negative social outcomes for students with ASC, including limited social interaction with their peers (Symes & Humphrey, 2012). This was partly attributed to TAs feeling that their role was to support the academic, rather than social development of students with ASC (Symes & Humphrey, 2011a), alongside the limited training they received before entering the profession (Symes & Humphrey, 2011b). There have long been calls for TAs to have access to a greater quantity and quality of training (Young, Simpson, Smith Myles & Kamps, 1997; Groom & Rose, 2005), with training in the use of specific strategies or interventions being preferred by TAs themselves (Symes & Humphrey, 2011b) and also being reported as resulting in the best outcomes (Farrell, Alborz, Howes & Pearson, 2010). As a result, TA training was selected as the change strategy for increasing the extent to which TAs facilitate, rather than hinder, social interaction. Furthermore, training TAs in this way served to address the limited generalisation often reported with social-skills interventions (Bellini et al.,
By training them to facilitate social interaction, they could act as a ‘bridge’ (Rossetti, 2012) between students with ASC and their peers.

It is also proposed that situating an intervention within a student’s typical classroom routines will result in the most tangible gains in social outcomes for included students with ASC (McConnell, 2002; Bellini et al., 2007), and there is empirical evidence to support this. Malmgren, Causton-Theorharis & Trezek (2005) trained three TAs supporting students with behavioural disorders to facilitate social interactions between the students they supported and their typical peers. Specifically, the TAs were taught to use a range of ‘facilitative behaviours’ (FBs), all of which were designed to increase the extent to which the supported student interacted with their peers. The TAs and their students were observed over seven weeks and it was found that, following the training, the students’ level of social interaction increased with only a minimal change in the TAs’ behaviour. A second study (Causton-Theoharis & Malmgren, 2005) included four TAs supporting four students, two of whom had ASC. The TAs received a very similar training package to those in the first study. Following intervention, the TAs used twice as many FBs, and these gains were maintained across time. Furthermore, the students engaged in 25 times more interactions, and this was also maintained across time. Given that training TAs (who seldom have access to appropriate training) seems to be an effective change strategy for improving the social outcomes of students with ASC, it was included in RESII’s programme theory.

Summary

A social-skills group, whole-class peer-awareness campaign and a TA training package were selected as the three change strategies comprising the programme theory of RESII. The social-skills group was chosen to address the social-cognition deficits of students with ASC. The evidence supporting its inclusion (e.g. Flynn & Healy, 2012) indicated that its use would lead to improved social skills (proximal outcome). In line with REPIM, it was hypothesised that this would, in conjunction with increased peer awareness, lead to the distal outcomes of social support, acceptance and interaction (Bauminger, 2002; Laugeson et al., 2009, 2012). The whole-class peer-awareness campaign was chosen to address the limited awareness of the condition amongst the peers of students with ASC. The evidence presented in this section indicated that this would lead to greater awareness of, and more positive attitudes towards, those with the
condition (Gus, 2000; Campbell et al., 2004). Again, in line with REPIM, this was hypothesised to lead to the distal outcomes (Etherington, 2007; Gus, 2000). The TA training was selected to increase the extent to which TAs facilitate social interaction between students with ASC and their peers. The available evidence indicated that training would lead to TAs displaying more FBs that promote social interaction (proximal outcome), which in turn would lead to greater social interaction (distal outcome) (Causton-Theoharis & Malmgren, 2005; Malmgren et al., 2005).

The REPIM, on which RESII is primarily based, highlights the reciprocal nature of the social experiences of students with ASC, as does the name of the intervention itself. Thus, it was anticipated that the different components of the intervention, and their respective proximal and distal outcomes would interact with, and effect, each other. For example, the social-skills group is predicted to lead to an increase in social skills, leading to a greater frequency of social interaction. At the same time, the peer-awareness campaign is hypothesised to lead to greater peer acceptance of those with the condition, improving the quality of this social interaction. Similarly, it is hoped the TA training will increase the quantity and quality of social interaction by providing more structured opportunities to engage socially with peers. Taken together, all of these would increase the likelihood that the students with ASC, through increased positive interactions, would receive greater social support and acceptance from their peers and, consequently, find it easier to develop friendships. Once friendships did develop, the TAs would be on hand to strengthen them, for example by providing more opportunities for friends to sit or work together. The reciprocal nature of this intervention is a perceived strength of RESII, with its overall impact being greater than if each component was implemented independently.

2.2.3 Implementation context
Alongside the development of a problem and programme theory, step one of the framework guiding this thesis also involves identifying the context in which the intervention will be implemented. Fraser and Galinsky (2010) emphasise the importance of ensuring that interventions are developed with the intended intervention setting, agent and recipients in mind from the outset. They argue that this increases the likelihood that the intervention will be acceptable to the target population, and implemented as planned. Indeed, acceptability of intervention programmes is one factor
that has been linked to the extent to which they are endorsed by schools (Berman & McLaughlin, 1976; Durlak & DuPre, 2008; Ringwalt et al., 2003), including interventions for use with students with ASC (Dingfelder, 2012; Dodge, 2014). Given the dual purpose of RESII (to address the negative social outcomes of included students with ASC, alongside the limitations of current approaches used to address them), it was decided that it was most appropriate for RESII to be delivered in mainstream secondary schools and to be delivered by school staff who have responsibility for ensuring the needs of students with ASC are met, most likely the school SENCo. Finally, given the need to identify strategies for use with older students, it was decided that the intended recipients of the intervention would be secondary school students aged 11-14 years. This section provides an overview of the implementation context and, in doing so, sets out why and how it was selected.

Children and young people with SEN in England have the legal right to attend a mainstream school, in so far as that is appropriate (SENDA, 2001), and approximately 70% of students with ASC identified as having SEN do (Department of Education, 2014). Mainstream schools were selected as the intervention setting for RESII for three, interrelated reasons. Firstly, RESII was designed to address the negative social outcomes currently experienced by students with ASC attending mainstream schools, making it a highly relevant setting. Secondly, it hopes to improve social outcomes for these learners by including their peers and TAs in its delivery. Practically speaking, access to these groups will be most likely within a mainstream school setting. Thirdly, RESII was also designed to overcome the limitations of typical approaches to improving the social outcomes of students with ASC. Two of these limitations relate specifically to mainstream schools, namely that typical approaches seldom include peers and TAs in their delivery, and that they are rarely conducted or evaluated in mainstream settings. Implementing RESII in mainstream settings would therefore address each of these limitations, and allow the aims of RESII to be met.

The lack of social interventions for students with ASC currently designed or evaluated within mainstream school settings means that there is little ‘…empirical evidence to inform practice and policy with regard to what ‘best practice’ means in real world classrooms’ (Parsons et al., 2011, p.61). This is a concern, since as increasing numbers of children with ASC enter mainstream schools, those responsible for supporting them
in these settings, such as SENCos in England, have few appropriate and reliable approaches to draw on. Furthermore, the approaches that are available may be limited if they were not explicitly designed to be delivered by teachers or other support staff (McConnell, 2002). RESII overcomes these issues not only by being designed for use in mainstream schools, but also by considering the potential delivery agents, and how it might be implemented in practice. Specifically, RESII was designed to be delivered by school SENCos. As noted in section 1.2, SENCos in England are responsible for co-ordinating provision for children and young people with SEN and/or disabilities in schools, and all schools are required to nominate a member of staff to adopt this position (SEN code of practice, 2014). The roles and responsibilities of the SENCo are set out in the SEN code of practice (2014) and include not only supporting students with SEN, but also the adults, such as teachers and TAs, who work with them. Therefore, in England at least, SENCos seem well placed to deliver RESII as it both fits within, and supports, their role.

Finally, RESII was designed for use with secondary school students with ASC. Although it is acknowledged that students with ASC can find adolescence a particularly challenging time (Laugeson et al., 2009), their difficulties are likely compounded by the lack of interventions developed with their needs in mind (Webb et al., 2004). Furthermore, approaches that are successful for younger students may not be suitable for use with older students due to characteristics specific to secondary schools. The emphasis on formal curriculum subjects, alongside the high-stakes nature of examinations in secondary schools, can mean that these schools and their teachers are more reluctant to endorse non-academic interventions, and allocate time to their delivery (Berman & McLaughlin, 1976; Greenberg, 2010; Lendrum, Humphrey & Wigelsworth, 2013). Fraser & Galinsky (2010) identify ways in which these barriers can be overcome, such as by linking intervention content to examination curricula, but the very narrow focus of RESII, combined with its emphasis on social, rather than academic outcomes would make it difficult to achieve this. Thus, whilst RESII was initially intended for use with secondary school students aged 11 to 16 years, this was revised to 11 to 14 years. As the final two years of secondary schooling in England are dominated by high-stakes examinations (General Certificate of Secondary Education, GCSEs), it was felt that this could act as a barrier to implementation. However, it was
hoped that through trialling RESII with younger students, this barrier could be more clearly understood, and potential strategies to overcome it could be identified.

The intended intervention recipients influenced the design of RESII’s problem and program theory (e.g. through the inclusion of research examining the views of included students with ASC, see section 2.2.1), the peer awareness campaign (e.g. through focus groups, see section 3.1.2) and through interviews with students participating in both studies presented in this thesis (see chapters four and five). However, the structure of RESII, and the research conducted to examine its appropriateness and efficacy was predominately determined by the researcher. In this way, the research was primarily conducted on the students with ASC, as opposed to with them. This imbalance of power is recognised as a limitation of research involving participants with disabilities, including ASC (Nind, 2008). Indeed, restricting the extent to which the views of individuals with ASC influenced the work presented in this thesis, may have lead to factors important to them being overlooked and, consequently, the extent to which they engaged in the intervention may have been impacted as a result (Fraser & Galinsky, 2010). The potential consequences of this imbalance are considered again in section 6.3.

2.3 Conclusion
This chapter has provided an overview of RESII and the evidence supporting its design. In doing so, this chapter represents step one in the framework for intervention research guiding this thesis. This step involves the development of a problem theory, programme theory and identification of the implementation context. RESII’s problem theory identifies the social-cognition deficits of students with ASC, a lack of peer awareness, and the impact of TA support as factors underlying the negative social outcomes of students with the condition. RESII attempts to address each of these factors through its programme theory, which identifies social-skills training, a whole-class, peer-awareness campaign and training package for TAs as potential change strategies. It is anticipated that these strategies will lead to greater social skills, peer awareness, and use of FBs, respectively. These proximal outcomes are hypothesised to lead to the targeted distal outcomes of increased social support, acceptance and interaction, all of which would lead to more positive social experiences for secondary school students with ASC attending mainstream school.
RESII is unique because it addresses the limitations of current approaches to supporting the social needs of young people with ASC. For example, interventions to improve the social outcomes of students with ASC have been criticised for failing to take into account the role others can play in their social outcomes (e.g. Bauminger, 2002; McConnell, 2002), and RESII addresses this by including peers and TAs in the interventions’ programme model. In addition, typical approaches are seldom conducted within school settings (e.g. Parsons & Kasari, 2013). RESII was explicitly developed with the intended implementation context in mind, and was designed to be delivered within mainstream secondary schools. Furthermore, the needs of older students with the condition, and the approaches that work best for them, are less well understood than those of younger students (e.g. Bond et al., 2016). RESII was therefore designed for use with secondary school students aged 11-14, and students within this age range were included in the participant samples of the research conducted throughout this thesis. Finally, intervention studies typically report limited generalisation of intervention gains to the students’ wider educational setting (e.g. Crosland & Dunlap, 2012). Conducting RESII within the routines and structures of the school day, including peers, and using TAs to facilitate social interactions during lesson times, were all ways in which RESII was developed to improve the generalisation of outcomes. These limitations were considered not only throughout the development of RESII’s programme model, but also throughout the design of the specific intervention content, which was the second step in the process of designing the intervention. The activities conducted during the second step are documented in the following chapter.

2.4 Aims and Research Questions
The overall aim of this thesis was to design an intervention that could be used in mainstream secondary schools to improve the social outcomes of students with ASC. Specifically, research was conducted to assess the initial feasibility and efficacy of RESII. Accordingly, the following research questions guided the research activities in an attempt to determine the extent to which RESII met these aims:

1. Is RESII appropriate for use within mainstream secondary schools, and can it feasibly be implemented in such settings?
   a. Do school staff and students perceive RESII as being appropriate and acceptable for use in mainstream secondary schools? For example do
they feel it adequately addresses the needs of students with ASC and those supporting them?

b. Can RESII be implemented as intended in a mainstream secondary school setting?

c. What are the barriers and facilitators to implementing RESII?

2. Does RESII have a positive impact on the social inclusion of students with ASC?

   a. What impact does RESII have on the social skills of students with ASC, peer awareness of ASC and TA use of facilitative behaviours?

   b. What impact does RESII have on the social outcomes of students with ASC, namely the level of social support and acceptance from peers, and the level of social interaction?
Chapter 3
Selecting and developing RESII’s content

‘We must...raise the bar for the development of interventions to be school ready; this includes the possibility that interventions can be collaboratively developed and defined between research teams and schools’ (Parsons & Kasari, 2013, p.251)

The previous chapter introduced RESII’s programme model, including an overview of the literature underlying its problem theory, programme theory and implementation context. In doing so, chapter two represents the first step in the framework for intervention research guiding this thesis. The second step in the framework involves the design of the intervention content, and this process is presented in this chapter.

Specifically, this chapter outlines how the content for the social-skills group, whole-class peer-awareness campaign and TA training package was selected and developed (section 3.1), alongside the process of identifying the essential programme elements and accompanying fidelity criteria (section 3.2). As with the development of the problem and programme theory, the selection of the content for RESII was influenced by the intended intervention setting. Intervention researchers (see Campbell et al., 2000; Fraser & Galinksy, 2010) recommend that the content be developed not only with the implementation context in mind, but that it should be determined in direct collaboration with the intended intervention agents and recipients. This suggestion has recently been endorsed within the ASC intervention literature, where it is claimed that too often intervention content is designed that is at odds with the routines, structures and needs of those who will be using them, thus making it less likely that they will be adopted in practice (Kasari & Smith, 2013; Parsons & Kasari, 2013; Parsons et al., 2013).

With the above in mind, two approaches were taken during the second step of this piece of intervention research to ensure the ‘school-readiness’ (Parsons & Kasari, 2013) of RESII. Firstly, the views of school staff and students, and an overview of the practice already being used in schools, was actively sought through in-depth conversations with staff and students (Campbell et al., 2000; Fraser & Galinsky, 2010; Parsons et al., 2013) from three ‘good practice’ secondary schools. Secondly, the suitability of the intervention content to the intended setting was given priority over the empirical evidence to support its use. That is, a highly pragmatic approach was adopted whereby strategies and materials already used by schools, or recommended for use in schools,
were prioritised over those reported in the literature (McConnell, 2002; Kasari & Smith, 2013). This is in line with the recommendations of intervention-research frameworks, which emphasise the importance of developing feasible intervention content in the early stages of the intervention research process, before establishing effectiveness later on (Campbell et al., 2000; Fraser & Galinsky, 2010). Indeed, Fraser and Galinsky (2010) stress the iterative nature of intervention design, arguing that earlier stages of the intervention research can be returned to at any point if findings from later stages indicate a lack of intervention appropriateness or effectiveness. Thus, whilst theoretical and/or empirical evidence was sought to support the inclusion of intervention content, it was selected primarily on the basis of its feasibility. This was on the understanding that content might be amended if findings from later stages of the intervention research (such as those presented in chapters four and five of this thesis) indicated RESII was ineffective at improving the social inclusion of students with ASC attending mainstream secondary schools.

3.1 **Designing the content of RESII**

This section outlines how the content for the social-skills group (section 3.1.1), peer-awareness campaign (section 3.1.2) and TA training package (section 3.1.3) was selected and developed. The first step in designing the content of the intervention was to identify materials currently used by schools to support the social inclusion of students with ASC. To do this, the researcher approached three secondary schools that had participated in the large-scale ESRC study from which the REPIM, the model underlying RESII’s problem theory, was developed. Through data collected in the ESRC study, these three schools had been identified as displaying good practice in including students with ASC (Humphrey & Symes, 2012). For example, students with ASC attending these schools were more likely to be socially accepted, and less likely to be socially isolated than their ‘average’ counterparts (see Symes & Humphrey, 2010). Such findings are important as they suggest that the negative social outcomes for students with ASC reported in section 1.3 are not universal. It is possible for learners with the condition to develop friendships and engage in positive interactions with their peers. Indeed, other research has reported positive outcomes for included students with ASC, and has linked this to school practice (e.g. Ochs et al., 2001). Examining the practice of schools where students with ASC appear to be protected from negative
social outcomes therefore offers the opportunity to learn more about how they their social lives can be improved.

The publications arising from the ESRC study, combined with the length of time the researcher had previously spent in each school as part of that study (approximately nine weeks per school) meant that the researcher already had a nuanced understanding of the typical strategies used and the context in which they were employed. Fraser & Galinsky (2010) highlight the importance of such knowledge for the design of intervention content that can be feasibly implemented in practice. This exercise was conducted purely to identify material (e.g. worksheets, pictures, presentations) that would be appropriate for use within RESI, and not to generate theory or answer a specific research question.

The three schools that participated in this exercise were all located within one local-authority in the North-West of England. At each school, the researcher met with the member of staff most responsible for overseeing the support provided to students with ASC. In school one, this was a Higher Level Teaching Assistant (HLTA – a TA who can take on some teaching responsibilities (TDA, 2007)), in school two, this was the school SENCO, and in school three it was a School Psychologist. In addition, the researcher met with nine students with ASC in school two, three each from school years seven, eight and nine, respectively. The researcher held one, one hour, semi-structured conversation with each member of school staff. These conversations were guided by four broad questions (‘What do you currently do to support the development of social skills in students with ASC?’; ‘What do you currently do to increase awareness and understanding of ASC?’; ‘What training do you provide to TAs working with students with ASC?’ and; ‘Do you do anything else to support the social inclusion of students with ASC?’). Answers were audio-recorded, and copies of relevant materials (e.g. worksheets used to develop social skills) were made. Similarly, the researcher held hour-long informal conversations with the students from school two, based loosely on two questions (‘What would you like your peers to know about ASC?’ and; ‘What would be the best way to teach your peers about ASC?’). Answers were audio recorded. In addition to these initial conversations, the researcher returned to school two once the peer awareness content had been developed to seek the students’ feedback. Responses
were marked on the relevant parts of the peer-awareness campaign script, and changes to the content made accordingly.

Extracts from the conversations with staff and students are presented occasionally throughout the following subsections to clarify some of the decisions made. In cases where the schools did not carry out appropriate interventions (i.e. those that matched RESII’s programme theory), or where the materials used were too ad hoc or context-specific to be incorporated into RESII’s content, the researcher identified other, pre-existing materials recommended for use in schools. As noted in the opening paragraph of this section, the feasibility of implementing potential intervention content within a secondary school setting was of paramount concern throughout this step of the intervention research. Thus, whilst empirical research was sought to further support the inclusion of the content selected for use in RESII, the suitability of the content to the intended intervention setting was prioritised over the existing evidence-base supporting its use. At times, this resulted in tensions between acknowledging what would work in a school in terms of feasibility, and what the literature suggests works best in terms of effectiveness. These tensions are highlighted in the following sections, and the rationale behind the final decisions made is discussed.

3.1.1 Social-skills group

In RESII’s programme theory, a social-skills group was selected as the change strategy for improving the social cognition of students with ASC. This section outlines how the content of the social-skills group was selected, beginning with the findings from the good-practice schools. In line with the types of interventions that appear to be popular for use with secondary school students with ASC (see table 1.1), two of the three schools used social-skills groups to improve the social outcomes of their learners with ASC, and felt that these were effective. Both schools had developed the content for the group themselves, and neither used a manualised programme, or a programme based on theory or empirical research. Instead, the content of the social-skills groups tended to comprise of activities taken from a range of different resources (not all of which were specifically for use with students with ASC), or developed ‘in-house’. This is perhaps unsurprising given that firstly, although there is evidence supporting the use of social-skills groups with school age children (Parsons et al., 2009; Reichow & Volkmar, 2010), few interventions are designed with school settings in mind (Bond et al., 2016;
Reichow & Volkmar, 2010), especially secondary schools (Bond et al., 2016; Parsons et al., 2009; Reichow & Volkmar, 2010). Secondly, the empirical support for individual social-skills group programmes is limited (Cappadocia & Weiss, 2011). For example, of the six social-skills group included in table 1.1, only one of them was examined in more than one study (Laugeson et al., 2009; 2012), and neither of those two studies took place in an educational setting. Overall, the choice of established social-skills groups for use with secondary school students is limited, making it difficult to identify a suitable programme for use within both the good-practice schools and RESII.

One of the good-practice schools, however, had links with an organisation called ‘Middletown Centre for Autism’, who play a central role in educational provision for children with ASC in Northern Ireland and the Republic of Ireland. Staff at the school alerted the researcher to the fact that the organisation currently endorsed a social-skills group called ‘Attention Autism’ (Davis, 2014), which they had been using in secondary schools. Although the effectiveness of the intervention had yet to be formally established, there was anecdotal evidence that Attention Autism was well received by students and schools alike, and initial indicators suggested that it was having a positive impact on the social outcomes of students with ASC (McCanney, 2012). Attention Autism, which was developed by a Speech and Language Therapist, seeks to improve social skills through developing attention skills in real-life situations. The programme is informed by theory linking attention skills development to language development in children with communication impairments (Cooper, Moodley & Reynell, 1978). The theory proposes that there are six stages of attention skill development, starting with limited ability to attend to stimuli, moving towards the ability to shift attention from one stimuli to another, and ending with the ability to attend to a number of stimuli simultaneously, including those that are not of direct interest to the child. The theory assumes that in order for a child to participate fully in social communication, they must have the ability to shift their attention to others, and sustain their attention once engaged. Therefore, attention skills foreground the development of social skills. The theory assumes that all children will develop these skills sequentially, but that some children, such as those with ASC, may take longer to develop them, or may be unable to move from one stage to another without additional support.
Since it’s publication, Cooper et al.’s (1978) theory of attention development has formed the basis of a number of other language and communication interventions (see, for example, Cooper, Moodley & Reynell, 1979; Rees & Williams, 1992). It is important to note, however, that such interventions have not been rigorously evaluated (Pearson, 1995), or developed specifically with children with ASC in mind.

Nonetheless, the theory influenced a number of items on the Diagnostic Interview for Social and Communication Disorders (DISCO), an instrument widely used in the diagnosis of ASC (Wing, Leekam, Libby, Gould & Larcombe, 2002), highlighting its relevance to the ASC population. Furthermore, Speech and Language Therapists across England and Wales are encouraged to draw on the theory in their practice by a range of organisations (e.g. Jill McMinn, 2014; Leeds Community Healthcare, 2012; Nottinghamshire Speech and Language Therapy Service, 2014), suggesting it is valued by practitioners. Thus, whilst empirical support for the theory may be limited, it clearly has practical implications for the identification and support of children and young people with ASC, and may therefore serve as a useful starting point for social-skills interventions with this population.

Reflecting the theory on which it is based, each Attention Autism session comprises five distinct parts, three of which target a different attention skill. These are shown in table 3.1, below.
Table 3.1 The parts of an Attention Autism session, procedure and targeted attention skill

<table>
<thead>
<tr>
<th>Part</th>
<th>Name</th>
<th>Procedure</th>
<th>Targeted attention skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Preview</td>
<td>The group leader writes and draws each activity on a whiteboard, so that the group can always see what is coming next.</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>The Box</td>
<td>The group leader takes a toy/object of interest out of a box and shows it to the group (e.g. shows them how it works). Students are not allowed to touch this object, or the box.</td>
<td>The ability to shift attention to others</td>
</tr>
<tr>
<td>3</td>
<td>Getting into the Zone</td>
<td>The group take part in a sensory activity</td>
<td>The ability to engage in joint attention</td>
</tr>
<tr>
<td>4</td>
<td>Attention Builder</td>
<td>The group leader demonstrates how to carry out an activity. Next, one of the students demonstrates the activity. Finally, all the students carry out the activity themselves.</td>
<td>The ability to engage in sustained attention, and to simultaneously shift attention to others.</td>
</tr>
<tr>
<td>5</td>
<td>Review</td>
<td>Each session ends with a review of the session’s activities, providing a clear end to the session.</td>
<td>None</td>
</tr>
</tbody>
</table>

As with the theory on which Attention Autism is based, evidence supporting the effectiveness of the programme is limited. In fact, there is currently no empirical evidence regarding the efficacy or effectiveness of the Attention Autism programme, despite it being highly popular with schools (Davies, 2014) and students alike (McCanney, 2012). Findings elsewhere can, however, provide support for its use. For example, there is a clear evidence base that suggests that programmes focusing on attention can result in positive social outcomes for young children with ASC, including increased engagement in social interaction (Bond et al., 2016; Parsons et al., 2011; Kasari & Patterson, 2012). However, it is important to note that the above evidence primarily provides support for the use of the Attention Autism programme with young children, and indeed, the programme was originally designed with preschool-age children in mind (Davies, 2014). Thus, it is not clear whether it will work as intended with older students. Indeed, there is far less evidence supporting the impact of developing attention skills on social skills in older children, perhaps because interventions for this age group tend to focus on teaching discrete social skills, rather than developing broader abilities (Bond et al., 2016).
Furthermore, Attention Autism was designed to encourage basic forms of communication (Davies, 2014). It is not clear whether it would be effective for developing the more complex social skills required for adolescent interactions, nor if it could improve social inclusion (e.g. the development of friendships). This has important implications for RESII, given that the programme theory underlying it proposes that improvements in social skills will lead to more positive social outcomes more generally. It is possible that Attention Autism will be unsuccessful in developing appropriate social skills in secondary school-age students, thereby reducing the extent to which they are able to befriend or interact effectively with their peers. Despite these limitations, Attention Autism was included in RESII based on the positive anecdotal evidence from Middletown Centre for Autism, and it’s inclusion presents an opportunity to examine the impact of an attention-focused intervention on secondary school students with ASC.

Despite a lack of research examining the effectiveness of developing attention skills, or using Attention Autism, with older students, support for its use can be found in studies examining the effectiveness of other social-skills groups with this age-group. For example, the lunchtime club described in the Koegel et al. (2012) study (see table 1.1) increased the rate of social initiation and engagement in adolescents with ASC through promoting joint participation in shared activities. The basis of this intervention bears many similarities with Attention Autism, which also seeks to elicit social interaction through engaging activities, and its findings are similar to the initial outcomes reported by Middletown Centre for Autism (McCanney, 2012). The study by Davis (2010, see table 1.1) similarly indicated that basing a social-skills intervention on common interests can lead to increases in social interaction, even beyond the intervention setting. Taken together, the evidence supporting the theoretical basis and use of Attention Autism suggests that the programme may be considered at the very least an evidence-informed intervention.

Evidence-informed interventions constitute practice based on a number of sources, including, but not limited to, empirical evidence (Nevo & Slonim-Nevo, 2011). This is in contrast to evidence-based practice, which is practice based on the ‘strongest’ empirical findings within a particular field (Nevo & Slonim-Nevo, 2011). Whilst evidence-based practice is regarded by some as the ‘gold standard’ for educational practitioners (Biesta, 2007), there is debate as to whether it is in fact superior to
evidence-informed practice. It is argued, for example, that evidence-informed practice is better suited to applied fields, such as education, where practitioners need to ‘connect intellectually, practically and emotionally with the knowledge they are offered…’ (Cordingley, 2008, p. 37). That is, teachers and other professionals working with students, such as those with ASC, may be more likely to engage in practice if it is based on ideas and concepts that align with their own beliefs, than with empirical findings. Furthermore, it is argued that an evidence-informed approach is favourable to basing decisions purely on theory, since what works in theory may not always work in practice (Chalmers, 2005), especially in education settings where numerous individual and contextual factors may interact to disrupt outcomes (Biesta, 2007). Thus, in line with recommendations from the intervention research field that feasibility is considered of paramount importance in early stages of intervention research, and the benefits of an evidence-informed approach, the Attention Autism programme was selected as the social-skills group for use in RESII. This decision was primarily based on the fact that it seemed appropriate and feasible to implement within mainstream secondary school settings, alongside the (albeit limited) initial findings regarding its efficacy, and theoretical and empirical evidence supporting its use.

The researcher attended three training sessions prior to trialling the Attention Autism programme. The first training session was a two-hour, one-to-one session with the programme developer, whereby each session component was described, and the rationale behind them explained. In this session, the programme developer also highlighted how the programme could be used for older students, and they suggested some age-appropriate activities to use. This was followed by two whole-day events aimed at school staff interested in using the programme, which are held regularly by the programme developer (Davis, 2014). They involved a more in-depth presentation of the theory underlying Attention Autism, and provided opportunities to practice developing and implementing activities appropriate to the aims of each part of an Attention Autism session. It is important to note that whilst this training was invaluable, it is not possible to objectively determine the extent to which the researcher implemented the programme as intended in practice, as they were not observed delivering it. Furthermore, the majority of the training the researcher received focused on using Attention Autism with younger students, meaning it may not necessarily have been appropriate to the samples used in studies one and two of this thesis (see chapters four and five, respectively).
Whilst no specific activities are recommended for use within each session, activities should be designed with both the aims of the relevant session part and the group participants in mind. For example, the developer does not specify which toys should be used for ‘the box’, but advises that the objects used be sufficiently interesting to capture the attention of those attending the group. This allows the intervention to be tailored to the specific participants in the group. This is beneficial, since this seems to be an approach typically favoured by school staff working with students with ASC (Kasari & Smith, 2013; Parsons et al., 2013). Initially, the researcher based session activities on session plans provided by Middletown Centre for Autism, and also contacted the programme developer to confirm that the proposed activities were appropriate (G.Davies, personal communication, January 12th, 2013). As the researcher became more experienced, she began to develop session activities herself. See appendix 3.1 for an example of an Attention Autism session developed by the researcher.

Each of the three training sessions also examined how the Attention Autism sessions should be delivered in practice. That is, they outlined guidelines the implementer should follow when running the programme. Based on notes made during the training sessions and information provided by Middletown Centre for Autism, the researcher devised a list of instructions to follow when implementing Attention Autism, and these can be found in appendix 3.2. One aspect of the programme that is not specified is how many sessions should be delivered. Middletown Centre for Autism staff typically delivered the programme once a week for one school term, before then handing it over to school staff to continue running themselves. Since the researcher would also be delivering the intervention initially, it was decided that they would also deliver the programme once a week for one school term. In England, where RESII is intended for use, school terms are typically 10-12 weeks in length. To allow time for data collection before and after the programme, and ensure the sessions didn’t clash with end of term activities, it was decided to run the programme for eight weeks. Unfortunately this is two-thirds of the time that has been recommended for running a social-skills group with school-aged children and young people with ASC (Reichow & Volkamr, 2010). However, as mentioned previously, a key driver behind the development of RESII was the need for it to be feasibly implemented in schools, and the duration of social-skills groups is likely to be dictated by the academic calendar (Mackay et al., 2007). Furthermore, other
reviews of social-skills interventions have not found significant relationships between the number and length of interventions sessions, or the duration of the intervention period, and outcomes (e.g. Bellini et al., 2007).

In terms of session length, it was decided that the group would run for 30 minutes each week. This decision was based on the recommendations from the programme developer that the session not last more than 30 minutes, the way in which Middletown Centre for Autism had implemented the programme, and, most importantly, the feasibility of carrying out the group within typical school routines. Based on the practice carried out in the good-practice schools, it seemed likely that the students would be given between 50 and 60 minutes (the length of a standard lesson) in which to attend the group. Taking into account the time students would need to arrive at the session, and leave for their next lesson, 30 minutes appeared a feasible length of time in which to get through all of the Attention Autism activities. Furthermore, in line with the Attention Autism programme, two adults were involved in the delivery of the programme: the researcher, who would lead the group, and a teacher or TA to support them. Furthermore, the group would comprise four to six students, and these would be students with and without ASC (for more on these guidelines, see section 3.2).

Summary
This section has outlined how the content for the social-skills group of RESII was developed. The Attention Autism programme was chosen as the specific social-skills group programme, based on the positive initial findings about the impact of the programme on the social outcomes of secondary school students, presented by Middletown Centre for Autism (McCanney, 2012), combined with the important fact that it seemed feasible to implement within mainstream secondary school settings. It was decided that the group would be run for 30 minutes, once a week for eight weeks. This decision was based on the ways in which Middletown Centre for Autism had implemented the programme, the recommendations from the programme developer that the session not last more than 30 minutes, and the feasibility of carrying out the group within typical school routines. Section 3.1.2 will now describe the process of developing the content for the peer-awareness campaign. As with the social-skills group, this process drew on the strategies currently used, or recommended for use, in
mainstream school settings, and incorporated the views of staff and students from the good-practice schools.

3.1.2 Peer-awareness campaign

A whole-class, peer-awareness campaign was selected as the change strategy for raising peer understanding of, and attitudes towards, children and young people with ASC. The peer-awareness campaign was developed with three aims in mind. It was hoped that by the end of the programme the peers would: (1) know what ASC is (increased awareness), (2) want to work with/spend time with a student with ASC (increased acceptance of difference), and (3) would understand how to support a student with ASC (improved quantity and quality of social interactions). These three aims were developed from the REPIM (Humphrey & Symes, 2011, see figure 2.2), the model on which the inclusion of peers in RESII’s programme theory was primarily based. The aims reflect three key peer factors identified by the REPIM as contributing to the negative social experiences of students with ASC attending mainstream schools, namely lack of awareness and understanding of ASC, reduced acceptance of difference and reduced quality and frequency of peer interaction, respectively. It was proposed that addressing these factors would not only improve the type and level of social interaction between students with ASC and their peers, but also protect them from more negative social outcomes such as bullying and loneliness, as predicted by the REPIM. This section outlines how the content of the peer-awareness campaign was selected to meet the three aims, beginning with the findings from the good-practice schools.

In line with the approach that appears to be popular with school staff (Frederickson et al., 2010), all three of the good-practice schools used disclosure of diagnosis sessions to raise peer awareness of ASC. Similar to those described in Ochs et al., (2000), these sessions tended to be one-off (often in response to a specific incident or behaviour) and were typically delivered by the school SENCo to the focal-student’s teaching or form group, using materials developed in house, or online resources such as videos. These findings have important implications for RESII’s intended implementation context, since they indicate that SENCOs are well-placed to deliver a peer-awareness campaign, and that secondary schools are receptive to allocating the time for them to do so. However, unlike RESII’s programme theory, the good-practice schools favoured disclosure of diagnosis over more sustained, whole-class approaches, and such sessions
were regarded as successful in improving peer awareness of ASC, as the following example illustrates. In school one, a student with ASC always wanted to be first in the queue at lunchtime. This created problems with his peers who didn’t like him ‘pushing in’. A teacher explained to the peers that the student’s behaviour was a result of them having ASC, and explained how the condition could make it difficult for him to follow some social rules. This approach seemed to be successful, with the HLTA who supported the student commenting that: ‘After that I did notice a difference like with the queuing and it was as if some of the boys realised ‘Oh, it does mean more to him, maybe I’ll just let it go’ rather than aggravating the situation which was happening before.’ (TA, school one).

Despite their apparent popularity and success, switching to a disclosure of diagnosis approach was not considered for RESII. Whilst this may appear counter-intuitive, given that decisions in this step of the intervention research were made predominately based on feasibility (with disclosure of diagnosis appearing to be a feasible approach), there were a number of reservations against using this approach (as noted in section 2.2.2 in the previous chapter), including the fact that it relied on students being comfortable with their diagnosis being revealed. Discussion with students with ASC in one of the good-practice schools revealed that this could be a source of anxiety for some of them, and similar concerns have been reported elsewhere (e.g. Humphrey & Lewis, 2008). The majority of the nine students asked said that they would not like their peers to know about their diagnosis, and this was because they worried that their peers might treat them differently as a result, as the following extract shows:

**Researcher (R):** ‘What do you think would happen if people knew that you had autism?’

**Student one (S1):** ‘Just start taking the mickey out of me and saying stuff about me’

**Student two (S2):** ‘They might act differently with you…’

**Student three (S3):** ‘Treat you different…’

S2: ‘Yeah, like you’re dumb, probably’

R: ‘So they would treat you differently in a bad way?’

S2: ‘They might be nicer to you but…I don’t know’

Taking these two conflicting views into account, combined with the fact that a one-off session was unlikely to address all of the peer-awareness campaign’s aims in sufficient
depth, content for a longer, but more general (i.e. not focused on a specific student), peer-awareness campaign was sought, in keeping with RESII's programme theory. Whilst some of the content used by the good-practice schools was relevant to the aims of the peer-awareness campaign, it was limited in that it did not cover ASC in sufficient breadth or depth, and relied exclusively on disclosure of diagnosis. As a result, further appropriate content was sought elsewhere. This process was guided by the five features of effective campaigns to educate peers about ASC outlined in Campbell (2006). Campbell proposes that changing peer attitudes and behavioural intentions towards students with ASC should be regarded as a process of persuasive communication. Drawing on social psychological literature, he identifies five important persuasive components likely to be related to the effectiveness of programmes designed to educate peers about ASC. These are: who will deliver the message (source), what the message will be (message), who will receive the message (audience), how the message will be delivered (channel/medium), and the characteristics of the child with ASC presented to the audience (ASC characteristics). These five factors were used as a guide for developing the peer-awareness campaign described here, and they structure the remainder of this section. A summary of the source, message, audience, channel and ASC characteristics of the peer-awareness campaign is presented in table 3.2.

Table 3.2 A summary of the source, message, audience, channel and ASC characteristics of the peer-awareness campaign

<table>
<thead>
<tr>
<th>Persuasive component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>School staff involved in supporting included students with ASC, most likely the school SENCo.</td>
</tr>
<tr>
<td>Message</td>
<td>Drawn from materials used by the good-practice schools, and other peer-awareness materials designed for use in schools, which address the aims of the campaign. Includes explanatory, descriptive and directive information.</td>
</tr>
<tr>
<td>Audience</td>
<td>Peers with whom the focal student with ASC spends a significant amount of time, most likely their teaching group (with whom they share the majority of their lessons), or experiences the most social difficulties</td>
</tr>
<tr>
<td>Channel</td>
<td>The message is delivered via PowerPoint presentation, videos, and an experiential approach.</td>
</tr>
<tr>
<td>ASC characteristics</td>
<td>The similarities between students with ASC and their typical peers are emphasised, as are pro social behaviours.</td>
</tr>
</tbody>
</table>

With regards to the source of the message, and in line with the intended implementation context for RESII (see section 2.2.3), the campaign was designed to be delivered by the
school staff responsible for supporting students with ASC, most likely the school SENCo who the structured conversations had shown typically conducted peer-awareness sessions in schools. This is important, since RESII was designed specifically to fit within typical school routines. Furthermore, the use of SENCos to deliver the campaign also offers an advantage as information sources that have higher credibility (e.g. through high levels of expertise), and power or status, are likely to be most effective at changing peer attitudes towards ASC, with school staff being particularly effective sources of communication for older school children (Ferguson & Campbell, 2004). Taken together, SENCos appear well placed to deliver the peer-awareness campaign. A possible limitation of using SENCos, however, is that whilst they may be the member of school staff with the highest formal responsibility towards students with ASC (SENDA, 2014), they may not have the most detailed knowledge of the social experiences of these learners. As the staff at the good-practice schools showed, it may not always be the school SENCo who has responsibility for overseeing the day-to-day provision for students with ASC, with a HLTA and a School Psychologist taking on this role in schools one and three. Thus, whilst SENCOs may have the time to deliver such programmes, the intended intervention agent should not be limited to SENCos only, as other staff may have additional knowledge and expertise that could leave them better placed to deliver the peer-awareness campaign.

With regards to the message, content was drawn from existing approaches to raising peer awareness, combined with the recommendations from Campbell (2006). Materials used by the good-practice schools (National Autistic Society (NAS), n.d.), resources recommended for use in schools (Gray, 2004; NEELB TV, 2013), and content previously used successfully in interventions with similar aims to the peer-awareness campaign (Gus, 2000; Etherington, 2007) influenced the content of the message delivered throughout the campaign. A pre-established campaign (such as that set out in Gray, 2004) was not adopted for use within RESII, as no one resource addressed all of the aims of the campaign, which were developed in line with the problem theory underlying the intervention. In line with recommendations from Campbell (2006) the message communicated to peers included explanatory information, such as how ASC impacts on behaviour; descriptive information, such as information about the personalities and interests of students with ASC; and directive information to educate peers about how they can support students with ASC. An outline of the content of each
session, the sources on which the content was based, the type of information the content provides (descriptive, explanatory or directive), and which aim of the peer-awareness programme it addresses can be found at appendix 3.3.

The audience selected to receive the intervention were the peers with whom the focal student with ASC spends the majority of their school time, most likely their teaching group (the class with whom they share the majority of their lessons), or the student group with whom they experienced the most social difficulties. This concurred with the practice in the good-practice schools, where the campaign was delivered where needed. Furthermore, it increased the likelihood of the targeted outcomes being achieved, since the peers receiving the intervention would have a lot of contact with the focal student with ASC, thus providing opportunities for them to capitalise on their increased awareness and acceptance of the condition. This is important since Campbell (2006) proposes that limited prior knowledge of ASC can lead to peers making incorrect assumptions about the condition, particularly regarding the source of the student’s behaviour. Raising the awareness of the peers with whom the focal students spend the most time and/or experiences the most problems may therefore be particularly effective, if the problems are a result of limited prior knowledge of ASC. Finally, it was decided that the students with ASC would be included in the audience, in so far as they were comfortable to do so, as it is acknowledged that as adolescence can be a time of increasing self awareness for these students, learning more about the condition could be beneficial for them, as well as their peers (Broderick et al., 2002).

In terms of channel/medium, the message content was delivered via PowerPoint slides (see appendix 3.3), pre-existing videos, interactive activities and an experiential approach. The good-practice schools also used PowerPoint presentations and videos in their disclosure of diagnosis sessions, indicating that they were a feasible channel through which to deliver the campaign message. Campbell reports that a message is more persuasive if trustworthy sources (in this case, the school SENCo) use in vivo video presentations to deliver it, as opposed to text (Pornpitakpan, 2004), although it is stressed that research examining this in peers of students with ASC is limited (Campbell, 2006). Almost all of the descriptive and explanatory information (which are deemed as necessary for the best outcomes, see message, above) was delivered via video. These pre existing videos were selected based on their relevance to the campaign
aims, message, and suitability for use within secondary school settings. Two of the three videos came from a website containing resources to support teachers in Northern Ireland, including those working with students with ASC (NEELB TV, 2013), and the third was a video about dyslexia (Chocolate Films Workshops, 2010); relevant for session three when introducing ‘hidden’ disabilities), recommended by the School Psychologist in school three. A strength of the videos is that there were intended specifically to educate children and young people about disabilities/ASC, and they were both presented by students with disabilities/ASC of a similar age to the intended intervention audience, providing peers with positive ‘real-life’ examples of students with the condition.

The use of ‘real-life’ examples further relates to the justification for including interactive and experiential content in the peer-awareness campaign. An experiential approach, whereby students either experience how it may feel to have ASC, or imagine a student with ASC joining their class, was chosen as a channel to deliver the message as Campbell (2006) reports that these are more effective that more passive, educational approaches (e.g. video alone). This is supported by the findings from Gus (2000) and Etherington (2007), both of which resulted in increased awareness of ASC through ‘real-life’ experience of the condition, and the finding that purely educational campaigns may not be successful in changing peer attitudes towards those with disabilities (Godeau et al., 2010).

Finally, with regards to the characteristics of ASC that were presented to the peers, material that highlighted the similarities between students with ASC and typical peers, and demonstrated them engaging in pro social behaviour was sought based on Campbell’s (2006) assumption that such an approach can result in more positive attitudes towards those with the condition.

One aspect that is not considered in Campbell’s framework is the recommended number and duration of peer-awareness sessions needed to produce the best outcomes. The peer-awareness campaign was designed to be delivered across eight, 20-minute sessions. This was for four reasons. Firstly, previous intervention research in schools suggests that the competing demands of the secondary school curriculum may make it difficult for schools to find time for non-academic interventions (Berman & McLaughlin, 1976;
Greenberg, 2010; Lendrum et al., 2013). Thus, finding an hour or two in a busy secondary school to deliver the campaign could be difficult, whilst shorter sessions could potentially be fitted in around other commitments more easily. The second reason was related to the content of the campaign. It was felt that one session would not be enough to provide all the necessary information to achieve all three aims of the campaign. Students with ASC themselves recognise the complexities of understanding ASC, as shown in the following quote from a student at good-practice school two: ‘…no matter how much you know, you don’t really understand it…You need to give the kids an understanding of how hard it is for people with autism…You know, because everyone is in camouflage, and the people with autism are the ones with the red dots on their face and they don’t understand why they’re doing all this stuff.’ (S2, school two).

It was considered likely that peers would need a number of sessions to explore ASC and its impact in order to really gain awareness of, and understand, the condition.

This leads to the third reason underlying the decision, which is that the available research evidence suggests that impacting on the social outcomes of students with ASC through educating peers about the condition may involve more than a one-off session. For example, PMIs, which are one potential way to raise awareness of ASC, may use multiple sessions to deliver training/intervention content (e.g. Kasari et al., 2012). Similarly, a small group approach that was successful in reducing the bullying of a student with ASC comprised 6 training sessions delivered over as many weeks (Etherington 2007). Finally, the REPIM, the theory on which RESII is partly based, suggests that the social-cognition deficits of students with ASC, and their peers lack of awareness of the condition need to be addressed simultaneously if the best social outcomes are to be achieved. As the social-skills group would be running once a week for eight weeks, it was decided that the peer-awareness campaign should run in parallel to this. This approach, of running separate intervention components concurrently, has resulted in positive intervention gains elsewhere (e.g. Laugeson et al., 2009; 2012), including in educational settings (Kasari et al., 2012; Laugeson et al., 2012), and it was hoped that that would be the case for RESII as well.

Summary
Section 3.1.2 has described how the content of the peer-awareness campaign was selected and designed to meet its three aims, which were to increase awareness of ASC,
increase acceptance of difference, and increase knowledge of how best to socially support students with ASC. The content was selected from materials used in the good-practice schools, resources recommended for use in schools, and similar programmes found in the literature. The content was shaped further based on guidelines for producing educational programmes for teaching students about ASC (Campbell, 2006). With the intended implementation context in mind, the campaign was developed to be delivered by the school SENCo; to contain descriptive, explanatory and directive information; to be delivered to the focal-student’s teaching group (or group with whom they spend the most time and/or experience the most social difficulties); to be delivered via PowerPoint and video; and to emphasise the similarities between students with and without ASC, and highlight the positive side of the condition. The campaign was designed to be delivered over eight, 20-minute sessions, and an overview of the session content can be found at appendix 3.4. Once the peer-awareness campaign was designed, the next step was to select the content for the TA training package, and this process is described below in section 3.1.3.

### 3.1.3 TA training package

RESII’s programme theory includes a TA training package as the change strategy for increasing the extent to which TAs act as a facilitator to social interaction. It is proposed that ‘Social relationships are a key aspect of schooling that can be assisted or hindered by the ways in which teacher assistants are deployed.’ (Giangreco & Doyle, 2007, p. 436), and the evidence supporting the inclusion of TAs in RESII’s problem and programme theory certainly indicated that the ways in which TAs support students with ASC can impact negatively on their social outcomes (e.g. Alston & Kilham, 2004; Symes & Humphrey, 2012,). With this in mind, a training package for TAs focusing on strategies to increase the level of social interaction between students with ASC and their peers was developed. This section outlines how the content of the training package was selected, beginning with the findings from the good-practice schools. The three good-practice schools (whose TAs were interviewed and observed in a series of papers examining the use of TAs to support students with ASC (Symes and Humphrey 2011a; 2011b; 2012) did not report delivering any training specifically aimed at increasing the extent to which TAs support the social interactions of students with ASC. It was not clear why they did not do this, since they did offer generic ASC training. The TAs working in these schools had reported in one of the earlier papers (Humphrey & Symes, 86
(2011a) that they did not find this type of training useful for their role and, as a result, the few training materials that were used in the good-practice schools were not considered for use within RESII.

The researcher looked elsewhere for suitable training materials that met both the aims of the training (to increase the extent to which TAs facilitate social interaction) and the need for all RESII content to be suitable for use within mainstream secondary schools. Two studies were identified as being fit for purpose, and these studies had also provided part of the rationale for including TAs in RESII’s programme theory, since they demonstrated that TA training could lead to improved social outcomes for students with ASC. The studies (Causton-Theoharis & Malmgren, 2005; Malmgren, et al., 2005) report on the effectiveness of a structured TA training package to increase the frequency and type of facilitative behaviours (FBs) used by seven TAs supporting seven students, two of whom had ASC. The FBs were simple strategies, such as moving students together to work on a task, that could be implemented as part of the TA’s role within the typical routines of the school day. Both studies reported an increase in the amount of FBs the TAs used following the training, and in the study including the two students with ASC (Causton-Theoharis & Malmgren, 2005), this increase led to a significant increase in social interactions between the supported student with ASC and their peers (see also section 2.2). The training package and its findings described in the two studies clearly resonated with the aims of this third component of RESII, and demonstrate that the training was suitable for use in an educational context. Therefore, the training package described in these papers was selected for use with RESII.

The training package, the content of which is based on a unit from a TA professional development document (Ghere, York-Barr & Sommerness, 2002), comprises four key activities. These are: (1) introducing the TA to the social difficulties experienced by students with ASC, (2) establishing the importance of social interaction, (3) clarifying the TA’s role in facilitating social interaction and, (4) increasing the TA’s knowledge base of strategies for facilitating social interaction. As recommended by the authors of the training package, it was intended that the content would be delivered during one, one-to-one, four-hour training session. The researcher had some reservations as to whether it would be possible to deliver such a lengthy training session, as her personal experience in schools indicated that TAs seldom had free time within the school day,
making it difficult for them to attend the training. However, given the success of the training in the original two studies, which also took place in a school setting, the researcher decided to trial this within the English, secondary school context.

The training package was delivered as described in Causton-Theoharis and Malmgren, (2005) and Malmgren et al., (2005), with some adjustments. Firstly, although the training activities were described in the original papers, the specific content of the activities was not. Thus, the researcher devised their own content based closely on the aims of each of the four activities. Secondly, the activities were complemented by the content of a practitioner paper by the same authors, which more clearly described the recommended FBs, and how they might be implemented in practice (Malgren & Causton-Theoharis, 2005), and a practitioner paper by another author which focused specifically on FBs TAs could use to support the extent to which students with ASC interact with their typical peers (Rossetti & Goessling, 2010). Thirdly, a copy of the latter practitioner paper was given to the TAs at the end of the training session. Finally, the training materials were delivered via PowerPoint (see appendix 3.5) rather than as a manual as described in the original two studies. A list of the recommended FBs can be found at appendix 3.6.

**Summary**

Section 3.1.3 has described the process of developing the content of the TA training package for use within RESII. A pre-existing training package reported in the literature was selected, and it was intended that the content would be delivered as it had been in the original studies, with minor adjustments. The selection of the TA training package concluded the process of developing RESII’s content, which has been described in section 3.1. Alongside the TA training package, RESII includes a social-skills group comprising the Attention Autism programme, and a peer-awareness campaign developed from materials used by, or recommended for, schools; similar programmes reported in the literature; and based on guidelines reported in Campbell (2006).

Selecting and developing the content for RESII formed just one part of the second step of this piece of intervention research, however. Once the content was established, the researcher identified which elements of the intervention were essential, and the accompanying fidelity criteria (Campbell et al., 2000; Fraser & Galinsky, 2010).
3.2 **Identifying essential components and fidelity criteria**

Fraser and Galinsky (2010) recommend that during the second stage of intervention research, the programme developers should ‘specify essential programme elements and fidelity criteria.’ (p.463). They do not, however, provide guidance on how this can be achieved. Fidelity can be defined as ‘the degree to which [a] treatment is delivered as intended’ (Yeaton & Sechrest, 1980, p.160, cited in Domitrovich & Greenberg, 2000). It encompasses how much of a programme was delivered as intended (structural fidelity) and the quality with which it was delivered (process fidelity) (Harn, Parisi & Stoolmiller, 2013; O’Donnell, 2008). It is recommended that for interventions in their early stages, such as RESII, focus should be on structural fidelity, and intervention researchers should identify exactly which components of an intervention should be delivered (the essential programme elements) and the criteria against which successful receipt of the essential programme elements will be judged (the fidelity criteria). It was therefore decided that only the structural fidelity of RESII would be considered during step two and step three of the intervention research process described in this thesis. This section outlines how the essential programme elements and fidelity criteria were identified for RESII, which can be found in table 3.3.

Two elements of structural fidelity widely regarded as crucial in intervention research are **adherence** – the degree to which essential programme elements are delivered as prescribed, and **exposure** – the frequency and duration of exposure to the essential programme elements (Dane & Schneider, 1998; Domitrovich & Greenberg, 2000; Durlak & DuPre, 2008). The essential programme elements for RESII were accordingly categorised as relating to either adherence or exposure. Despite having a framework with which to identify the essential programme components, developing these components was a challenge. Mowbray, Holter, Teague & Bybee (2003) reviewed the intervention literature to identify how decisions regarding developing essential programme elements and fidelity criteria are typically approached in intervention research. They found that even if studies report on fidelity, they seldom disclose how these criteria were developed. In cases where this is described, there were three common ways for doing so. These are (1) drawing on other, similar programmes with proven efficacy, (2) gathering expert opinions or (3) conducting qualitative research, for example to gain the insights of potential intervention users. It was decided that the literature would be consulted in the first instance to identify potential essential
adherence and exposure programme elements and that these would be refined after the first study (reported in chapter four) based on the views of the participants (thus using the first and third of the suggested methods).

With regards to the TA training, this was relatively straightforward since the training followed the process outlined in the two studies on which the training was based (Causton-Theoharis & Malmgren, 2005; Malmgren et al., 2005). Therefore, for adherence criteria, it was decided that the training should be delivered as it had in the original study, namely, involving all relevant TAs, and delivered on a one to one basis.

In one of the original studies (Causton-Theoharis & Trezek, 2005) adherence was assessed as the extent to which all the training activities were completed as planned, so this was also included as adherence criteria for RESII. For exposure, in line with the original study, it was seen as essential that the participants received one, four-hour training session. Selecting the essential components for the other two parts of RESII was more difficult as there were no pre-existing fidelity criteria for either. Although the Attention Autism programme was established well before the development of RESII, its essential components are not explicitly articulated. Furthermore, the peer-awareness campaign was based on a number of sources, only two of which appear in the research literature (Gus, 2000; Etherington, 2007) and neither of these report on fidelity, or identify key components. As a result, other sources were consulted, but these too proved limited. A programme in the literature that is similar to RESII is that reported in Kasari et al. (2012), which included both a social-skills group for students with ASC and a peer intervention for their peers. For fidelity, they simply stated ‘interventionist fidelity to treatment elements…’ (p. 432), but did not specify what those treatment elements were. A similar study by Schmidt and Stichter (2012), however, considered fidelity in more depth. Specifically, they considered whether the structural components had all been delivered, as well as the specific content addressing each component, and this approach was adopted for the social-skills group and peer-awareness campaign for RESII.

The structural components of RESII’s peer-awareness campaign were related to the aims of the campaign, namely raising awareness of the condition, increasing acceptance of difference, and providing peers with knowledge to successfully engage with students with ASC. The content of each session relates to one or more of the structural elements. Therefore, it was regarded as essential that the peers were exposed to all three structural

90
components and accompanying content (adherence) and that they would receive sufficient sessions to gain exposure to all three structural components (exposure). In addition, given that the peer-awareness campaign hoped to lead to a greater quantity and quality of peer interactions, it was considered important that it was delivered to peers with whom the focal student had regular contact. This formed the second adherence criteria. For the Attention Autism programme the structural components relate to the different types of attention that are targeted (shifting attention, joint attention and sustained attention) and the content relates to the specific activities that are conducted to achieve this. Thus, adherence criteria for the attention autism group included whether the three key activities were delivered each session. In addition, the guidelines for group delivery that the researcher developed based on the training she received to deliver the programme were also considered important as they allowed the content to be delivered as intended. Therefore, following the group guidelines was also identified as an important adherence criteria. Including typical peers in the group was one guideline that was particularly emphasised, as this was again important for ensuring greater quantity and quality of social interaction. As with the peer-awareness campaign, the exposure criteria related to how many sessions were received, in order to ensure that participants were exposed to a sufficient number of attention developing activities. The essential programme elements for each component of RESII are presented in table 3.3, with their accompanying fidelity criteria.

One of the central arguments for the importance of studying implementation is that the degree to which a program operates as designed is related to its effectiveness (Domitrovich & Greenberg, 2000). Thus, once the essential programme elements had been identified, the next step was to develop the fidelity criteria to determine the extent to which they were received and/or delivered as intended. In some cases, this was a simple, dichotomous ‘yes or no’ question (such as whether the social-skills group included typical peers), but in other cases it referred to how much/many of the essential programme elements had been received. In these cases, no pre-existing criteria existed to guide the researcher. Reviews of intervention research conducted in schools have shown that whilst relatively few studies look at the impact of implementation on intervention outcomes (Domitrovich & Greenberg, 2000), it is possible to conclude that ‘there is credible and extensive empirical evidence that the level of implementation affects program outcomes’ (Dunlak & DuPre, 2008, p. 334). Interestingly, however, the
same review found that whilst higher fidelity is correlated with better intervention outcomes, the additive impact of fidelity diminishes at around 80% (Durlak & DuPre, 2008). That is, interventions delivered with 100% fidelity may not necessarily result in better outcomes than those reporting 80% fidelity, or less. Furthermore, few studies conducted within school settings achieve levels of fidelity greater than 80% (Durlak & DuPre, 2008), including interventions for use with children and young people with ASC (Reichow & Volkmar, 2010). This suggests that aiming for 100% fidelity is both unnecessary and unrealistic.

There are numerous reasons why total fidelity may not be needed to achieve the best intervention outcomes, or may not be possible within school settings. Firstly, intervention effectiveness has been found to be greater in studies involving interventions with clearly specified essential programme elements, such as RESII, irrespective of the ‘dosage’ delivered (Durlak & DuPre, 2008). Thus, having a clearly defined programme may in itself improve outcomes. Secondly, allowing room for adaptations may increase the chances of the essential components being delivered, and the best outcomes being achieved (Ringwalt et al., 2003; Harn et al., 2013). This is particularly pertinent to interventions designed for use in secondary school settings, which may face unique implementation challenges. These include contextual characteristics such as time constraints, multiple initiatives and the priority or status the intervention is given within the school (Lendrum et al., 2013; Ringwalt et al., 2003), as well as indifference from staff (Berman & McLaughlin, 1976). Whilst RESII was designed with the implementation context in mind to maximise the likelihood of it being adopted as intended, potential barriers to implementation should not be overlooked. It is likely that the best intervention outcomes are most likely to arise from a balance between fidelity to the intervention model and adaptation to the local context (Lendrum & Humphrey, 2012). With the above in mind, a threshold of 80% was selected as the fidelity criteria for determining whether the essential program elements had been received and/or delivered as intended. The fidelity criteria for each of the essential programme elements of RESII are presented in table 3.3.
Table 3.3 Essential programme elements (adherence and exposure) of RESII and accompanying fidelity criteria

<table>
<thead>
<tr>
<th></th>
<th>Adherence</th>
<th>Fidelity criteria</th>
<th>Exposure</th>
<th>Fidelity criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social-skills group (Attention Autism)</td>
<td>Group includes typical peers</td>
<td>Yes/No</td>
<td>Eight, 30 minute sessions</td>
<td>Over 80% of sessions</td>
</tr>
<tr>
<td></td>
<td>Group guidelines adhered to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Core parts of Attention Autism session delivered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer awareness</td>
<td>Delivered to peers with whom focal students spends the majority of their time</td>
<td>Yes/No</td>
<td>Eight, 20 minute sessions of peer-awareness sessions received</td>
<td>Over 80% of sessions</td>
</tr>
<tr>
<td></td>
<td>Session scripts adhered to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TA training</td>
<td>All TAs supporting focal student receive training</td>
<td>Yes/No</td>
<td>One, four hour training session received</td>
<td>Over 80% of the time</td>
</tr>
<tr>
<td></td>
<td>Training delivered one-to-one</td>
<td>Yes/No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All content delivered as intended</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Whilst determining RESII’s essential programme components and fidelity criteria was important at this stage of RESII’s design (Fraser & Galinsky, 2010), an important caveat is needed here. As noted above, intervention research frameworks recommend that new interventions should initially be delivered by the intervention developers to increase the likelihood that they will be implemented with fidelity (Fraser & Galinsky, 2010; Lendrum & Humphrey, 2012). In line with this, in the two studies conducted for this thesis (presented in chapters four and five) RESII was delivered by the author. It is
important to note, however, that using researchers to deliver interventions in schools may potentially present a barrier to implementation. A researcher in a school setting is typically an ‘outsider’, where their research agenda must compete with the multiple demands already placed on schools and school staff and students. For example, a researcher typically will not have the authority to allocate sufficient time or space for the intervention to take place, can not determine what lessons students are withdrawn from, and can not control staffing (Forman, Olin, Eaton Hoagwood, Crowe & Saka. 2009). Thus, although they may be able to control the quality of intervention delivery (process fidelity), they are unlikely to be able to control the adherence to the programme model or the dosage of the intervention received (structural fidelity), which are important aspects of implementation during the initial stages of intervention design (see the start of this section). Thus, it is important to note here, that whilst the essential components and fidelity criteria were identified at this stage of RESII’s development, challenges in relation to the researcher’s role as an outsider in school situations were likely to influence the extent to which they were met in studies one and two. This tension is discussed further in sections 6.2.3 and 6.3.

3.3 Conclusion
This chapter has outlined how the content for RESII was selected, and how the essential program elements and fidelity criteria were identified. Attention Autism was selected as the specific programme for the social-skills group to improve the social skills of students with ASC,. The was intended to be delivered for 30 minutes, once a week, for eight weeks, and include both students with and without ASC. The content of the whole-class peer-awareness campaign was developed to promote increased awareness and understanding of ASC, and to educate peers on how they may better support students with the condition. Relevant materials were selected from those already in use in schools, materials recommended elsewhere, and those used in similar interventions. Similar to the social-skills group, the peer-awareness campaign was designed to be delivered once a week for eight weeks, for 20 minutes. Finally, the TA training was taken from two studies, which had previously used the package with TAs involved in supporting students in mainstream settings, including those with ASC. The training was designed to be offered during a one-off, four hour training session. Once the intervention content had been developed, it was trialed in one school (see chapter four), before being refined further and implemented in a further four schools (see chapter
five). In line with the research questions guiding this thesis, these studies were conducted to establish the appropriateness and feasibility of the intervention content. The second study additionally examined the potential efficacy of RESII for improving the social outcomes of students with ASC. The methodology and findings from the first of the two studies is presented in the following chapter.
Chapter 4

Study one: An initial examination of the feasibility of RESII and the suitability of the selected outcome measures

‘Each pilot study is valuable. It enables the collaborating researchers and practitioners to test assumptions about reliability and appropriateness of the intervention and research methodology that can be useful for other research with similar questions.’ (Comer et al., 2004, p258)

Two studies were conducted during the third, and final, step of the intervention-research framework guiding this thesis (see table 2.1). Comer et al. (2004) identity two distinct phases of the third step of intervention research, the purpose of which are primarily to determine feasibility, along with some early indicators of efficacy. Firstly, the intervention should be trialed on a very small number of participants to assess initial feasibility and receive early feedback on the content of the intervention. This allows any potential issues to be swiftly identified, and amended accordingly. Once this stage has been completed, a second, larger pilot study can be conducted to assess the feasibility and appropriateness of the intervention further. However, it is recommended that at this stage, participants are also randomly assigned to either intervention or control conditions, to also allow initial conclusions about efficacy to be drawn (Campbell et al., 2000; Comer et al., 2004; Fraser & Galinsky, 2010).

In line with these recommendations, the first study conducted as part of this thesis (and forming the basis of this chapter) was trialed on two students with ASC attending one mainstream secondary school, and focused on the feasibility and acceptability of the intervention content and proposed outcome measures. In this way, it primarily addressed the first research question explored in this thesis (i.e. is RESII appropriate for use within mainstream secondary schools, and can it feasibly be implemented in such settings?). The second study (see chapter five) involved eight students drawn from four schools, randomly assigned to treatment or control conditions. The focus of the second study was on both the feasibility and potential efficacy of RESII. In this way, it additionally addressed the second research question guiding this thesis (i.e. does RESII have a positive impact on the social inclusion of students with ASC?)
This chapter presents the methodology (section 4.1) and findings (section 4.2) of the first study. As described above, and in line with recommendations for intervention research (Campbell et al., 2000; Fraser & Galinsky, 2010; Kasari & Smith, 2013; Torgerson & Torgerson, 2013) the aims of study one were to examine (1) the feasibility of conducting RESII in a mainstream secondary school and (2) the appropriateness of the measures selected for capturing the targeted outcomes. Whilst establishing efficacy was not an aim of this study, results indicating the impact of RESII are presented in section 4.2 where appropriate, to further illustrate RESII’s feasibility or appropriateness, or to highlight potential strengths or limitations of RESII. Improvements made to RESII and the selected outcome measures as a result of study one can be found at appendix 4.17 and 4.18, respectively.

4.1 Methodology

4.1.1 Epistemological approach

Every piece of research requires an epistemological foundation for its inquiry: a paradigm or worldview must underlie it (Creswell & Plano Clark, 2007). The epistemological approach adopted in this study was a pragmatic one. Pragmatism lies somewhere between positivist approaches, which are concerned with objective, quantitative research methods and theory testing, and constructionist approaches, which are concerned with subjective, qualitative research methods and theory building (Creswell & Plano Clark, 2007). Positivists argue that social phenomena can be researched in the same way as physical phenomena, and that the observer is separate from the object that is being observed (Cohen, Manion, Morrison, 2007). It states that research and its findings should be time and context free (the same results would be found in another time and place) and objective (Burke Johnson & Onwuegbuzie, 2004). At the other end of the epistemological spectrum lies constructivism. Contrary to positivism, it argues that there is no objective reality, but instead multiple realities exist, which are constructed by individuals, communities and societies (Burke Johnson & Onwuegbuzie, 2004). Therefore, research findings are never time or context free, as they are a product of the time and place in which they occur. Furthermore, the observer can never be separated from what is observed (Burke Johnson & Onwuegbuzie, 2004). What this means is that, for positivists, the main concern is determining the extent to which study findings match a supposed, objective ‘reality’, whilst for constructivists it is determining the extent to which data reflects the experiences of participants.
Pragmatists, however, argue that the two are not mutually exclusive: it is possible that findings reflect both realities. Furthermore, it is not necessary for research findings to match either reality for them to be considered ‘true’. Instead, any theory can be accepted as fact, irrespective of its relationship with either reality, if it provides the most convincing explanation for the phenomena under study (Rorty, Putnam, Conant & Helfrich, 2004).

Both positivist and constructionist stances have been criticised for being too ‘purist’. Positivism, for example, overlooks the fact that research is carried out by subjective humans, and there are a number of places in the research process in which their values may have impact (Burke Johnson & Onwuegbuzie, 2004). On the contrary, constructionism is criticised for being too subjective, limiting the usefulness of findings beyond the context in which they were found (Burke Johnson & Onwuegbuzie, 2004). Pragmatism represents a move away from this purist stance to a pluralist position. It maintains that knowledge is neither purely objective nor subjective; rather it is the result of the interaction between the objective reality and the subjective interpretation of it (Biesta & Burbules, 2003). This is of particular relevance to this study, where the reality being observed is being observed by the researcher who in part constructed that reality. It is inevitable that some interaction will occur, given the researcher’s subjective stake in the object under study. Pragmatism allows this tension to be acknowledged, whilst still allowing conclusions about RESII’s effectiveness to be drawn beyond the specific research context.

It is perhaps as a result of this that pragmatism is regarded as a philosophical approach concerned with ‘what works’ (Creswell & Plano Clark, 2007). This emphasis on the practical (Rorty, 1980) means that researchers working in applied settings, such as education, whose ‘main concern is to get on with the job, i.e. to come up with answers to the problems they are trying to address’ (Robson, 2011, p.27) are likely to favour the pragmatic approach. Given the congruence with the purposes of the first study, a pragmatic approach was therefore adopted. Indeed, the development of RESII was itself a pragmatic process, with decisions being made based on what could practically be used within a mainstream school setting, as opposed to being based purely on empirical findings. Furthermore, the intervention-research framework guiding this thesis emphasises the importance of selecting the research approach most appropriate to each
stage of the research (Fraser & Galinsky, 2010; Gilgun & Sands, 2012). Since the early stages of intervention are very much focused on the practical i.e. establishing if the intervention can be implemented, a pragmatic approach seems appropriate. However, at later stages, where determining effectiveness is key, more objective, positivist approaches may be more suitable. The adoption of a pragmatic position not only influences how data may be interpreted, but also has implications for which type of data should be collected. A mixed methods paradigm fits well within the pragmatic epistemological approach, since it too acknowledges the benefits of combining both quantitative and qualitative approaches (Feilzer, 2010), and of selecting the method which is most appropriate to the question being answered, rather than to the particular type of ‘truth’ being measured (Gorard & Taylor, 2004).

4.1.2 Design

A one-group, pretest-posttest design was used (Field & Hole, 2003), with data collected from participants before and after the intervention was delivered. Collecting data at two time-points provided multiple opportunities to trial the selected outcome measures, whilst the posttest data allowed some initial conclusions about the feasibility and appropriateness of RESII to be drawn. Although the absence of a control group limited the extent to which conclusions about efficacy could be drawn (e.g. observed changes could be the result of other factors, such as maturation effects) (Mertens, 2009), this was not a concern at such an early stage of the intervention research, where the primary aim of the study was establishing the feasibility and appropriateness of the intervention and outcome measures, rather than proving its effectiveness (Fraser & Galinsky, 2010).

In line with the above, and the epistemological stance of the study, a mixed methods design (Creswell & Plano Clark, 2007) was also adopted. Mixed methods designs are advocated for use in studies evaluating complex interventions, such as RESII (Campbell et al., 2000; Chen, 2006), primarily because qualitative data can complement quantitative data by providing further insight into the experiences and outcomes of study participants. This is especially relevant during the early stages of intervention research, where participant views regarding the appropriateness of an intervention are a key concern (Fraser & Galinsky, 2010). In terms of the epistemological approach, pragmatism provides a highly compatible theoretical underpinning to mixing the two method types in the same research project (Burke Johnson & Onwuegbuzie, 2004;
Robson, 2011), and as such is regarded as the ‘best’ paradigm in which to fit mixed methods research (Creswell & Plano Clark, 2007). This is likely because pragmatists consider the research question to be more important than either the method used or the worldview that is supposed to underlie the method (Mertens, 2009): the choice of methods is determined by the needs of the investigation (Gorard & Taylor, 2004). This study adopted a pragmatic parallel mixed methods design whereby quantitative and qualitative data were collected simultaneously to answer the same research question (Burke Johnson & Onwuegbuzie, 2004; Mertens, 2009).

4.1.3 Participants
The school that participated in study one was self-selecting. The researcher met the school SENCo at a training day focusing on the inclusion of students with ASC in mainstream secondary schools. The SENCo was attending the training because her school had been selected to open a resourced provision (RP) for students with ASC. The school currently only had four students with ASC on roll, but this number was set to increase significantly once the RP opened. The school were therefore looking to build their capacity to support students with ASC, and when the researcher described the intervention and study to them, they were keen to participate. Furthermore, another teacher in the school, Abigail¹, was hoping to lead the RP and was studying for a Master’s degree in Inclusive Education, with a particular focus on ASC. This teacher was also keen to participate in study one as she felt this would be beneficial for her Master’s course and professional development. Before continuing with the study, the school was asked to provide institutional consent to take part from the headteacher. No further schools were considered for study one. Table 4.1 provides information on the number of students on roll at the school, the percentage of students with SEN, the level of attendance and the level of academic achievement, compared with the national average. Although the school was smaller than average, it had a higher than average number of students with SEN. This, however, did not seem to impact on the overall attendance or expected academic achievement, which were both at, or close to, the national average. Please note, exact figures have not been used to prevent the school from being identified.

¹ All names are pseudonyms
Table 4.1 Characteristics of the participating school

<table>
<thead>
<tr>
<th></th>
<th>Number of students</th>
<th>Percentage of students on school action plus or a statement of SEN</th>
<th>Percentage overall attendance</th>
<th>Percentage achieving expected academic achievement*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participating school</td>
<td>below average</td>
<td>above average</td>
<td>average</td>
<td>below average</td>
</tr>
<tr>
<td>National average</td>
<td>978</td>
<td>7.7</td>
<td>94</td>
<td>58</td>
</tr>
</tbody>
</table>

* percentage of all students achieving five GCSEs grade A*-C including English and mathematics.

Students with ASC

Once institutional consent had been received, the school was asked to select two students from years seven to nine with ASC who they felt would benefit most from taking part in the intervention. A student could be included in the study if they (a) had a statement of special educational needs, with a primary need of ASC and (b) had one or more TAs supporting them at school. The chosen students were two, year seven boys, of White British heritage. One student, Michael, should have been in year eight, but he had been put back a year after transferring to the school at the end of year seven. This decision had been made as Michael had experienced significant bullying at his previous school, and it was felt he would be too vulnerable within the year eight cohort. The second student, Logan, was in the same form group as Michael, and they were in the same class for the majority of their lessons, which they took with their mainstream peers. Neither student was currently receiving any direct social-skills support at the time of the study, but they were part of a lunch club organised by Abigail as part of her Master’s dissertation. The lunch club involved the students participating in a variety of activities, such as board games and puzzles, all selected to encourage social interaction. The school SENCo contacted the parents of the selected students via telephone to discuss their participation in the intervention, and an information sheet from the researcher was also sent home (see Appendix 4.1). Parents had up to three weeks to decide whether or not they would like their child to take part, and to direct any questions they may have to either the SENCo or the researcher. The approached parents gave consent within the three-week time period (a copy of the consent form can be
found at Appendix 4.2). Once parental consent was received, the students were told about the study and asked if they would like to participate. Both students verbally assented to taking part.

Peers
Once parental consent/student assent had been received for the students with ASC, the SENCo was asked to select up to five peers per focal student to take part in the social-skills group. However, it was decided by the school that Michael and Logan would attend the same social-skills group, and three other year seven peers were selected to join them: Paul, Connor and Ahmed. Two of the selected peers (Connor and Ahmed) had been identified by the school as having social difficulties, although neither of them had a diagnosis of ASC. The remaining student, Paul, was Michael’s brother, and he was included as it was acknowledged that Michael was less anxious when around him, and also because he could act as a ‘model’ of typical social behaviour. Michael and Logan had the majority of their lessons with the chosen peers, and Connor and Paul were both also part of the lunch club, described in the paragraph above. The SENCo contacted the peers’ parents via telephone to gain consent for their child to take part in the group. They were also given an information sheet from the researcher, which outlined what taking part in the study would involve (see Appendix 4.3). It was made clear to parents that whilst no data would be collected directly from their children, detailed fieldnotes about each Attention Autism session would be kept by the researcher, which might include information about the behaviour of the peers. Parents had three weeks in which to decide if they were happy for their child to participate, and all of the parents gave consent within this time period (see Appendix 4.4 for a copy of the consent form). Once parental consent was received, the peers were told about the study and asked if they would like to participate. All three students verbally assented to taking part.

Once the Attention Autism group was confirmed, the SENCo was then asked to select the peer groups to receive the peer-awareness campaign. It was decided by the school that the peer-awareness campaign would be delivered to the focal-students’ form group. In England, each student is assigned to a form group when entering secondary school. Form groups typically comprise between 20 and 30 students from the same year group. The form group has a form tutor, who carries out administrative and pastoral duties.
Students typically spend around 20 minutes a day with their form group, before they separate off into classes with their teaching groups. Thus, although the student with ASC will have contact with this group of peers on a daily basis, they will not necessarily spend their lesson time with them. Parents of the peers received a letter from the school outlining the campaign and the data that would be collected from their children (see Appendix 4.5). They were asked to contact the school within three weeks of receiving the letter if they did not want their child to take part in the study. No parents got in touch with the school for further information or to withhold consent (see Appendix 4.6. for a copy of the consent form). In total, 21 peers received the peer-awareness campaign. Peers did not assent to taking part in the peer-awareness campaign, but they were verbally reminded at both data collection time points that participation was voluntary.

**Teaching Assistants (TAs)**

Finally, the SENCo was asked to identify any TAs supporting the focal students with ASC on a regular basis to take part in the study. Selected TAs would receive the TA training on how to facilitate social interactions between students with ASC and their peers. Once identified, the researcher gave the TAs an information sheet and consent form (found at Appendix 4.7 and 4.8, respectively) and they were given three weeks to agree to participate in the study. It was made clear to them by both the researcher and the SENCo that they were not obliged to take part, and that not doing so would not impact on their position within the school. Both of the TAs consented within the three weeks. Two TAs took part in study one, one per focal student. Michael’s TA was called Lucy, and she had started working at the school just before the intervention began. Logan’s TA was called Caroline, and she had previously supported another student with ASC at the school.

### 4.1.4 Methods

As stated in the design section, a mixed methods approach was adopted in study one. Materials generating quantitative and qualitative data were selected to assess the feasibility of implementing RESII’s essential programme elements with fidelity, as well as to capture the proximal and distal outcomes of RESII. A range of methods and measures were chosen for two reasons. Firstly, each outcome (including fidelity) is measured or assessed twice, either from two different perspectives (e.g. student and TA)
or sources (e.g. interview and observation). This triangulation strengthens conclusions
that can be drawn from the data because it provides more information than one method
alone (Mertens, 2009). Indeed, Fraser (2004) argues that multiple data collection
methods are necessary as it is unlikely that the impact of an intervention can be captured
with one measure. Secondly, and relatedly, a key aim of study one was to trial potential
outcome measures. Including a range of measures increased the likelihood of the most
suitable instrument(s) to capture feasibility and outcome data being found.

Whilst using measures that have established validity, reliability and generalisability is
crucial if changes in targeted outcomes are to be accurately identified over time and in
different settings (Field & Hole, 2003), additional considerations must be taken into
account when selecting measures used to assess intervention effects. Measures in these
types of studies should, for example, be sufficiently responsive to change (McCartney,
Boyle & Ellis, 2015), be acceptable to participants, such as not taking too long to
complete (McCartney et al., 2015; Tickle-Degnen, 2013), and should result in data of
sufficient quantity and/or quality to draw conclusions (Tickle-Degnen, 2013). However,
although trialling of outcome measures is emphasised in a number of intervention-
research frameworks (e.g. Campbell et al., 2007; Fraser & Galinsky, 2010), and in
feasibility studies more generally (e.g. McCartney et al., 2015; Tickle-Degnen, 2013),
definitions of, or criteria for ‘suitable’ measures are scarce. In this study, a measure was
regarded as suitable if it was understandable to participants (e.g. could be completed
without the need for detailed instructions) and did not result in large amounts of missing
or unusable data (e.g. data irrelevant to the issue under study).

Triangulation and the use of suitable measures are not only important in intervention
research, but are especially important in studies such as this one, where the intervention
is both delivered and evaluated by the same person. This can leave the study findings
vulnerable to experimenter bias, whereby the researcher may unconsciously influence
the results they obtain through the ways in which they interact with their participants
(Field & Hole, 2003). For more on the limitations of the dual-role approach, see chapter
five. Table 4.2. shows each of the selected measures and the outcomes they are intended
to capture.
Table 4.2 The selected measures for feasibility, proximal outcomes and distal outcomes, and the research questions they address

<table>
<thead>
<tr>
<th>Type of data</th>
<th>Measure</th>
<th>Feasibility</th>
<th>Proximal outcomes</th>
<th>Distal outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Social-skills group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peer awareness campaign</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TA training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantitative</td>
<td>Peer questionnaire (SIS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peer questionnaire (CATCH)</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TA and student observations</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Session checklists</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Qualitative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fieldnotes</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peer posters</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Student interviews</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>TA interviews</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

The measures are described in more detail, below, including the rationale for their selection. It is important to note at this point that, in line with the decision making process for the content of RESII, appropriateness of use within an education setting was the most important selection criteria. Whilst the psychometric properties of a measure are undoubtedly important for establishing the validity and reliability of the data collected (Field & Hole, 2003), a more important consideration for this study was whether or not the measures were fit for purpose. Decisions to select specific instruments were therefore based firstly on the evidence that they could be used within school settings and secondly that they had been successfully used in studies with aims similar to those of this thesis. It was only once these criteria had been achieved that the psychometric properties of the measures were considered. These are reported where available.
Quantitative instruments

Peer questionnaires

The peers receiving the peer-awareness campaign completed two questionnaires: An adapted version of the Chedoke-McMaster Attitudes Towards Children with Handicaps Scale (CATCH, Rosenbaum, Armstrong & King, 1986a, see appendix 4.9) to measure their attitudes towards young people with ASC (proximal outcome), and the Social Inclusion Survey (SIS, Frederickson & Furnham, 1998, see appendix 4.10) to measure the social acceptance of the focal students with ASC (distal outcome).

The CATCH is a 36-item questionnaire that captures the affective, behavioural and cognitive attitudes of peers towards students with disabilities, with 12 items per component. Participants respond to each item on a 5-point Likert Scale from 0 (strongly disagree) to 4 (strongly agree). Items are both positively and negatively worded. The CATCH was selected for use in study one primarily because it has been previously used with success to measure attitudes towards students with ASC in school settings (Dowjotas, 2009), as well as in studies evaluating the effectiveness of a school-based intervention to improve attitudes towards students with disabilities generally, as well as specific disabilities such as Tourette syndrome (Godeau et al., 2010; Holtz & Tessman, 2007). Furthermore, a review of 19 instruments measuring student attitudes towards peers with disabilities recommended just two scales for use, the CATCH and the Acceptance Scale (AS, Voeltz, 1980) (Vignes, Coley, Grandjean, Godeau & Arnaud, 2008). The particular strengths of the two instruments were cited to be their measurement of the three components of attitudes, and their strong psychometric properties. The AS was not selected for use within this study as, compared to the CATCH, the reviewers found fewer studies in which it had been used, only two studies had included participants in the same age range as those in the current study (Voeltz, 1980; Voeltz 1982), and it was only used in one intervention study. Conversely, the reviewers found six studies using the CATCH with students aged 11-14 years and at least two of these have been intervention studies (Armstrong et al., 1987; Rosenbaum, Armstrong & King, 1986b). The validity and reliability of the measure is good, with coefficients of .90 for internal consistency and .70 for test-retest reliability (Rosenbaum et al., 1986a).
The CATCH was adapted slightly for use in study one. The original items, which refer to ‘handicapped’ children, were changed to make them ASC and age appropriate. Item 23, for example, was changed from: ‘I would feel good doing a school project with a handicapped child’ to ‘I would feel good doing a school project with a classmate with autism’. The term ‘autism’ was selected due to the researcher’s previous experiences in schools (e.g. Humphrey & Symes, 2011, Symes & Humphrey, 2012), which indicated that students would be more familiar with the term autism than another term, such as ASC or Asperger’s. In the event that the peers did not know what autism was, especially prior to the intervention beginning, two additional questions were added to the questionnaire. These were: ‘Have you heard of autism before?’ and ‘Do you know what autism is?’ If the students answered ‘no’ to either of these questions they did not need to complete the rest of the questionnaire. Other studies have similarly altered the wording to more closely match the aims of the study (Holtz & Tessman, 2007; Dowjotas, 2009). A measure of peer attitudes towards ASC was selected over a measure of peer awareness of ASC (such as the Knowledge of Autism Scale, Campbell & Barger, 2011). This was because whilst the campaign was designed to raise awareness, previous research has suggested that increased awareness would lead to more positive attitudes towards ASC and, importantly, more positive behavioural intentions towards those with the condition (Mavropoulou & Sideridis, 2014). Therefore, assessing peer attitudes rather than peer awareness made it possible to assess not only if awareness had been raised, but also the extent to which the campaign had been successful at changing attitudes towards ASC. It was anticipated that such changes would hopefully, in turn, lead to improved distal outcomes such as greater social acceptance. In addition, the posters created by the peers in the final week of the peer-awareness campaign were used as a measure of peer awareness of ASC (see qualitative instruments, below).

The SIS is a sociometric measure of a student’s popularity within a class, comprising two questionnaires: Like to Work (LITOW) and Like to Play (LITOP). Each questionnaire lists all of the students in the participant’s class. Participants are required to indicate whether they like to work or play with each student, by selecting one of the following options: ‘Yes’, ‘Sometimes’, ‘No’ or ‘?’. The ‘?’ option is there if a participant does not feel they know a particular student well enough to make a decision. Once all the questionnaires are completed, an index of social acceptance or rejection can be calculated for each student. The SIS was initially selected as it has been used
elsewhere to examine the social acceptance of students with a range of special needs (e.g. Frederickson & Furnham, 1998), including those with ASC in mainstream secondary school settings (Symes & Humphrey, 2010). In addition, it has been used in studies evaluating the success of social-skills interventions (Frederickson & Turner, 2003), including with students with ASC (Frederickson, Simmonds, Evans & Soulsby, 2007). Furthermore, it has was identified as one of the best measures of sociometric status (Frederickson & Furnham, 1998) and has good test–retest reliability (for younger students at least), with coefficients of 0.70 for acceptance and 0.78 for rejection (Frederickson & Furnham, 1998).

**TA and student observations**

A quantitative observation schedule was developed to capture the type and frequency of FBs used by the TAs during lessons (proximal outcome), and the level of social interaction between the students with ASC and their typical peers (distal outcome). The schedule was adapted from the one used in Malmgrem et al., (2005) and Causton-Haris & Malmgrem (2005), the two studies on which the TA training was primarily based. The schedule is used to record proximity data (how close the TA is to the focal student), the type and quantity of FBs used, and the quantity of social interactions that arise. The proximity data is collected every five seconds for 90 seconds. Following that, the FBs and resultant social interaction are recorded every minute for five minutes, before the proximity data is collected again. As there was only one observer present, reliability was maintained by carrying out each observation using the same procedures (Harris, 2011). A copy of the observation schedule can be found at Appendix 4.11.

**Session checklists**

Session checklists were developed in order to measure adherence and exposure to the essential programme elements, and the extent to which fidelity had been achieved (feasibility). The checklists were therefore a key way of determining the feasibility of conducting RESII in a mainstream education setting. The checklists took the form of a ‘lesson plan’, whereby a plan was made for each session which outlined the content to be delivered and how it should be delivered. For the social-skills group a plan was made for each session, which included each of the five parts, and detailed the three key attention-building activities. It also listed the guidelines for conducting the group. An example of a session checklist for the social-skills group can be found at Appendix 108.
For the peer-awareness session, a script was written for each session that outlined precisely which content would be covered, and how it would be delivered. A sample script can be found at Appendix 4.13. For the TA training a printout of the training PowerPoint was used as a checklist (see appendix 3.5). At the end of each session, the researcher completed the relevant checklist to indicate which content had been delivered as intended. Any content that had not been delivered was recorded in the researcher’s fieldnotes.

Qualitative instruments

Fieldnotes
Qualitative fieldnotes were written at the end of each session to provide a more detailed account of the participants’ adherence and exposure to the essential programme elements (feasibility). The researcher was careful to document any information relevant to adherence or exposure to the essential programme elements. For example, fieldnotes were kept to document why a particular piece of content had not been delivered as intended, or why particular guidelines had not been adhered to. Fieldnotes were also made to record the participants’ exposure to the intervention, and, in cases where sessions were missed, to record why. In this way, the fieldnotes were observational records (Cohen et al., 2007) of the sessions and, as such, included descriptions of events that occurred throughout the sessions, participant behaviour (or the behaviour of others linked to the intervention in some way), and the activities conducted in each session. Furthermore, where appropriate, they included transcriptions of conversations that were useful for understanding why a particular activity or piece of content had not been adhered to, or why the participants had not been exposed to it (Cohen et al., 2007).

Peer posters
In session eight of the peer-awareness campaign, the participants were asked to create a poster or leaflet that could be used to educate others in their school about ASC. The students were asked to provide information about what ASC is, how it may impact on individuals with the condition in a school setting, and ways in which such individuals can be supported by their peers to minimise this impact. The peers were given minimal guidance from the researcher regarding the specific content that should be included, and, as a result, the posters can be seen as a measure of peer knowledge (and therefore, awareness) of ASC. An example of a peer poster can be found at Appendix 4.14. The
posters were collected by the researcher at the end of the eighth session and analysed to see which session content they had recalled. This was a post intervention measure only. No pre intervention measure of awareness (beyond the CATCH) was used.

**Student interviews**

Semi-structured interviews were conducted with the students with ASC to generate data about their social skills (proximal outcome) and their social support, social acceptance and social interaction (distal outcomes). This method was chosen due to the researcher’s prior successful experience of using this approach to access the perceptions of included students with ASC (Humphrey & Symes, 2010b), and its use in a number of other studies looking at the experiences students with ASC (Carrington & Graham, 2001; Connor, 2000; Humphrey & Lewis, 2008). In addition, semi-structured interviews are a useful method of data collection since they can ensure that certain topics are covered, but are sufficiently flexible to allow new insights to be gained that the researcher had not previously considered (Flick, 2014). This is especially important when exploring the educational experiences of students with ASC from their own perspective, as their views are typically overlooked in the extant literature (Humphrey & Parkinson, 2006). The use of semi-structured interviews therefore provides the opportunity for participants with the condition to express that which is important to them.

The interviews were conducted face-to-face, and were guided by an interview schedule adapted from Humphrey & Symes (2010b). The schedule was adapted to focus specifically on the social lives of students with ASC, rather than their educational experiences more generally, as they had been in the original study. However, the researcher acknowledged that the social impairments characteristic of ASC may make it more difficult for students with the condition to discuss and reflect on their social experiences. To account for this, the interview started with a few questions about their time at school, such as which subjects they enjoyed or did not enjoy. These questions were designed to relax the students, and get them thinking about their time at school. Once these questions had been asked, the questions moved on to asking about their friendships at schools and their perceived social strengths and weaknesses. The final questions were related to how their peers behaved towards them, such as if they felt they were friendly, or if they had ever experienced bullying. A copy of the interview
schedule can be found at Appendix 4.15. All interviews were audio-recorded and transcribed verbatim.

**TA interviews**

Semi-structured interviews were conducted with the TAs to generate data about the social skills of the focal students with ASC and their perceived use of FBs (proximal outcomes). The interviews were also used to generate data about the social support the focal students with ASC received from their peers (distal outcomes). As with the student interviews, this method was selected due to the researcher’s prior successful experience of using this approach to access the perceptions of TAs supporting students with ASC (Symes & Humphrey, 2011a; 2011b), and for the methodological advantages discussed above.

The interviews were conducted face-to-face and guided by an interview schedule developed for the purposes of the study, which focused on the social lives of students with ASC, and the TAs’ role within them. As with the student interviews, however, the interviews began with some ‘warm-up’ questions relating to their experience of working with students with ASC, which had also been used for that purpose in the Symes and Humphrey papers. The interview questions then focused on the challenges they encounter when supporting students with ASC, the perceived impact on ASC on the focal students, and any social problems experienced as a result. Finally, the questions focused on the extent to which they considered the social lives of students with ASC in their practice, and any strategies they used to facilitate social interaction between the focal students and their peers. A copy of the interview schedule can be found at Appendix 4.16. All interviews were audio-recorded and transcribed verbatim.

### 4.1.5 Procedure

Study one took place over ten weeks. Time one (T1) data collection was carried out at the school in week one. This included the students with ASC being interviewed by the researcher. The students were introduced to the researcher by Abigail, and were offered the choice of having their TA present in the interview if they felt more comfortable. Michael requested that his TA stay with him. The interviews, which were conducted in an unoccupied classroom, ranged from approximately 10 to 30 minutes in length. The researcher administered the CATCH and SIS to Michael and Logan’s form group. The
researcher read out each question aloud, and waited until all students had completed a question before moving on to the next one. Some students required support completing the questionnaires, and this was provided by the researcher, class teacher or TA (Caroline). The questionnaires took approximately 20 minutes to complete in total. The TAs were then interviewed by the researcher. Due to arrangements made by the school, the interview was conducted in an unoccupied classroom, with both TAs at the same time. The interview lasted approximately 30 minutes and was followed by five, 30-minute observations per TA/student dyad. The same data was collected from all participants at time two (T2), at the end of the intervention, excluding the observations (see the analytical strategy section, below).

In the second week of study one, the intervention began. The TAs were trained before the first Attention Autism and peer-awareness sessions began. The TA training was delivered to five TAs (including Lucy and Caroline) in a group, due to the preference of the school. There was no projector in the training room, so the training slides were read from the training hand out, with each TA having their own copy. At the end of the session, each TA received a copy of the article from which the majority of the FBs had been drawn (Rossetti, & Goessling, 2010). For further information on the content of the TA training, see section 3.1.3 and Appendices 3.5 and 3.6. Following the TA training, the researcher delivered the first Attention Autism session. This, and the following sessions, were conducted in Abigail’s classroom during a lesson where she did not teach. The five students were withdrawn from their lessons to attend the group. Each session started with ‘the box’, followed by ‘getting into the zone’ and finally ‘attention builder’. In ‘the box’ the researcher would place a tool box on the table, and take something out of it that was intended to gain the attention of the students, such as a flashing ball or a bubble machine. This activity lasted for approximately five minutes. In ‘getting into the zone’ the students would take part in a sensory activity such as eating sour sweets or popping bubble wrap. These activities typically lasted for five minutes. The remainder of the session was devoted to the ‘attention builder’ activity, which included tasks such as making a lava lamp or flour painting. The researcher would firstly demonstrate the activity, then select a peer to demonstrate it, before allowing the rest of the students to participate. Each session would end with the researcher reviewing what had been done in the session, and getting informal student feedback on the activities. These sessions lasted for approximately 30 minutes,
excluding setting up and tidying away afterwards, and ran for eight weeks. For further information on the content of the social-skills group, see section 3.1.1 and Appendices 3.1, 3.2 and 4.12.

The peer-awareness sessions were delivered at the same time each week during the peers’ form time. The researcher would start each session by recapping what had been covered in the previous session, and then introduce the new material. The researcher followed a pre-written script for each session. A box marked ‘questions’ was placed in the form room. At the end of each session, the researcher would remind the peers to place any questions they might have in the box, to be answered at the start of the following session. The peer-awareness sessions lasted around 20 minutes each, which was also the duration of the form time. The intervention ran for eight weeks. For further information on the content of the peer-awareness campaign, see section 3.1.2 and Appendices 3.3, 3.4 and 4.13.

4.1.6 Analytical strategy

Quantitative data

The CATCH questionnaire was scored using the procedure recommended by the questionnaire developers (Rosenbaum et al, 1986a). Participants’ responses for each item were scored from 0 (strongly disagree) to 4 (strongly agree). Negatively worded items were inversely scored. The item scores were added together, divided by 36 (the number of items) and then multiplied by 10 to give a total score of attitudes towards ASC. A higher score represented a more positive attitude towards ASC. The class mean total score was then calculated for both data collection points, and compared.

The peer responses on the SIS were used to generate an index of social acceptance and rejection for both students with ASC. A student’s level of social acceptance and rejection is expressed as a proportion ranging from 0 to 1. Social acceptance is calculated by dividing the number of ‘yes’ responses by all other responses, (excluding any ‘?’). Social rejection is calculated, by dividing the number of ‘no’ responses by all other responses (excluding any ‘?’). The indices of acceptance and rejection were calculated at both data collection points, and compared.
It was intended that the TA and student observation data would be scored and analysed in accordance with the studies from which they were drawn (Causton-Haris & Malmgrem, 2005; Malmgrem et al., 2005). This involved calculating the rates of student interaction, and the frequency and type of facilitative behaviours used for each observational period, and linking this with the proximity data. Unfortunately, despite being chosen for its apparent success in similar studies, the observation schedule did not seem to intuitively capture what was happening in the classroom, and, as a result, observational data was only collected at T1, and not at T2. Due to the limited data generated, the observational data is excluded from section 4.2. However, the limitations of this measure, and the implications of them for the research measures used in the second study are discussed in more detail in appendix 4.18. A possible reason for the lack of success of the observation schedule is that the researcher developed it based only on the descriptions of it in the papers from which it came. It is possible that the structure and process of conducting the observations were not sufficiently described, making replication difficult.

The data from the session checklists was analysed by calculating the percentage of adherence or exposure to the essential programme elements, and comparing this with the respective fidelity criteria.

**Qualitative data**

Reasons for not adhering to, or not being exposed to, the essential programme elements were identified from the fieldnotes. These reasons were categorised and incidents of each category were counted to produce quantitative data. Qualitative examples of each category were used in conjunction with this data, and the checklist data (see above) to provide a more detailed understanding of the overall feasibility of delivering the essential programme components within a mainstream school setting.

The content of the peer posters were analysed to determine if they served as a useful method for measuring awareness of ASC. The information in the peer posters was analysed using a content analysis framework. This method of ‘summarizing and reporting written data’ (Cohen et al., 2007, p.475) was selected because it is a well-established method of deriving information from qualitative, written documents, such as the posters. Following guidance from Bryman, (2004), every sentence from each poster
was categorised as belonging to a particular, pre-established theme (with each sentence being coded as belonging to as many themes as applicable). These themes related to the information that the peers were expected to include in their posters, namely what ASC is, how it impacts on individuals with the condition in a school setting and the ways in which such individuals can be supported by their peers to minimise this impact. Once completed, the total score for each theme was calculated, with each theme being equally weighted. Extracts from the posters were used to provide examples of particular themes or to highlight any pertinent findings emerging from the posters.

4.1.7 Ethical considerations

This section outlines the ethical considerations of both studies conducted in this thesis. Using the University’s criteria, both studies were rated as ‘medium risk’, meaning that established procedures and methodologies were used in the research, and that the research was not considered contentious. Both studies obtained appropriate ethical clearance from the School of Education’s ‘School Ethics Advisory Committee’. All research using human participants is subject to ethical considerations. These guidelines (British Educational Research Association, 2004; British Psychological Society, 2004) were considered prior to, and during, both studies. The primary ethical considerations included informed consent, right to withdraw and confidentiality.

With regards to informed consent, participants were made aware of the aims and nature of the research before taking part. This was achieved through a conversation with the school SENCo in the first instance. TAs provided consent directly, whilst consent for the focal students with ASC and their peers was sought from their parents. If the participants and/or parents were interested in participating they were then given an information sheet to read. They then had up to three weeks to decide if they wanted to take part in the study (or wanted their children to take part). If they did not respond within this time it was assumed that they did not wish to take part, and they were not contacted again. If they did decide to take part, all participants were asked to sign a consent form before either study could begin. All information sheets and consent forms can be found from Appendix 4.1 to Appendix 4.8)

Although consent was not taken directly from the focal students with ASC or their peers, it was made explicitly clear to them, and their TAs, that they had the right to
withdraw from the study at any time, without giving a reason, and that they did not have to take part if they did not wish to. No participant chose to withdraw either during either study.

All information gathered throughout the study was kept securely in a locked filing cabinet. Interview audio recordings were stored on a password-protected laptop used only by the researcher. Both the filing cabinet and the laptop were kept in a locked office at the University of Manchester that only the researcher had access to. Pseudonyms were assigned to each participant for the purposes of reporting the findings, and any potentially identifying data was changed or excluded from the results if this was not possible. Finally, the data obtained was only used in the ways detailed in the participant information sheet.

4.2 Findings
Section 4.1 described the methodology for study one. This section presents the results of study one, structured around the studies two primary aims, namely establishing the feasibility of RESII, and the suitability of the selected outcome measures for generating the required data. With regards to the latter, the analysis is structured around the proximal and distal outcomes, with a focus on the quantity and quality of data generated for each outcome by the respective research measures. Although establishing the efficacy of RESII was not an aim of this study, findings relating to the intervention’s impact are presented in so far as they say something about the intervention’s feasibility or appropriateness, or provide contextual details. This section begins with the findings relating to the feasibility of implementing the essential programme elements of RESII, including achieved fidelity, before examining the suitability of the selected research measures.

4.2.1 Feasibility
A key aim of study one was to assess the feasibility of implementing RESII within a mainstream secondary school. Feasibility was assessed in terms of adherence (whether the essential programme elements were delivered as intended) and exposure (how much of the intervention the participants received) (see table 3.3 for the respective fidelity criteria). Data came from session checklists and fieldnotes.
Adherence

The level of adherence to each part of RESII is presented in table 4.3. As both focal students attended the same social-skills group, and their peers attended the same peer-awareness campaign, the findings are not differentiated for Michael and Logan.

Table 4.3 Adherence to the essential programme elements

<table>
<thead>
<tr>
<th>Essential programme elements</th>
<th>Adherence</th>
<th>Fidelity achieved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social-skills group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group includes typical peers</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Percentage of sessions where group guidelines adhered to</td>
<td>71%</td>
<td>Yes</td>
</tr>
<tr>
<td>Percentage of sessions where all three core parts of Attention Autism session delivered</td>
<td>100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Peer-awareness campaign</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivered to peers with whom focal students spend the majority of time</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Percentage of sessions where script was adhered to</td>
<td>57%</td>
<td>No</td>
</tr>
<tr>
<td>TA training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All TAs supporting focal student receive training</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Training was delivered one-to-one</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Percentage of content delivered as intended</td>
<td>100%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Social-skills group

The social-skills group comprised the two focal students and three peers. These peers were ‘typical’ in the sense that they were not identified as having SEN, although the school’s SENCo noted that two of them experienced difficulties in social interaction. Thus, this essential programme component was adhered to with fidelity. The group guidelines were not adhered to with fidelity. Whilst at least one adult in addition to the researcher was present for each Attention Autism session (Abigail was present at every session, and Caroline for two), the presence of other adults was the main reason for the group guidelines not being adhered to roughly 29% of the time (equal to two sessions). In session two, week three, the supporting adults engaged in conversation more often than the guidelines recommend (see appendix 3.2), and they directed student attention away from the activities (fieldnotes, week three). In session three, the teacher was present but was feeling unwell, and as a result was not an active participant in the
group, and her behaviour was not in accordance with the guidelines (fieldnotes, week four).

Whilst the three core parts of the Attention Autism programme were delivered in 100% of the sessions, demonstrating fidelity, the researcher had some concerns that the group participants were not benefiting from them as they should, for example: ‘…the room is too noisy, and the students didn’t pay much attention to each other’ (fieldnotes, week seven). This led the researcher to identify the need to ‘…establish some rules’ (fieldnotes, week seven). There was also concern that Michael was isolated in some sessions, despite showing engagement in the activities: ‘Michael seemed very excited and was enjoying himself, but he still wasn’t really part of the group – he stayed on his own throughout…’ (fieldnotes, week three).

**Peer-awareness campaign**

The peer-awareness campaign was delivered to the focal-students’ form group as opposed to their teaching group, with whom they spent the majority of their school hours. The SENCo stated this was because she had been unable to identify a suitable lesson during which their teaching group could receive the intervention (fieldnotes, week one). This is in line with earlier intervention work in schools, which has highlighted the challenge of finding time for non-academic interventions, especially in secondary schools (Berman & McLaughlin, 1976; Greenberg, 2010; Lendrum et al., 2013). Thus, this essential programme component was not adhered to with fidelity.

The script was not adhered to in 43% of the peer-awareness sessions (equal to three sessions), and therefore fidelity for this essential programme component was not achieved. In all three sessions, session content was not delivered due to a lack of time. This was either as a result of the session starting later than planned due to the absence of the class teacher (fieldnotes, weeks five and six), being unable to use the accompanying PowerPoint presentation due to the absence of the class teacher (fieldnotes, week seven), or because earlier activities took longer than expected (fieldnotes, week five and six). In all cases, time allocated for class discussion or other activities was omitted to enable as much of the core content to be delivered as possible, but the researcher acknowledges that these activities also had an important part to play in consolidating student learning.
TA training
Each focal student was regularly supported in their lessons by one TA, and both of these TAs received the training. Thus, this essential programme element was adhered to with fidelity. However, the training was delivered to a group of five TAs (three of whom did not support the focal student with ASC), rather than on a one-to-one basis as specified in the essential programme element criteria, thus, fidelity was not achieved. The school SENCo had, without the researcher’s knowledge, arranged for all five TAs to attend the training at the same time as she felt that all staff could benefit from it (fieldnotes, week two). As they had already made considerable arrangements to enable the TAs to attend, the researcher felt obliged to deliver the training to the whole group. It is not clear the extent to which this impacted on the quality of the training received, but the researcher noted that during the latter half of the training (where the role of the TA in hindering and facilitating social interaction is discussed) the TAs ‘became quite defensive and seemed unwilling to engage. For example, when asked to consider a time they might have acted as a barrier to social interaction, Caroline replied “never”’ (fieldnotes, week two). It is possible that the presence of their colleagues inhibited the extent to which the TAs were willing to reflect on the practice, although this is purely speculative.

All TA training content was delivered as intended, and this essential programme component was implemented with fidelity. This was despite the fact that the training session only took two hours, rather than the four intended (fieldnotes, week two). This is possibly a result of the above observation that the TAs did not readily engage with the activities, meaning that less time was spent on them.

The issue of timing relates not just to adherence, but also to exposure to the essential programme components. The level of exposure to each part of RESII is presented in table 4.4. As Michael and Logan did not attend the same number of Attention Autism sessions, the data for the social-skills group is separated by focal student.
Exposure

4.4 Exposure to the essential programme components

<table>
<thead>
<tr>
<th>Essential programme component</th>
<th>Exposure</th>
<th>Fidelity achieved?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social-skills group</td>
<td>Eight, 30 minute sessions</td>
<td>88%</td>
</tr>
<tr>
<td>Peer-awareness campaign</td>
<td>Eight, 20 minute sessions</td>
<td>88%</td>
</tr>
<tr>
<td>TA training</td>
<td>One, four hour training session</td>
<td>50%</td>
</tr>
</tbody>
</table>

**Social-skills group**

Michael missed one Attention Autism session, and Logan missed two. Both of them missed the third session as the school was closed due to snow (fieldnotes, week four), and Logan missed the eighth session due to illness (fieldnotes, week nine). Only Michael’s exposure reached the 80% fidelity threshold.

**Peer-awareness campaign**

One session of the peer-awareness campaign was not delivered as the school was closed due to snow (fieldnotes, week four). Exposure was over the 80% threshold, indicating feasibility. As there were only eight weeks in which to deliver all eight sessions, and only time to deliver one session per week, the researcher had to decide which session should be missed: the third session, or a later session. The third session focused on how students with a range of disabilities (excluding ASC) could be supported in mainstream school settings. The aim of the third session was to increase peer acceptance of difference. As the previous two sessions had the same aim, the decision was made to skip the third session and move directly on to the fourth session, the aim of which was to raise awareness of ASC. This also ensured that none of the remaining sessions, all of which focused on ASC specifically, were missed. Furthermore, the researcher did not want to skip the eighth session as the posters created in this session were to provide data on the level of peer awareness of ASC.
TA training
The TA training session lasted just two hours, meaning participants were exposed to just 50% of the expected time. This is well below the 80% threshold, indicating limited feasibility. It is not clear, however, whether this limited exposure was the result of the lack of adherence to one-to-one delivery. It is possible that when delivered in the intended way, the training could last four hours.

4.2.2 Suitability of outcome measures
The second aim of study one was to assess the suitability of the research measures for generating data for the targeted proximal outcomes (improved social skills of students with ASC; increased peer awareness of the condition; greater quantity and quality of FBs used by TAs supporting students with ASC) and distal outcomes (greater social support from peers; greater social acceptance from peers; greater quantity and quality of social interaction with peers - see figure 2.1 and sections 2.2.1 and 2.2.2 for further information regarding the intended outcomes). Specifically, the research outcome measures were trialled to determine if they were understandable to participants (e.g. could be completed without difficulty), or yielded sufficient and relevant data. However, although the primary focus was on the quantity and quality of data generated by each outcome measure, findings related to the impact of RESII are presented in this section in so far as they say something about the appropriateness of RESII or the intended research measures. This section starts with an overview of the data generated from the proximal outcome measures, followed by an overview of the data generated from the distal outcome measures.

Proximal outcomes
The three intended proximal outcomes of RESII are (1) improved social skills in students with ASC, (2) increased peer awareness of the condition and (3) greater quantity and quality of FBs utilised by TAs supporting the focal students. Data for the proximal outcomes came from focal student and TA interviews, peer posters and questionnaires (CATCH) and student and TA observations. The data collected was used to determine the appropriateness of the selected measures for capturing the outcomes. The amount of data collected is reported here, as well as early indications of efficacy in so far as they indicate the feasibility and appropriateness of the intervention.
Social skills

Student and TA interviews were conducted to generate data about the social difficulties experienced by the focal students prior to and following RESII. Unfortunately, the interviews were not successful in this regard. Both interviews were guided by a semi-structured interview schedule focusing on the social experiences of the focal students, yet steering the conversation towards this appeared problematic. The focal students tended to focus more on their peers’ social behaviour than their own, and Michael in particular struggled to articulate or expand on issues relating to social interaction. Given the social nature of ASC, it is unsurprising that the participants found it difficult to be in the interview situation, as well as answering questions that would require them to have some degree of conscious awareness about their social lives. This challenge has been acknowledged by other researchers in the field. Cohen (1998) argues that the extent to which the views of individuals with ASC can be accessed is limited by the difficulties in social interaction and social communication characteristic of the condition. Thus, although the student interviews resulted in some data being generated, this data was limited in that it did not produce sufficient, or relevant, information.

At T1, the TAs were interviewed together (as was the preference of the SENCo) and, perhaps as a result of this, the topic tended to drift towards more generic issues of supporting students with ASC in the classroom, and academic, rather than social, difficulties. However, even when the interviews were conducted separately at T2, the TAs still tended to steer their answers towards more general issues, particularly around difficulties with schoolwork. Thus, the semi-structured interview schedule did not appear to be an appropriate measure for generating data pertaining to the social skills of students with ASC. In terms of acceptability, Caroline indicated that, for Michael at least, the intervention was effective: ‘I’ve seen a difference in Michael since you’ve been with him…when I first was with Michael, he sat there so quiet, but when I came in here [the social-skills group] with you, he was sat, he was talking, he was taking part…and I just thought ‘there’s a kid that wouldn’t dare speak out!’’, and now…I think it’s because you made him feel comfortable’ (TA interview, week 10).

Peer awareness of ASC

The peer posters and CATCH were used to generate data about the peer awareness of ASC prior to and following RESII. The students worked on the peer posters in pairs,
and a total of 10 posters were analysed. Combined, the 10 posters contained 37 sentences relating to ASC, and these sentences were coded according to the themes identified in the content analysis framework (see table 4.5, below).

Table 4.5 The number of sentences for each of the subjects/themes in the content analysis framework

<table>
<thead>
<tr>
<th>Subject/theme</th>
<th>Defining ASC</th>
<th>Impact of ASC</th>
<th>Supporting a peer with ASC</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number count</td>
<td>6</td>
<td>3</td>
<td>24</td>
<td>4</td>
<td>37</td>
</tr>
</tbody>
</table>

The majority of the information included in the peer posters related to strategies for supporting a peer with ASC. 19 of the 24 sentences were a direct copy of the ‘class rules for an autism friendly classroom’ that had been generated as part of the seventh session, namely: be patient, be quiet, be friendly and be alert. The remaining five sentences were also based on the class rules, but had been expanded to give more information, such as ‘be friendly: introduce them to your friends’. In terms of what the students knew about ASC, five sentences made reference to the fact that ASC was genetic, whilst one stated that ‘Autism is when somebody is born and there [sic] brain is not normal…’ Four sentences were coded as ‘other’ and all four of these focused on a negative aspect of ASC, primarily ‘anger’. For example, one student wrote: ‘be aware of autism anger because it will be violent’, whilst another said ‘your temp[erature] goes up with anger.’ Overall, the findings from the peer posters indicated a very narrow understanding of ASC, especially when it came to defining the condition and the impact the condition could have on a student within a school setting. Although the students did present ways to support students with ASC, they seldom provided practical examples for how to do so. Reflecting on this in her fieldnotes, the researcher noted that:

‘This session highlighted that they [the peers] don’t really get what autism is. Their posters mainly just focused on the rules and didn’t really explain what autism is. I wrote ‘genetic’ on the board for one pupil, and then a few more students wrote that on their posters…I need to give far more clear examples…so two sessions [specifically about what ASC is] are needed’ (fieldnotes, week nine).
Most worrying, however, was the reference to anger in just under half (40%) of the posters. This could potentially lead to a negative, rather than positive, attitude towards those with the condition. The CATCH scores were calculated to compare the change in peer attitudes towards ASC before and after receiving the peer-awareness campaign. A higher score on the CATCH indicates a more positive attitude towards ASC, with 40 being the highest score. The mean total CATCH score at T1 was 27.61 (n=10), and at T2 it was 27.13 (n=15). Therefore there was no change in attitudes towards ASC after the peer-awareness campaign, and in spite of the emphasis on ‘anger’ in the peer posters.

Interestingly, Caroline observed that the peer-awareness campaign had raised peer awareness of the condition. She said: ‘I think you have made them [the peers] more aware of these pointers that autistic children do have, so I have seen a difference in the kids…some of the kids will say ‘Wendy taught us this today…’ so they are aware of that. It’s a shame you can’t go into the rest of the forms!’ (TA interview, week 10).

Whilst the findings from the peer posters and CATCH suggest that the peer-awareness campaign did not successfully raise awareness of the condition and/or attitudes towards those with ASC, the selected measures appeared appropriate for generating data for this proximal outcome. However, there were two issues with the CATCH. Firstly, peers had to know what ASC was in order to complete the questionnaire, which perhaps explains the low response rate, especially at T1 (there were 21 students in the form group). Secondly, the measure was time consuming to complete and a number of them were not finished within the allotted time, resulting in missing data (n=9). Both of these reasons reduce the extent to which the CATCH can reliably capture changes in peer attitudes.

**TA use of FBs**

Student and TA observations, and TA interviews were used to generate data about the quantity and quality of FBs used by the TAs following RESII. As noted in the analytical strategy section, above, the observation schedule did not seem to generate adequate data for this proximal outcome and is not included in the findings. Specifically, the schedule did not allow the link between a FB and the resultant social interaction to be maintained, nor did it allow information regarding the type of social interaction being performed to be collected. There were also issues with the data
generated in the TA interviews, and these are discussed in the social skills section above. Overall, neither measure proved adequate for generating data for this proximal outcome. The limited interview data that is available is presented below.

The FBs the TAs used did not seem to differ by TA or between T1 and T2. The key strategy used was ‘fade back’ – to help other students in the class instead of supporting Michael or Logan directly. This was to ‘divert attention’ away from them so that they wouldn’t ‘stand out’ from their peers (TA interview, week one). Another strategy used was assigning mentors: ‘If I’m not in the lesson now, its got to the point where there’s a few people who I can trust and I can say ‘right, I’m not in so and so, so can you help him?’’ (TA interview, week ten). Overall, however, there was very little evidence that strategies to facilitate social interactions were being used regularly as a key part of the TAs’ roles both prior to, and after the intervention, most likely as a result of limitations with the outcomes measures.

Distal outcomes
The three intended distal outcomes of RESII for the students with ASC are (1) greater social support (i.e. friendship, reduced bullying) from peers (2) greater social acceptance from peers and (3) greater quantity and quality of social interaction with peers. Data for the distal outcomes came from focal student and TA interviews, peer questionnaires (SIS) and student and TA observations. The data collected was used to determine the appropriateness of the selected measures for capturing the outcomes, and findings are reported in so far as they indicate the feasibility and appropriateness of RESII.

Social support
Student and TA interviews were conducted to generate data about the social support experienced by the focal students prior to and following RESII. Specifically, they were used to look at the quantity and quality of friendships enjoyed by the students with ASC, and the level of bullying experienced. Unfortunately, as described in the social-skills section above, issues with the student and TA interviews meant that data for this distal outcome was limited. However, some findings relating to the acceptability of the intervention can be reported. Both Michael and Logan felt that they had more friends following intervention, and in particular, they both reported becoming closer friends
with one of the peers from the social-skills group, Ahmed: ‘I’ve become better friends because we like play around and stuff’ (Logan, student interview, week ten).

Furthermore, Logan also felt that he’d ‘made a lot of new friends with people in [his] form…’ (student interview, week ten), and that their behaviour towards him had changed as a result of the peer-awareness campaign. He felt that they had ‘learnt a lot’ and this was evidenced by them being ‘more concerned about when I’m going to lash out at somebody.’ He gave an example of this: ‘When I was about to punch Jonathan…I was about to punch him full-blown in the face, but then Ahmed took me away from him, like literally got me out of the way’ (Student interview, week ten). These findings indicate that for the focal pupils at least, the intervention was perceived as having made a positive impact to their level of social support.

**Social acceptance**

Student interviews and peer questionnaires (SIS) were used to measure the social acceptance experienced by the focal students prior to and following RESII. Due to the limitations with the student interviews (see the proximal outcomes section), no interview data regarding social acceptance was generated (beyond that reported in the social support section, above). Therefore, only the SIS data is presented here.

The SIS was used to generate a measure of social acceptance and rejection for each focal student. The calculated indexes of acceptance and rejection for both the ‘like to work with’ and ‘like to spend time with’ questionnaires are shown in table 4.6. A number closer to 1 indicates a higher level of acceptance and rejection, respectively.

<table>
<thead>
<tr>
<th>Table 4.6 Indexes of social acceptance and rejection</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
</tr>
<tr>
<td>Student</td>
</tr>
<tr>
<td>Like to work with</td>
</tr>
<tr>
<td>Acceptance</td>
</tr>
<tr>
<td>Rejection</td>
</tr>
<tr>
<td>Like to spend time with</td>
</tr>
<tr>
<td>Acceptance</td>
</tr>
<tr>
<td>Rejection</td>
</tr>
</tbody>
</table>

At T1, Michael had a higher level of social acceptance and a lower level of rejection than Logan for both working with and spending time with. At T2, however, this trend
reversed, with Logan becoming more accepted and less rejected than Michael for both measures.

The SIS seemed to generate adequate data for this distal outcome. The pattern of findings is, however, confusing, given that Logan’s social acceptance increased after the intervention, whilst Michael’s decreased. A possible explanation for this is that Logan openly discussed having ASC throughout the peer-awareness campaign, and shared his experience of the condition in the seventh peer-awareness session. Perhaps being made explicitly aware that Logan had ASC made the form group more understanding of Logan, and therefore more likely to want to work with him or spend time with him. Indeed, this is in part supported by Logan’s own observations of classmate support in the above section. Conversely, Michael’s diagnosis was never revealed to the class, and it is possible that they did not generalise what they learnt about ASC to Michael. This does not, however, explain why he became less accepted and more rejected, rather than just staying the same.

Social interaction
Student interviews and TA and student observations were selected to generate data about the social interactions between the students with ASC and their peers prior to and following RESII. Unfortunately, due to the limitations with the student interviews and observation schedules already outlined earlier in the findings section, no data for this distal outcome was generated.

Summary
Study one was conducted to examine (1) the feasibility of conducting RESII in a mainstream secondary school and (2) the appropriateness of the measures selected for capturing the targeted outcomes. With regards to the first of these aims, there was evidence that RESII could be conducted within a mainstream secondary school. The social-skills group seemed the most feasible component of RESII to implement, with two of the three essential programme elements being adhered to with fidelity, and good levels of exposure. The fact that one session was missed as a result of external factors (the weather) and another due to student absence, suggests that there are no obvious school or programme level barriers to implementing the Attention Autism programme. The peer-awareness campaign was the least feasible element, with neither of its two
essential programme components being adhered to with fidelity. This seemed to be due to time constraints. Firstly, sufficient time could not be found within the focal-students’ teaching group in which to deliver the campaign. Secondly, there was insufficient time to deliver all the session content, primarily due to the absence of the class teacher. This indicates that there may be school and teacher level barriers to implementing the peer-awareness campaign. Participants did, however, have a good level of exposure to the peer-awareness campaign. As with the social-skills group, the one session that was cancelled was missed as a result of the weather, rather than a school or programme level issue. Two of the three TA training essential programme elements were adhered to with fidelity, indicating feasibility, but the fact that the school SENCo expressed a preference for the TAs to all receive their training together indicates a potential school-level barrier to implementation. The TA training lasted half the intended length, and it is not clear if this was a result of the group delivery method or a programme level barrier. In conclusion, RESII does seem feasible to implemented as intended within a mainstream secondary schools, but time constraints are likely to present a barrier to the extent to which the essential programme elements are implemented as intended.

With regards to the second aim, there was evidence that some of the outcome measures were appropriate whilst others were not. The session checklists and fieldnotes worked well to capture feasibility data. The peer posters and peer questionnaires (CATCH and SIS) also produced adequate data to explore the impact of RESII on the targeted proximal and distal outcomes, although the CATCH was limited by the large number of items and the need for prior knowledge of ASC to complete it. The student and TA interviews and observation schedule were particularly disappointing, and failed to generate adequate data for the majority of the targeted proximal and distal outcomes. The limited data available made it difficult to determine the potential impact of RESII on the targeted proximal and distal outcomes, although this was not a key aim of study one. Nonetheless, some conclusions could be drawn. In terms of the proximal outcomes, there was little evidence that the social-skills group led to an improvement in the focal students’ social skills, despite it being the most feasible component of RESII to implement. The peer awareness of ASC was low after the intervention, and the intervention did not have an impact on peer attitudes towards those with the condition. This was either a result of the low adherence to the essential programme components, or
the limitations with the CATCH (specifically the low response rate). There was no evidence that TA use of FBs increased as a result of the TA training. As with the peer-awareness campaign, these findings could be the result of the outcome measures used, or the level of adherence to the essential programme components. In terms of the distal outcomes, there was some evidence that both students with ASC (Logan in particular) felt they had a greater level of social support following the intervention, but this was matched with an increase in social acceptance for Logan only. Unfortunately, there was no data available regarding the quantity and quality of social interactions between the focal students and their peers. From the scant data available, it seemed that even though RESII did not impact on the proximal outcomes, there was some evidence of impact on the distal outcomes, and this was more positive for Logan than for Michael. The low quantity and quality of outcome data, and the early stage of the research, however, mean that all findings at this stage are tentative and should be treated with caution.

4.3 Conclusion

This chapter has reported on the methodology and findings from the first of two studies conducted to assess the feasibility and efficacy of RESII. The study described here focused specifically on the feasibility and appropriateness of the intervention and selected outcome measures. In doing so, this chapter represents the first phase of the third step in the intervention-research framework guiding this thesis. The social-skills group appeared the most feasible element to implement with fidelity, whilst the peer-awareness campaign was the least. The initial findings indicated that overall RESII had a limited impact on the proximal and distal outcomes, although this was difficult to establish given a number of issues with the selected outcome measures. Since the findings from study one were intended to be formative, rather than summative, (Fraser & Galinsky, 2010), they were used to identify potential areas for improvement. Changes were made to RESII and the outcome measures prior to beginning the second study, and these changes can be found at appendix 4.17 and 4.18, respectively. The refined intervention and measures were then used in study two to further establish the feasibility of implementing RESII within the intended setting, and to generate some initial data pertaining to RESII’s efficacy. The methodology and findings from study two are presented next, in chapter five.
Chapter 5

Study two: An initial examination of the efficacy of RESII

‘The fundamental purpose of experimental design is to improve control over conditions that would otherwise cloud the true effects of the independent variables upon the dependent variables’ (Cohen et al., 2007, p. 155)

This chapter presents the methodology and findings of the second of two studies conducted as part of the third step of the framework guiding this thesis, the purpose of which was to pilot RESII in a series of small-scale studies to examine its feasibility and initial efficacy (Comer, et al., 2004; Fraser, 2004; Fraser & Galinsky, 2010). Study one was the first of these studies, and it focused primarily on the feasibility of implementing RESII within a mainstream secondary school, and the suitability of the selected outcome measures (see chapter 4). The second study was a small-scale, cluster randomised controlled trial involving eight students with ASC drawn from four mainstream secondary schools. It too focused on the feasibility of implementing RESII as intended, alongside establishing preliminary evidence of RESII’s efficacy. Furthermore, as with study one, it was intended that the findings from study two would be used to improve RESII’s content (Fraser & Galinsky, 2010; Schilling, 1997). Drawing on distinctions between different types and purposes of research, study two of this thesis can therefore be classified as an evaluation study (Patton, 2002), with a formative purpose (Merten, 2009). That is, alongside establishing RESII’s feasibility further, the study was conducted to begin to assess the efficacy of RESII, and to identify potential areas for improvement. Study two therefore addresses both of the research questions guiding this thesis.

The first section of this chapter (section 5.1) provides an overview of study two’s methodology, whilst the second section (section 5.2) presents the findings derived from the study. The additional findings relating to the feasibility of implementing RESII, which build on, and complement those presented in chapter 4, are discussed in section 5.2.1. The initial findings relating to the efficacy of RESII are presented in section 5.2.2. As mentioned above, an additional aim of study two was to refine and improve the design of RESII further. The implications of the findings from the second study on the design of RESII are discussed in the following chapter, where they are combined with the findings from study one to draw conclusions about the feasibility and efficacy
of RESII when implemented in a mainstream school setting. Limitations of both studies, and next steps in the process of developing RESII are also discussed in chapter 6. As study two built on, and had similar aims to, study one, there are a number of similarities in the methodologies of both studies. The epistemological framework, analytical strategy and ethical considerations, for example, were the same in both studies, and as such are not presented again here. Please refer to section 4.1.1, 4.1.6 and 4.1.7 respectively for information on these two methodological aspects.

5.1 Methodology
5.1.1 Research design
A cluster randomised controlled trial (RCT), using schools as clusters, with a crossover, mixed-methods design was selected for use in study two. There was one independent variable and six dependent variables. The independent variable was whether or not a school received RESII. As with study one, the dependent variables were the targeted proximal and distal outcomes. The proximal outcomes were the social skills of the students with ASC, peer awareness of ASC and TA use of FBs. The distal outcomes were the level of social support experienced by the students with ASC, the level of social acceptance from their peers and the quantity and quality of social interaction between the students with ASC and their peers.

RCTs offer two main advantages compared with other research designs, particularly in relation to the aims of the second study. Firstly, they allow the cause of a change (e.g. an intervention) to be isolated, through the use of control groups. Secondly, they can control for other factors that might have impacted on the results, through the use of randomisation (Field & Hole, 2003). Control groups, who typically receive either no intervention or a comparison intervention (Mertens, 2009), allow researchers to determine whether any observed changes are the result of RESII itself, or the effects of other factors such as maturation and/or schooling (Duff & Clarke, 2011). Due to financial and time constraints, the students in the control group in study two did not receive an alternative intervention, but instead received ‘treatment as usual’, namely the standard practice offered by their school, details of which can be found in section 5.1.2. Furthermore, a crossover design was used: participants in the control condition received RESII once treatment of RESII group had finished. This crossover, wait-list design, used in other ASC social interventions (e.g. Laugeson et al., 2009; 2012) can provide
adequate evidence for the impact of a particular intervention (provided the participants have been randomised to that condition), with the benefit of requiring fewer participants overall (Duff & Clarke, 2011). This was relevant for study two, as time and resource constraints limited the number of participants who could receive RESII.

Thus, aside from having a control group, a well-conducted RCT must also include randomisation of participants to RESII or control condition. Randomisation is argued to provide the strongest evidence of the impact of an intervention as it minimises the effect of variables which are beyond the control of the researcher (Field & Hole, 2003; Duff & Clarke, 2011). Therefore, the participants in study two were randomised to either RESII or waitlist control condition. It was not possible to randomise at the student level, however, as there was no way of insuring that students in the control condition would not be contaminated by RESII in some way (Moerbeek, 2005). For example, the same TAs might support students in both RESII and control group, or some of the peers receiving the peer-awareness campaign might have lessons with a student in the control condition. Such situations would jeopardise the extent to which the students in the control group were receiving ‘treatment as usual’, and consequently reduce the extent to which reliable judgements about RESII’s efficacy could be drawn (Duff & Clarke, 2011). Cluster randomisation, where groups, rather than individuals, are assigned to a study’s control and intervention condition (Moerbeek, 2005) was therefore selected. The groups in this case were the schools the students attended.

Although randomisation is advantageous, an important caveat is that its advantages are typically only realised with large sample sizes (Cohen et al., 2007). Due to the stage of intervention development, study two only included eight students with ASC from four schools, reducing the extent to which the study could benefit from randomisation. The current study included two key design features to address this limitation. Firstly, it included a crossover design, whereby each cluster experienced both the control and intervention conditions (Rietbergen & Moerbeek, 2011), and secondly it included a mixed-methods design. Crossover designs can reduce the effects of between-cluster variance, since each cluster experiences both experimental conditions (Ader, Mellenbergh & Hand, 2008; Rietbergen & Moerbeek, 2011), whilst using mixed methods can allow the complexity of cause and effect relationships to be more closely examined (Cohen et al., 2007), and strengthen the claims that can be made regarding
RESII’s efficacy (Gorard & Taylor, 2004). For further consideration of the advantages of a mixed-methods approach, see section 4.1.2. The use of a crossover design also allowed maintenance effects to be observed in the students receiving RESII first, something which is often overlooked in intervention studies with students with ASC (Bellini et al., 2007; Laugeson et al., 2012).

The design of the study was not only appropriate to its aims, but was also congruent with the epistemological stance taken (see section 4.1.1) and the phase of intervention development. With regards to the former, the pragmatic position adopted in this thesis advocates selecting the philosophical or methodological approach that will work best for solving a particular research problem (Robson, 2011). Since a key aim of study two was to assess the initial efficacy of RESII, and RCTs constitute a research design that allows efficacy to be assessed (Field & Hole, 2003) it was deemed an appropriate approach to address the research aims of the study. With regards to the phase of intervention development, RCTs are recommended as the most convincing research design for establishing efficacy (Campbell et al., 2000; Fraser & Galinsky, 2004), including during the earlier stages of intervention research (Comer, et al., 2004). RCTs are not only favoured because of their suitability for determining the effect of an intervention, but because they allow the size of such effects to be measured, informing the design (e.g. sample size) of future, larger-scale efficacy studies (Campbell et al., 2000). Similarly, it provides the researcher with the opportunity to trial the design and methods of a study, in preparation for conducting larger, more rigorous RCT studies at later stages of intervention development (Tickle-Degnen, 2013; Fraser & Galinsky, 2010).

In addition to the relevance to the purpose and epistemological approach of study two, an RCT design was selected due to the support for their use with educational interventions more broadly. Some educational researchers regard RCTs as the ‘gold standard’ of research design (Cohen et al., 2007), particularly in intervention studies. Torgerson & Torgerson (2013), for example, argue that RCTs ‘…are the best approach for demonstrating the effectiveness of a novel educational intervention’ (p.2). Indeed, educational policy makers in the UK and elsewhere are increasingly advocating the use of such designs as part of a movement towards evidence-based practice in education (Biesta, 2007), including those for use with students with ASC (Mesibov & Shea,
Despite this, there are comparatively few RCT intervention studies involving students with ASC (Bond et al., 2016; Cappadocia & Weiss, 2011; Kasari & Smith, 2013; Reichow & Volkmar, 2010) and so the inclusion of such a design here helps address this gap. In doing so, it provides vital information about the process of conducting RCTs assessing school-based interventions for included students with ASC.

In summary, a cluster randomised controlled trial (RCT), with a crossover, waitlist, mixed-methods design was adopted in study two. It is important to stress, however, that whilst steps were made to ensure the integrity of the research design and conclusions that could be drawn from it, the purpose of study two was not to provide definitive evidence of RESII’s effectiveness. Rather, study two is one of potentially a number of studies, the aim of which is to generate preliminary data regarding RESII’s feasibility and efficacy. This was in line with the framework guiding this thesis, which makes clear that studies conducted during this third step of intervention development are as much concerned with the feasibility of implementing the new intervention and research design, as they are with determining efficacy (Comer, et al., 2004).

5.1.2 Participants

Study two took place over two school terms (September 2013 to May 2014) of one academic year. Two schools received RESII per term, with two students with ASC per school. Thus, eight students with ASC from four schools were recruited to take part in the study. Sixteen schools in the North West of England were initially contacted by the researcher via email about the opportunity to take part in the study (a copy of the email can be found at appendix 5.3). An additional school was recommended to the researcher by their supervisor, and a further two schools in the South East of England were contacted via the developer of the Attention Autism programme, giving 19 schools in total. The school that participated in study one was not offered the opportunity to participate in study two as it had already been exposed to RESII and, therefore, may have responded differently to RESII than those who had not, for example through contamination effects (van Teijlingen & Hundley, 2001, see above).

The special educational needs coordinator (SENCo) was selected as the key contact for each school, given the role they play in determining the support for students with SEN. Of the 19 SENCos contacted, six did not respond, four felt unable to participate due to
time or institutional constraints, and nine wished to participate. From these nine schools, schools were selected to participate based on them meeting the following inclusion criteria: (a) they were willing and/or able to participate for the full duration of the study, (b) they had at least two students in years seven to nine with a confirmed ASC diagnosis, across two peer groups and (c) they did not already offer a comparable intervention. An initial face-to-face meeting with the schools’ SENCo regarding their provision for the social inclusion of pupils with ASC was used to confirm if the criteria were met. Three schools did not meet the criteria, specifically the second criterion, leaving six potential schools.

The schools

As more than four schools met the inclusion criteria, efforts were made to select the four schools that were the most similar to each other. This was important in order to control for factors beyond the researcher’s control, such as school size and student intake, that may have confounded the study findings (Duff & Clarke, 2011). Ofsted reports indicated, however, that all six schools varied on relevant characteristics, including the percentage of students at the school with SEN. Consequently, four schools were randomly selected for inclusion. Table 5.1 provides information on the number of students, the percentage of students with SEN, the level of attendance and the level of academic achievement for each school. Before continuing with the study, the four schools were asked to provide institutional consent to take part from the headteacher. Once this had been received, each of the four schools were asked to select two students from years seven to nine with ASC who they felt would benefit most from taking part in RESII. The names\textsuperscript{1} of all participants from each school can be found at the end of this section in table 5.3.

\textsuperscript{1} All names are pseudonyms
Table 5.1 Characteristics of the four participating schools in 2013

<table>
<thead>
<tr>
<th>School</th>
<th>Number of students</th>
<th>Percentage of students on school action plus or a statement of SEN</th>
<th>Percentage overall attendance</th>
<th>Percentage achieving expected academic achievement*</th>
</tr>
</thead>
<tbody>
<tr>
<td>School one</td>
<td>Above average</td>
<td>Below average</td>
<td>Average</td>
<td>Below average</td>
</tr>
<tr>
<td>School two</td>
<td>Average</td>
<td>Average</td>
<td>Above average</td>
<td>Above average</td>
</tr>
<tr>
<td>School three</td>
<td>Below average</td>
<td>Above average</td>
<td>Average</td>
<td>Below average</td>
</tr>
<tr>
<td>School four</td>
<td>Below average</td>
<td>Below average</td>
<td>Average</td>
<td>Below average</td>
</tr>
<tr>
<td>National average (EduBase, 2016)</td>
<td>978</td>
<td>7.7</td>
<td>94</td>
<td>60</td>
</tr>
</tbody>
</table>

* percentage of all students achieving five GCSEs grade A*-C including English and mathematics.

The students

A student could be included in the study if they (a) had a Statement of Special Educational Needs, with a primary need of ASC and (b) had one or more TAs supporting them at school. Evidence of the Statement and/or ASC diagnosis was provided by the school SENCo. The researcher did not independently administer a measure of ASC, such as the Autism Diagnostic Observation Schedule (Lord, Rutter, DiLavore & Risi, 2001) due to financial constraints. However, a measure used to assess the social skills of children and young people with ASC (Social Responsiveness Scale, SRS, Constantino & Gruber, 2005), which can also serve as an indication of ASC severity, was used as an outcome measure. The SRS is recommended as a less costly and time-consuming alternative to more formal diagnostic tools (Laugeson et al., 2009), and this was completed three times for each participant throughout the study as part of the data collection (see section 5.1.3). The standardised total score for each participant at the start of the study is presented in table 5.2. Just under half of the students fell within the normal range, indicating the absence of ASC (although they fell within the upper limit of this range). Four were in the mild-moderate range, suggesting the participants experienced clinically significant difficulties in social interaction, which result in mild to moderate interference in the everyday life. Finally, one student fell in the severe range, indicating a clinical diagnosis of ASC, with severe difficulties in social interaction. Seven of the chosen students were boys, three were in year seven, four were in year eight and one was in year nine. In terms of ethnic heritage, five of the
students were White British, two were Asian and one was Black. The SENCo from each school contacted the parents of the selected students via telephone to discuss their participation in RESII, and an information sheet from the researcher was also sent home (see Appendix 4.1). Parents had up to three weeks to decide whether or not they would like their child to take part, and to ask any questions they may have to either the SENCo or the researcher. All of the approached parents gave consent within the three week time period (a copy of the consent form can be found at appendix 4.2).

Table 5.2 The standardised SRS scores and corresponding ASC severity range for each participant at the start of the study

<table>
<thead>
<tr>
<th>School</th>
<th>Participant</th>
<th>SRS standardised score</th>
<th>ASC severity range *</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 1</td>
<td>Jonathan</td>
<td>80</td>
<td>Severe</td>
</tr>
<tr>
<td></td>
<td>Caroline</td>
<td>67</td>
<td>Mild-moderate</td>
</tr>
<tr>
<td>School 2</td>
<td>James</td>
<td>44</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>John</td>
<td>70</td>
<td>Mild-moderate</td>
</tr>
<tr>
<td>School 3</td>
<td>Kevin</td>
<td>44</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>William</td>
<td>74</td>
<td>Mild-moderate</td>
</tr>
<tr>
<td>School 4</td>
<td>Abdul</td>
<td>70</td>
<td>Mild-moderate</td>
</tr>
<tr>
<td></td>
<td>Khalid</td>
<td>58</td>
<td>Normal</td>
</tr>
</tbody>
</table>

*<60 = normal, 60-75=mild-moderate, >75 = severe

The selected students from school one were Jonathan and Caroline, and both of them were in year eight. They had all their classes alongside their typical peers, and were not currently receiving any social skills support. The students from school two were James in year seven and John in year eight. Both students were in separate nurture groups with whom they had all their classes. The only opportunities they had to interact with their typical peers were during break and lunchtimes, although they were likely to be found in the nurture group classroom during this time. Like the students in school one, they were not currently receiving any social skills support, although the nurture group itself had a therapeutic element. The students from school three were Kevin in year seven and William in year eight. Both students had all their classes with their typical peers, although they were withdrawn for approximately one hour a week to work with a TA knowledgeable about ASC. These sessions tended to involve them discussing any issues they were experiencing at school or home. Neither student had been placed on a programme specifically designed to improve their social outcomes. Finally, the students from school four were Abdul in year seven and Khalid in year nine. Abdul was part of a nurture group with whom he spent the majority of his lessons. Khalid attended all his
classes with typical peers, but spent his break and lunchtimes on the computer in a room designated for supporting students with SEN. Neither student was currently receiving any targeted social support.

The peers
Once parental consent had been received for the students with ASC, the SENCos were asked to select up to five peers per focal student to take part in the Attention Autism programme. In school one, both Jonathan’s and Caroline’s groups included themselves and four typical peers. Each group of five comprised two girls and three boys, all taken from the same year group as the focal students, and both students spent the majority of their lessons with these peers. In school two, five peers were selected per student with ASC. In James’ group, the peers were three girls and two boys, and in John’s they were two girls and three boys. All of these peers were from the focal students’ nurture groups, so were already well known to them both. In school three, four peers were selected for Kevin, and five for William. All of the peers were boys with whom Kevin and William shared the majority of their classes. Kevin’s best friend was chosen to be a member of his group as the SENCo felt this would help Kevin settle more easily into the group. Conversely, a student with whom William often clashed was included in his group, in the hope that they could learn to tolerate each other better. Three of the peers in both groups had a diagnosis of ASC, with a fourth pupil suspected of having the condition in William’s group. In school four, four typical male peers were selected for Khalid’s group, and these were peers with whom he shared all of his classes. No students were selected for Abdul’s group as the group did not run. This will be discussed in more detail in section 5.2.1.

The SENCos contacted the peers’ parents via telephone to gain consent for their child to take part in the group. They were also given an information sheet from the researcher, which outlined what taking part in the study would involve (see appendix 4.3). It was made clear to parents that whilst no data would be collected directly from their children, detailed fieldnotes about each Attention Autism session would be kept by the researcher, which might include information about the behaviour of the typical peers. Parents had three weeks in which to decide if they were happy for their child to participate, and all of the parents gave consent within this time period (a copy of the consent form can be found at appendix 4.4). Once the Attention Autism groups were
confirmed, the SENCos were then ask to select the peer groups to receive the peer-awareness campaign. In schools one and three, the peer-awareness campaign was delivered to the focal-students’ form groups. In school two, the nurture groups to which James and John belonged received the peer-awareness campaign. In school four, Khalid’s teaching group (the group with whom he spent his lessons) were chosen for the peer-awareness campaign. None of Abdul’s peers received the peer-awareness campaign (see section 5.2.1). Parents of the peers received a letter from the researcher outlining the campaign and the data that would be collected from their children (see appendix 4.5). They were asked to contact the school within three weeks of receiving the letter if they did not want their child to take part in the study. No parents got in touch with the school for further information or to withhold consent (a copy of the dissent form can be found at appendix 4.6). In total, 141 peers were exposed to the peer-awareness campaign.

The TAs

Finally, the SENCos were asked to identify any TAs supporting the focal students with ASC on a regular basis to take part in the study. Selected TAs would receive the TA training on how to facilitate social interactions between students with ASC and their peers. Once identified, the researcher gave the TAs an information sheet (see appendix 4.7) and consent form (see appendix 4.8) and they were given three weeks to agree to participate in the study. It was made clear to them by both the researcher and the SENCo that they were not obliged to take part, and that not doing so would not impact on their position within the school. All of the TAs consented within the three weeks. In school one, three TAs supporting both Jonathan and Caroline received the training. In school two, one of two TAs supporting James, and the one TA supporting John attended the training session. In school three, all of the TAs in the school received the training (n=17), and this included the five TAs who most regularly supported Kevin and William. In school four, one of the two TAs supporting both Khalid and Abdul received the training. In total 23 TAs received the training, but just 9 of these participated in the study (see section 5.2.).
<table>
<thead>
<tr>
<th>Key contact</th>
<th>School one</th>
<th>School two</th>
<th>School three</th>
<th>School four</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Debbie</td>
<td>Lauren</td>
<td>Jemma &amp; Carly</td>
<td>Janine</td>
</tr>
<tr>
<td>Focal student</td>
<td>Jonathan</td>
<td>Caroline</td>
<td>James</td>
<td>John</td>
</tr>
<tr>
<td>Social-skill group members</td>
<td>Tom</td>
<td>Chelsea</td>
<td>Melanie</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Joe</td>
<td>Connor</td>
<td>David</td>
<td>Ethan</td>
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<tr>
<td></td>
<td>Keziah</td>
<td>Tom</td>
<td>Jade</td>
<td>Michael</td>
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<tr>
<td></td>
<td>Christina</td>
<td>Ibrahim</td>
<td>Ben</td>
<td>Jason</td>
</tr>
<tr>
<td>Peers</td>
<td>Form group</td>
<td>Form group</td>
<td>Teaching group</td>
<td>Teaching group</td>
</tr>
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<td>Form group</td>
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<tr>
<td>TAs</td>
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<td>Susan</td>
<td>Kate</td>
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<td></td>
<td>Lynette</td>
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<td>Julie</td>
<td>Alfie</td>
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<td></td>
<td>Sandra</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Thomas</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Betty</td>
</tr>
</tbody>
</table>

5.1.3 Methods
As stated in the research design section (5.1.1), a mixed-methods approach was adopted in study two. Mirroring study one, measures generating quantitative and qualitative were selected to address the research aims. Data was collected to ascertain the extent to which RESII’s essential programme elements could be implemented with fidelity, and the impact RESII had on the targeted proximal and distal outcomes. As outlined in section 4.1.2 and 5.1.1, the decision to use a mixed-methods design was made based on guidance relating to intervention research (Campbell et al., 2000; Fraser & Galinsky, 2010), as well as the underlying epistemological approach (Creswell & Plano Clark, 2007) and the benefits of using a mixed-methods approach. Table 5.4 shows each of the selected measures and the outcomes they are capturing.
Table 5.4 The selected measures for feasibility, proximal and distal outcomes and the research questions they address

<table>
<thead>
<tr>
<th>Type of data</th>
<th>Measure</th>
<th>Research question one</th>
<th>Research question two</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Feasibility</td>
<td>Proximal outcomes</td>
</tr>
<tr>
<td>Quantitative</td>
<td></td>
<td>Social-skills group</td>
<td>Peer-awareness campaign</td>
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<tr>
<td></td>
<td>Student questionnaire (CSEIP)</td>
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<td>✓</td>
</tr>
<tr>
<td></td>
<td>Peer questionnaire (SNFS)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Peer questionnaire (CATCH)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>TA questionnaire (SRS)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>TA and student observations</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Session checklists</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Qualitative</td>
<td>Fieldnotes</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Peer posters</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Student interviews</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>TA interviews</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

The measures are described in more detail, below, including the rationale for their selection. A number of the measures were also used in study one, although in some cases they were included in study two with some alterations or substitutions. The findings from study one regarding the appropriateness of the selected outcome measures (see section 4.2.2 and appendix 4.18) strongly influenced the choice of measures used in study two, and this influence is highlighted throughout this section. As with study one, and in line with the pragmatic approach adopted in this thesis, the decision to include a specific instrument was based firstly on the evidence that they could be used within school settings, and secondly that they had been successfully used in studies with aims similar to those of study two. It was only once these criteria had been achieved that the
psychometric properties of the measures were considered. These are reported where available.

**Quantitative measures**

**Student questionnaire**

The students with ASC completed one questionnaire: the Children’s Self-Efficacy in Peer Interactions scale (CSESIP, Wheeler & Ladd, 1982, see appendix 5.4) to measure their social skills (proximal outcome) and social support, social acceptance and social interaction (distal outcomes). The CSEIP measures student’s perceptions of their own ability to interact successfully with their peers in a variety of situations in school. The scale has 22 items, 12 that ask students about their self-efficacy in conflict situations (e.g. ‘Some kids are teasing your friends. Telling them to stop is...?...for you’) and 10 that ask students about their self-efficacy in non-conflict situations (e.g. ‘Some kids want to play a game. Asking them if you can join is...?...for you’). Respondents fill in the blanks on a Likert scale of one to four, where one is ‘really hard’, and four is ‘really easy’. A higher score indicates higher perceived social self-efficacy. The questionnaire was used as the basis of the student interview (see the qualitative instruments below). This decision was based on the findings from study one, which indicated that a quantitative measure of the social experiences of students with ASC would be beneficial to ensure that topics relating to the outcomes of interest were covered in sufficient breadth during the interviews, alongside acting as a clearer indicator of any changes in social skills or social support, acceptance, or interaction between students and data collection points (see appendix 4.18).

Unfortunately, a measure of ‘in vivo’ social skills specifically for use with students with ASC could not be found in the literature, so a more general scale that had been employed previously in school-based studies with some success was sought. A comprehensive study of the social experiences of students with spina bifida, including those attending secondary schools, employed the CSESIP to compare the social skills and friendships of these students with their typical peers (Devine et al., 2012). The researchers found that the measure produced adequate data, and reported outcomes were in the expected direction. Thus, the CSESIP scale appeared appropriate for use in the current study. It was selected for use for three additional reasons. Firstly, although other studies have successfully used questionnaires to generate data about the social
experiences of students with ASC, such as loneliness (Bauminger et al., 2003) and friendship (Locke et al., 2010) these focus only on social support, and not the other outcomes of interest to this study. Secondly, the scale includes clear, concrete examples of social behaviour such as ‘your class is going on a trip and everyone needs a partner. Asking someone to be a partner is..?..for you’ This is in contrast to the slightly more abstract questions used in other studies, such as ‘I feel left alone at school ‘ (The Loneliness Rating Scale, Asher, Hymel & Renshaw, 1984, cited in Bauminger et al., 2003). This is advantageous given the acknowledged difficulties students with ASC may have in accessing their social experiences (Cohen, 1998). Thirdly, the measure has good psychometric properties with high reported levels of internal consistency ($\alpha = .82-.86$, Devine et al., 2012) and test-retest reliability ($\alpha = .80-.90$, Wheeler & Ladd, 1982).

**Peer questionnaires**

The peers receiving the peer-awareness campaign completed two questionnaires: An adapted version of the Chedoke-McMaster Attitudes Towards Children with Handicaps Scale (CATCH, Rosenbaum, Armstrong & King, 1986) to measure their attitudes towards young people with ASC (proximal outcome) and the Social Networks and Friendship Survey (SNFS, Kasari et al., 2011) to measure the social support and acceptance of the focal students with ASC (distal outcome).

The CATCH was used with some success in study one, but a number of peers could not complete the measure prior to the peer-awareness campaign beginning because they did not know what ASC was. In addition, others could not answer all of the 36 items due to a lack of time. To address the issue of missing data in study two, two adaptations were made. Firstly, similar to a study by Dowjotas (2009), a vignette describing a ‘typical’ student with autism (named Jack) was presented at the top of the questionnaire. The vignette was adapted from one found in a teacher resource pack for raising autism awareness and understanding amongst peers (NAS, n.d.), which was also drawn on when developing the content of the peer-awareness campaign. Other studies have also included the use of a vignette alongside the CATCH items (e.g. de Boer, Timmerman, Piji & Minnaert, 2012) with success. However, unlike previous studies that have used this method, the vignette in study two did not reveal that the student had ASC. This was to ensure that prior knowledge was not necessary to complete the measure. Once peers had read the vignette, they answered the CATCH questions about Jack specifically. For
example, instead of item one reading ‘I would tell my secrets to a young person with autism’, it read ‘I would tell Jack my secrets’. Responses were indicated on a 5-point Likert Scale from 0 (strongly disagree) to 4 (strongly agree).

The second change made to the measure was that a shorter version was used. Shorter versions have been used elsewhere, including in the study by Dowjotas (2009) which was also examining peers attitudes towards ASC. A more recent and rigorously established short version was used in study two, however. A single factor, seven-item version of this scale was developed (internal consistency $\alpha = .88$) using a sample of 2396 students similar in age to the participants in study two (mean age 13 years and one month) (Bossaert & Petry, 2013), and it was this version that was adapted for use in study two. The version of the CATCH used in study two was trialled on 262 secondary school students prior to the study beginning (132 female, 127 males, 3 unknown) aged between 11 and 14 years (mean age 12 years, 3 months). The students completed the questionnaire on two occasions, two weeks apart, to assess test-retest reliability. Internal consistency was $\alpha = .85$, close to that reported by Bossaert & Petry (2013), whilst test-retest reliability was acceptable at $\alpha = .75$. A copy of the revised CATCH scale can be found at appendix 5.5.

The second questionnaire completed by the peers assessed the extent to which RESII had improved the social support and social acceptance of the students with ASC. Whilst the SIS had successfully generated social acceptance data in study one, it was replaced in study two by another measure of sociometric status, which additionally allowed social support data (in the form of reciprocated friendships) to be captured. This was regarded as beneficial given the limited data that had been captured for this distal outcome from the student and TA interviews in study one. The SIS was not retained alongside the new measure as there was concern that the peers would not be able to complete three questionnaires (including the CATCH) within the allocated time. See appendix 4.18 for further reasons for why the SIS was not used in study two.

The Social Networks and Friendship Survey (SNFS, Kasari et al., 2011, see appendix 5.6) was the sociometric measure selected for use in study two. To complete the measure, participants firstly identify which of their classmates they enjoy spending time with. Next, they indicate which three of those classmates they like the most, and, of
those, which one is their best friend. Secondly, they list those classmates they don’t enjoy spending time with. Thirdly, they group together those classmates who they think enjoy spending time with each other. From this information it is possible to calculate the total number of received friendship nominations (indegrees), the total number of outward friendship nominations (outdegrees), the level of social rejection (rejects), the number of reciprocated friendship nominations (friendship reciprocity), and finally a student’s prominence in the overall classroom structure (social network centrality). Thus, it gives a comprehensive picture of a student’s sociometric status within a given class. The SNFS has been used with students with ASC and their peers in its earlier (Locke et al., 2010; Chamberlain et al., 2007) and current forms (Kasari et al., 2011; Locke, Kasari, Rotheram-Fuller, Kretzmann & Jacobs, 2012). It has also been used in a study evaluating the impact of a social-skills intervention for students with ASC (Kasari et al., 2012), which also included typical peers. A potential limitation of this measure, however, is that it has typically been used with primary, rather than secondary school, students. However, the developer of the SNFS indicated that the measure could be suitable for use with older students provided it was used with a group of peers with who the focal student spent the majority of their time (C. Kasari, personal communication, September 4th, 2013). Despite being widely used, the validity and reliability of the measure does not appear to have been reported.

TA questionnaire

The TAs completed one questionnaire: the teacher version of the Social Responsiveness Scale (SRS, Constantino & Gruber, 2005), to measure the social skills (proximal outcome) of the students with ASC. This 65-item measure provides a score of the clinical ‘scale of severity’ of ASC symptoms as they occur in natural social settings. Respondents indicate how true the behaviour in each item is of the focal student, on a scale from 1 (not true) to 4 (almost always true). The scores are added, with higher scores indicating a higher severity of social difficulties. The scale score can also be broken down into five subscales to facilitate a more nuanced analysis of intervention effects (Constantino & Gruber, 2005). These are social awareness (noticing social cues), social cognition (correctly interpreting social cues), social communication (turn-taking), social motivation (motivation to engage in social behaviour) and autistic mannerisms (stereotypical behaviour). The questionnaire was used as the basis of the TA interview (see the qualitative instruments below). This decision was based on the findings from
study one which indicated that, similar to the student interviews, a quantitative measure of the social experiences of students with ASC would be beneficial to ensure that topics relating to the outcomes of interest were covered in sufficient breadth during the interviews (see appendix 4.18). The questionnaire could also provide a clear indication of any changes in social skills between data collection points.

There are a number of measures of ASC severity available, but the SRS was selected for use for a variety of reasons. Firstly, it specifically measures the extent of the social difficulties experienced by a child or young person with ASC, rather than the presence of absence of ASC (Constantino & Gruber, 2005). As a result, it is recommended for measuring the impact of interventions over time (Constantino & Gruber, 2005), which was relevant to the aims of study two. Secondly, it is suitable for children and young people aged 4 to 18 years, making it suitable for use with the participants in study two, Thirdly, it has a teacher version which includes behaviours likely to be observed in school such as item 23 (‘does not join group activities unless told to do so’). This meant it could act as a prompt for further discussion regarding the focal student’s experiences in school. Finally, the measure has good reported internal consistency (.93-.97) and, importantly, given the multiple data collection points, has good test-retest reliability (.77-.85) (Constantiono & Gruber, 2005).

**TA and student observations**

A quantitative observation schedule was developed to capture the type and frequency of FBs used by the TAs during lessons (proximal outcome), and the level of social interaction between the students with ASC and their typical peers (distal outcome). An observation schedule similar to one used in previous research examining TA use of FBs (Causton-Haris & Malmgrem, 2005; Malmgrem, et al., 2005) had been used in study one to generate the same data, but had proved unsuccessful in this regard (see appendix 4.18). As a result, a new observation schedule was developed for use in study two, a copy of which can be found at appendix 5.7. The schedule was devised based on a design by Flanders (1970, cited in Wragg, 1994), which uses a grid-like formula to quickly and efficiently capture observational data. The FBs advocated in the TA training were listed in the left hand column of the grid, with the addition of: ‘TA sits/stands within arms reach of the student’. Whilst this was not a FB, proximity data such as this is important because closer TA proximity has been linked to more negative
social outcomes (Giangreco & Doyle, 2007), and this tends to be an approach adopted by TAs supporting students with ASC (Symes & Humphrey, 2012). Different types of social interaction, taken from a study examining the social interactions of included students with visual impairments supported by a TA (Harris, 2011) were listed in the top row of the grid. These were chosen based on the similarities between the aims and outcomes of interest of both studies. Data was collected in five-minute intervals (as per the observation schedule used in study one). Each time the TA was observed using a FB, the FB used and the resultant social interaction (if any) was recorded by placing a mark in the box where the observed FB and type of social interaction intersect. In this way, the link between the FB used and the resultant social interaction was maintained, which had not been possible with the observation schedule used in study one.

Session checklists
Session checklists were used to generate data to address both aims of study two. The session checklists used in study one were used in study two (see section 4.1.4, and appendices 4.12, 4.13 and 3.5), although some minor adjustments were made due to changes in session content. The data generated was used to assess adherence and dosage of the essential programme elements received, and this data was also incorporated into the findings regarding the efficacy of RESII. This is important given that intervention outcomes are in part influenced by the amount of RESII participants receive (Domitrovich, & Greenberg, 2000), including those used with students with ASC (Mandell et al., 2013). Overlooking this would therefore limit any conclusions that could be drawn regarding RESII’s impact on the targeted proximal and distal outcomes.

Qualitative instruments
Fieldnotes
Qualitative fieldnotes were kept to complement the session checklists. They generated contextual data to better explain the levels of adherence and dosage to the essential programme elements. The fieldnotes were largely kept in the same way as they were in study one (see section 4.1.4), although their remit was expanded to include participant engagement data and participant comments relating to the perceived effectiveness of RESII. This was to better establish the appropriateness of RESII, something which had been difficult to do in study one (see appendix 4.18). This method was favoured over more direct measures of gaining participant feedback (e.g. through the use of evaluative
questionnaires or interview questions) as it was possible that participants may have been biased given that the researcher also delivered RESII (Field & Hole, 2003). For more on the tensions of the dual role of the researcher, see appendix 5.8.

Peer posters

Peer posters were used to measure peer awareness of ASC (proximal outcome), as well as to give an indication of the appropriateness of RESII (e.g. to identify the information most likely to be recalled). As in study one, the final session of the peer-awareness campaign was used for the peers to create a poster or leaflet that could be used to educate others in their school about ASC (a sample poster can be found at appendix 4.14). The data was generated in the same way as study one (see section 4.1.4), since study one findings had indicated that they were a satisfactory source of data.

Student interviews

Structured interviews were conducted with the students with ASC to generate qualitative data about their social skills (proximal outcome) and their social support, social acceptance and social interaction (distal outcomes). A structured approach was adopted since semi-structured interviews had been trialled in study one with limited success (appendix 4.18). It was therefore decided that the interviews would be structured around a quantitative measure of the social experiences of students with ASC. The interviews were structured around the CSESIP, (see the quantitative measures section, above). The CSESIP served as an interview guide. The researcher read each question aloud, and then prompted the student for further information, based on the answers they had given. Typically, this involved asking them to recall real-life experiences of the social situations depicted in the questionnaire items. Any changes in item ratings between data collection points were also explored in detail.

TA interviews

Structured interviews were conducted with the TAs to generate data about the social skills (proximal outcome) and the social support, social acceptance and social interaction (distal outcomes) of the focal students with ASC. A structured approach was adopted since semi-structured interviews had been trialled in study one with limited success (see appendix 4.18). As with the student interviews, the decision was made to structure the TA interviews around a quantitative measure of the social experiences of
students with ASC. The interviews were structured around the SRS, (see the quantitative measures section, above). The researcher read each item aloud to the TAs, and prompted them to expand on their answers where appropriate. If any issues regarding the focal students’ social experiences were identified, the researcher would probe the TAs to identify the strategies they employed, or thought they could employ, to resolve these issues. Any changes in item ratings between data collection points were also explored in detail.

5.1.4 Procedure
The procedure for study two was largely the same as the procedure for study one, and thus an overview can be found in section 4.1.5 (note, different measures were used across the two studies). Due to the RCT, crossover waitlist design adopted in study two, however, there were a few minor changes. Once consent had been obtained at the school and parent level, the schools were randomly allocated to either RESII or control condition, with two schools in each condition. The researcher’s supervisor block randomised (Suresh, 2011) the schools by pulling school names from a hat and alternately assigning them to either condition. The two schools allocated to RESII condition (school one and school two) received RESII first. Study two lasted for a total of 34 weeks, including two, two-week school holidays. Time one (T1) data collection was carried out at all four schools prior to RESII beginning in schools one and two. When RESII was finished in the first two schools, the schools ‘crossed over’, at which point schools three and school four received RESII and the first two intervention schools acted as a follow-up group. Time two (T2) data was collected in all four schools prior to RESII starting in schools three and four, and again at time three (T3), when RESII was finished. Table 5.5 depicts the timeline of study two. Information regarding how research quality was ensured across time and school can be found at appendix 5.8.
### Table 5.5 An Overview of Study Two

<table>
<thead>
<tr>
<th>Month</th>
<th>Week</th>
<th>School 1</th>
<th>School 2</th>
<th>School 3</th>
<th>School 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 2013</td>
<td>1-2</td>
<td></td>
<td></td>
<td>Time 1 data collection</td>
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<tr>
<td></td>
<td>3-4</td>
<td>Abby</td>
<td>Kate</td>
<td></td>
<td>Treatment as usual</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Susan</td>
<td>Lynette</td>
<td></td>
<td></td>
</tr>
<tr>
<td>October 2013 - November</td>
<td>5-12</td>
<td>Social skills group and peer</td>
<td>Caroline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>November 2013</td>
<td></td>
<td>awareness campaign</td>
<td>James</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jonathan</td>
<td>John</td>
<td></td>
<td></td>
</tr>
<tr>
<td>December 2013</td>
<td>13-16</td>
<td></td>
<td>Break/Christmas holiday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>January 2014</td>
<td>17-18</td>
<td></td>
<td>Time 2 data collection</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>19-20</td>
<td></td>
<td>Treatment as usual</td>
<td>Julie</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Alfie</td>
<td>Thomas</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandra</td>
<td>Betty</td>
</tr>
<tr>
<td>February 2014 - March</td>
<td>21-28</td>
<td></td>
<td>Social skills group and peer</td>
<td>Kevin</td>
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</tr>
<tr>
<td>March 2014</td>
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<td>awareness campaign</td>
<td>campaign</td>
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<td>Khalid</td>
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<td>Adbul</td>
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</tr>
<tr>
<td>April 2014</td>
<td>29-32</td>
<td></td>
<td>Break/Easter holiday</td>
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<td></td>
<td>33-34</td>
<td></td>
<td>Time 3 data collection</td>
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<td></td>
</tr>
</tbody>
</table>
5.2 Results

Once study two had finished, data were analysed in line with the two aims guiding the study. The first aim of study two was to gather further information regarding the feasibility of implementing RESII in a mainstream school, including data on RESII’s appropriateness. Data relating to the adherence and exposure to the essential programme components, and participant perceptions of RESII, are presented in section 5.2.1. The second aim of study two was to draw some initial conclusions regarding the impact of RESII on the targeted proximal and distal outcomes. Data relating to the efficacy of RESII is presented in section 5.2.2. Supporting quotes and extracts are used throughout this section. Due to the variety of data collection methods, number of participants, and length of the study, quotes are identified firstly by the source of the quote (e.g. fieldnotes or interview), then by which student with ASC it involves and/or who the quote is from, followed by the time the quote is from (i.e. which week of the study). For simplicity, pseudonyms are used throughout this section for key participants, such as the focal students with ASC and their TAs (listed in table 5.3). In all other cases, participants are identified through their relationship to the focal student with ASC (e.g. ‘peer of William’).

5.2.1 Feasibility and appropriateness

In line with the first research question guiding this thesis, data from intervention session checklists, fieldnotes and student and TA interviews were combined to ascertain the extent to which RESII was implemented as intended. As with study one, feasibility was determined through examining the levels of adherence and exposure to the essential programme components (presented in table 3.3), as well as the acceptability of RESII to the participants. Data pertaining to these elements are presented below, organised around the three components of RESII.

Adherence

The level of adherence to each part of RESII in study two is described below. Data for each student are presented, and these findings are then combined to identify common themes between the participants. In this way, common facilitators and barriers to implementation are identified. The adherence to the social-skills group is considered first.
Social-skills group

On average, 97% of the Attention Autism sessions that ran (for discussion of the number of sessions that took place, see exposure, below) included the three, core parts. Thus, the 80% fidelity threshold was reached for this essential programme element. The guidelines were adhered to in approximately 67% of the sessions that ran, meaning the 80% threshold wasn’t reached for this essential programme element. Just three of the seven social-skills groups that were set up included typical peers, meaning this essential programme component was only achieved in 43% of cases. Thus, just one of the essential programme components for the social-skills group was delivered with fidelity. The information for each student is displayed in table 5.6, organised by school.

Table 5.6 Adherence to the Attention Autism programme (in sessions that took place)

<table>
<thead>
<tr>
<th></th>
<th>School 1</th>
<th>School 2</th>
<th>School 3</th>
<th>School 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group includes typical peers</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Percentage of sessions where group guidelines adhered to</td>
<td>100</td>
<td>80</td>
<td>50</td>
<td>N/A</td>
</tr>
<tr>
<td>Percentage of sessions where all three core parts of Attention Autism session delivered</td>
<td>95</td>
<td>100</td>
<td>100</td>
<td>N/A</td>
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</tbody>
</table>

Only three of the social-skills groups included typical peers, making this the essential programme component with the lowest fidelity. Jonathan, Caroline and Khalid’s groups included typical peers, and these students also spent almost all of their time in school with typical peers. Thus, it seems that for this component to be adhered to, regular interaction with typical peers as part of the school day is key. This is highlighted by James and John, who both belonged to a nurture group, and whose social-skills groups did not include typical peers. This decision was made by their class teacher, in part because the two boys rarely interacted with typical students outside of their nurture group, and the class teacher did not know of other, suitable students to include in the group (fieldnotes, week 2). However, Kevin and William spent the majority of their time with typical peers, yet they were not included in their social-skills groups. This
was because the school had already planned to begin a social-skills group for students with ASC and/or social difficulties and permission for these students to be withdrawn from their lessons to attend the group had already been received (fieldnotes, week 17). The key contact at the school therefore felt that it was best to proceed with the preselected group. This is similar to James and John’s groups, where the class teacher wanted other students from the nurture group to benefit from RESII (fieldnotes, week 2). Thus, it is likely that current levels of need and provision for students with social difficulties at a school or class level, may impact the extent to which RESII can be implemented as intended.

There were eleven sessions in which the Attention Autism guidelines (see appendix 3.2) were not adhered to. Four of these occasions involved the researcher not following the guideline ‘maintain attention at all times’ and this seemed to be because the activities were not entertaining enough to keep the students sufficiently focused. Observations of this include: ‘They were not engaged with the fortune teller activity e.g. they did not pay attention to the student demonstration and did not want to do the task. They wanted to do origami instead…this activity was not attention grabbing enough’ (Fieldnotes, William, week 26) and, of the same activity in another group: ‘It was difficult to keep them entertained during the fortune teller activity and this is perhaps because it doesn’t follow the principles of Attention Autism (fieldnotes, Kevin, week 26).

The next most common guidelines not followed were related to the behaviour of the other adults supporting the group (n=4). On two occasions, one TA did not adhere to the guideline that all adults supporting the group had to ‘look interested in activities’ and ‘show enjoyment in activities’. For example: ‘Thomas was in the room but didn’t take part until the flour drawing activity’ (fieldnotes, Khalid, week 19). On another two occasions, TAs did participate, but they used excessive questioning and/or addressed minor behavioural issues: ‘Betty was supporting, but she was more of an observer. She told students off whenever they engaged in behaviour they shouldn’t be’ (fieldnotes, Khalid, week 24), and ‘Different TA to previous two weeks. She got into the activities well, but used questioning and disciplinarian language’ (fieldnotes, James, week 8). In the last two examples, problems seemed to arise because different TAs would support the group each session, and the researcher did not have time to train them. Thus, as with study one, lack of training for the adults participating in RESII was a barrier to
implementing the social-skills group as intended. However, whilst the training and behaviour of TAs could impact on the extent to which the guidelines were adhered to, so could their absence. There were four occasions where the behavioural guidelines weren’t followed by the researcher, and three of these occurred when there was no supporting TA present. Typically, disruptive behaviour from students was not ignored by the researcher as much as it could have been, such as: ‘The group seemed quite chaotic, noisy…felt it was hard to focus on the positive behaviours today because the group seemed so hyperactive…I was probably focusing more on the negative behaviour than I should have been.’ (fieldnotes, Kevin, week 21). On one occasion, this focus on negative behaviour resulted in the situation escalating, until one student was removed from the group: ‘the [getting into the zone] activity deteriorated into the boys throwing ice at each other. I had to ask Ibrahim to leave.’ (fieldnotes, Caroline, week 8).

**Peer-awareness campaign**
Just three of the seven peer-awareness campaigns were delivered to the peers with whom the focal students spent the majority of their lessons, meaning that this essential component was adhered to in just 43% of cases. On average, the script was adhered to 76% of the time, with a total of nine sessions delivered without 100% fidelity. Thus, adherence to the essential programme components of the peer-awareness campaign was not achieved with fidelity. The information for each student is displayed in table 5.7, organised by school.

<table>
<thead>
<tr>
<th>School 1</th>
<th>School 2</th>
<th>School 3</th>
<th>School 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jonathan</td>
<td>Caroline</td>
<td>James</td>
<td>John</td>
</tr>
<tr>
<td>Delivered to peers with whom focal students spend the majority of time</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Percentage of sessions where script was adhered to</td>
<td>86</td>
<td>40</td>
<td>71</td>
</tr>
</tbody>
</table>

The peer-awareness campaign was delivered to the teaching groups of James, John and Khalid. In all other cases it was delivered to the student’s form group. The class teacher
of James’ and John’s class had control over the content of their students’ educational provision, and had the flexibility to rearrange their students’ timetables if necessary. Thus, they were able to make time for the peer-awareness campaign to be delivered (fieldnotes, Lauren, week 2). This was in contrast to the key contacts at schools one and three, who were not able to find time for the campaign to be delivered during lesson time due to curriculum demands (fieldnotes, Debbie, week 1; fieldnotes Jemma, week 2). It was possible to deliver the peer-awareness campaign to Khalid’s teaching group during their Religious Education (RE) class, but this was because it was felt that intervention in this class was greatly needed. There was a great deal of friction between Khalid and his classmates in this class, as Khalid was often offensive to other students about their religious beliefs (fieldnotes, Betty, week 1). The class teacher was therefore open to the peer-awareness campaign being delivered during their lesson time. Thus, as with the social-skills group, current need and provision for students with ASC influenced the extent to which the peer-awareness campaign could be delivered as intended.

As noted at the start of this section, nine of the peer-awareness sessions were conducted without fidelity. The only reason for the researcher not adhering to the script and delivering all aspects of each session was that the researcher ran out of time. This was typically because the peer group became disruptive or uncooperative (n=7) e.g. ‘…the children were very unsettled when I arrived, and did not engage with the lesson…we could not do the whole-class feedback because it took them too long to do the task and also they weren’t listening’ (fieldnotes, Caroline, week 9). This tended to be more likely if the teacher was not in the room whilst the session was being delivered: ‘…the teacher left the room and they all started talking, moving to sit next to their friends and not focussing on the work’ (fieldnotes, Jonathan, week 10). Indeed, the teacher in Caroline’s group only spent one whole session in the classroom, which could account for the low fidelity in her class. On two occasions, technical issues increased the length of time spent on some activities, meaning not all activities could be completed within the given period. As with study one, support from class teachers seemed key to adhering to the session scripts with fidelity.
**TA training**

All of the TAs supporting five of the eight students with ASC received the TA training. Thus, fidelity to this essential programme element was achieved 62.5% of the time. The TA training was delivered on a one-to-one basis for six of the eight students, meaning fidelity for this essential programme element was achieved in 75% of cases. All of the TA training content was delivered to all TAs, resulting in 100% fidelity to this essential programme element. Overall, the TA training was delivered with moderate levels of fidelity. The information for each student is displayed in table 5.8, organised by school.

Table 5.8 Adherence to the TA training

<table>
<thead>
<tr>
<th>School 1</th>
<th>School 2</th>
<th>School 3</th>
<th>School 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jonathan</td>
<td>Caroline</td>
<td>James</td>
<td>John</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Kevin</td>
<td>William</td>
<td>Khalid</td>
<td>Abdul</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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</table>

All TAs supporting focal student receive training

<table>
<thead>
<tr>
<th>All TAs supporting focal student receive training</th>
<th>Yes</th>
<th>Yes</th>
<th>No</th>
<th>Yes</th>
<th>Yes</th>
<th>No</th>
<th>No</th>
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TA training delivered one-to-one

<table>
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<tr>
<th>TA training delivered one-to-one</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>No</th>
<th>No</th>
<th>Yes</th>
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Percentage of content delivered as intended

<table>
<thead>
<tr>
<th>Percentage of content delivered as intended</th>
<th>100</th>
<th>100</th>
<th>100</th>
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All of the TAs supporting Jonathan, Caroline, John, Kevin and William received the TA training. Only one of the two TAs supporting James was trained due to the other TA being absent during the week when the training took place (fieldnotes, James, week 3). Similarly, only one of the two TAs supporting both Khalid and Ahmed received the training, and this was because the other TA could not attend due to staff shortages (fieldnotes, Khalid, week 20). Thus, availability of staff seemed to be a key determinant of whether a TA received the training. The TA training was delivered on a one-to-one basis in all cases apart from the TAs for Kevin and William. The key reason for this was that there were no TAs specifically designated to work with the two students, and they were supported by a number of TAs throughout the school day. The key contacts at the school therefore felt that all TAs would benefit from taking part, as they may all come into contact with the students at some point (fieldnotes, Jemma & Carly, week 20). This was a total of seventeen TAs. In order to train them all within the allotted period (i.e. before the rest of RESII began), it was necessary to train them in groups. Thus, the training was delivered to three groups of four and one group of five. As shown in table
5.8, the content of the TA training was delivered with 100% fidelity. However, it is important to note that although all training content was received, the length of time spent on the content was shorter for the TAs supporting Kevin and William. This was because there was not adequate time to complete it (only 30 minutes per session, see exposure, below), and this was exacerbated by the fact that it was not delivered on a one-to-one basis, meaning there was less time for individual TAs to discuss content in full (fieldnotes, school three, week 21).

Exposure

The level of exposure to each part of RESII in study two is described below. Data for each student are presented in table 5.9. The data from the fieldnotes and session checklists are then used to examine the exposure in more detail, and potential barriers and facilitators to fidelity are discussed. Exposure to the social-skills group is considered first.

<table>
<thead>
<tr>
<th>Table 5.9 Exposure to the essential programme components</th>
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<tr>
<td>School 1</td>
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Social-skills group

Overall, exposure to the social-skills group was 58%, and fidelity was only achieved for three of the eight students. The students received an average of 4.6 of the eight Attention Autism sessions each, with only 37 of a potential 64 sessions being delivered. William was the only student to receive all eight sessions, whilst John and Abdul received none. The primary reason for missing sessions was student absence (n=11). John missed all eight of his sessions because he did not attend school for the entire time.
that RESII was running (fieldnotes, weeks 3-12). Caroline missed the last two sessions because she, like John, stopped coming to school (fieldnotes, weeks 11-12). Kevin missed his first session because he was ill. Finally, Abdul missed all eight sessions because his class teacher withdrew him from the study. She was not happy for Abdul or his peers to miss lessons to attend (fieldnotes, week 20). Teacher opinion also influenced the number of sessions that Khalid received. Half of Khalid’s sessions were not delivered because time was only given for four sessions to run (fieldnotes, week 20). This was because both the social-skills group and the peer-awareness programme had to be delivered during the same, one-hour lesson each week. Furthermore, the class teacher felt that it would be disruptive for the researcher to talk to the class for 20 minutes each lesson, as this would not leave him enough time to cover the work he needed to. In addition he felt that taking the social-skills group out for half of each lesson would also be disruptive. Thus, it was agreed that the peer-awareness campaign would be delivered in three, one hour sessions, and the social-skills group would be delivered in four, one hour sessions to avoid the disruption of students coming in and out of the class and/or stopping and starting class activities (fieldnotes, Khalid, week 19). Finally, Jonathan and Caroline each missed a session due to a suitable room not being available to hold the social-skills group, and James missed one session due to the school being closed.

Peer-awareness campaign
Overall, exposure to the peer-awareness campaign was 64%, and fidelity was only achieved for three of the eight students. Peers received an average of 5 of the 8 peer-awareness sessions, and none of the classes received all eight sessions, with 41 of a possible 64 sessions being delivered (please note, exposure was only measured at the whole-class level. Data for individual students within a class is not known). The main reason for a session not being delivered was a lack of time (n=10). Abdul’s class teacher could not identify a suitable time for his class to receive the peer-awareness campaign, and thus none of the eight sessions were delivered. Khalid’s class received their sessions as three, one-hour lessons, rather than eight separate, shorter ones. However, due to the teacher performing administrative tasks at the beginning of each session, it was not possible to deliver three sessions per hour, and therefore, only six sessions were received overall (fieldnotes, weeks 21 and 23).
Changes to the session content, or schedule, due to school requirements was the second main reason for a session not being delivered (n=8). For example, Kevin and Williams’ classes both missed the seventh session because the key contact at the school felt that the posters made in session 8 would be a useful resource for the school, especially as they coincided with ‘autism awareness day’. Therefore, she requested that they spend two, rather than one, session making these (fieldnotes, Jemma, week 25). Caroline’s class missed one session due to them attending an assembly (fieldnotes, week 6), and Caroline’s and Jonathan’s peers both missed one session to attend a reward breakfast and another because the school closed early due to structural damage (fieldnotes, weeks 7 and 9). Finally, James’ peers missed one session due to RESII starting a week later than planned. This was requested by the teacher as she wanted to wait until the second student, John, returned to school before starting RESII (fieldnotes, week 3). In line with this, student absence was the second main reason for a session not being delivered, (n=5). As mentioned earlier, John did not attend school for the entire term in which RESII took place, and his teacher withdrew him (and, subsequently his class) from RESII at the end of the third week. Therefore, his peers only received the first three sessions.

The peer-awareness campaign was delivered in weekly, 20-minute sessions for six of the seven students whose classes received it. Jonathan and Caroline’s classes had RESII during their weekly PSHE lessons. This lesson was dedicated to the personal, social and health education of students, and content of the campaign fitted well with its focus. Jonathan’s class received RESII for the first 20 minutes of the one-hour long lesson, and Caroline’s for the last 20 minutes. For James’ class, the class teacher decided to withdraw them from their weekly drama lesson to receive RESII, and she gave up 20 minutes of her own English session for John’s class. Kevin and William’s peers received RESII once a week during their daily, 20-minute registration period, a time typically devoted to pastoral activities. Khalid was the only student whose peers did not receive the campaign as intended. Instead, they had three, one-hour lessons, with two of the eight sessions being delivered in each lesson. This was due to the reasons mentioned above (the class teacher felt that the shortened, weekly sessions would be too disruptive).
TA training

Overall, 92% of the TAs supporting the focal students with ASC received the TA training, with 23 of a possible 25 TAs participating (although only 9 took part in the study). Staff absence (n=1, fieldnotes, James, week 3) and limited availability (n=1, fieldnotes, Khalid, week 20) were the reason why two of the TAs did not receive the training. All but two of the TAs trained supported both students with ASC from their school participating in the study. These two TAs were both from school two. The average time spent on the training was just under one hour (54 minutes), which well below the intended duration of four hours. The reason for this was that either a large number of TAs needed to be trained (school three) or staff could not be released for longer due to them being needed to support students in lessons. To the researcher’s knowledge, all but two of the TAs left at the end of the school day, meaning opportunities for longer training sessions then were not available. The two TAs who stayed longer were in school two, and they both stayed behind for 30 minutes after the end of the school day. However, this time was spent making phone calls to parents, writing student behaviour reports and preparing materials for the following day. As a result, this time was also unavailable for staff training. Towards the end of RESII period, school three held a whole-staff training session about ASC. The researcher was invited to present during this session, but the TAs were not present for this. Overall, then, time was the biggest barrier to ensuring participants were exposed to this essential programme component with fidelity.

Appropriateness

To address the limited data regarding the appropriateness of RESII to its intended participants collected in study one, appropriateness was considered in more detail in study two (see appendix 4.18). Appropriateness was conceptualised as the attitudes of participants towards RESII, including its perceived effectiveness (quality of delivery) and the extent to which participants engaged in RESII (participant responsiveness). Both quality of delivery and participant responsiveness are types of procedural fidelity that are concerned with how well essential programme elements have been delivered in practice (Dane & Schneider, 1998; Kaderavek & Justice, 2010). This is important as examining structural fidelity (such as adherence and exposure to essential programme elements) alone is limited in that it only indicates how much of an intervention was delivered, but not how it was received by the recipients. An intervention that can be
implemented with structural fidelity may be of little use if it is not acceptable to participants, something which is often overlooked in intervention studies, including those with students with ASC (Reinchow & Volkmar, 2010). Accordingly, data pertaining to the appropriateness of RESII is discussed is this section, organised by intervention component. Data is drawn from fieldnotes and interviews.

Social-skills group
There was limited data regarding the perceived effectiveness (quality of delivery) of the social-skills group. James’ TA observed that the students in his group ‘worked together really well…’ (interview, Kate, week 18) and in school three, a change in the behaviour of one student with ASC (albeit not a focal student) was attributed to the social-skills group: ‘Jemma and Carly said they had never heard Kieran talk so much and make jokes before. They said the change in him in the group is dramatic’ (fieldnotes, peer of William, week 21).

Focal students themselves did not necessarily feel that the social-skills group had affected their social life. For example, Jonathan felt that although he’d enjoyed the group, he hadn’t made any new friends as a result of it, or strengthened existing friendships:
Interviewer (I): The group that we had in here each week. What did you think about that?
Jonathan (J): It was good
I: Did you make any new friends in that group, or were you already friends with those people?
J: Already friends
I: Do you feel you’ve become better friends with any of them?
J: No
I: Do you speak to them a bit more now in class?
J: No
(interview, Jonathan, week 18)

However, the participants and key school staff seemed to have a positive attitude towards RESII. It was felt that the students particularly enjoyed attending the Attention Autism sessions: ‘They are really loving the groups…they are always coming and
pestering me to find out when the group is’ (fieldnotes, Debbie, week six). Debbie later wrote in an email to the researcher: ‘I never really seem to have time to properly say thank you for all you are currently doing with our pupils, but you have been wonderful!!!!’ (fieldnotes, school one, week 13). The key contacts in school three felt similarly: ‘Jemma and Carly said the boys are all really enjoying the group, because it is different. They are interested in keeping it going after I leave.’ (fieldnotes, school three, week 20). The students themselves also seemed to be positive about the group: ‘I reminded him [William] to come to the social group and he said ‘I won’t forget. When it comes to that group, I’ve got the memory of an elephant.’ (fieldnotes, William, week 20). James, however, did not seem to enjoy all of the sessions and felt that ‘some of them were boring’ (interview, James, week 18).

In terms of the extent to which participants engaged in the social-skills group (participant responsiveness), all participants attended 69% of the Attention Autism sessions, and all participants attended 24 of the 37 Attention Autism sessions that were delivered. Jonathan’s group had the highest attendance, with 86% of the students attending all sessions. Of this group, the researcher noted that: ‘The students always appear keen to attend – they remember to come down from their lessons and Joe reminded Jonathan to come…’ (fieldnotes, Jonathan, week 18). William and Khalid’s groups had the lowest level of participation at 50%. The main reason for students not attending was being absent from school (n=9) or participating in other activities (n=2), e.g. ‘Only Luke, Khalid and Jermaine attended the group as the other two boys were showing year six students around the school’ (fieldnotes, Khalid, week 26). The remaining two occasions were due to participants choosing not to attend, as the following two quotes illustrate: ‘Only Tom, Cody and Caroline in the group today. Connor didn’t want to come…’ (fieldnotes, Caroline, week nine). ‘John decided not to come. He told Wesley he didn’t want to come’ (fieldnotes, William, week 22).

The peers enjoyed the activities during the sessions: ‘During the flour drawing, Keziah said [to the researcher] ‘thank you so much for this!’’ (fieldnotes, Jonathan, week 10). ‘They all really liked the lava lamps and wanted to take them home’ (fieldnotes, James, week five). The focal students with ASC were also engaged in the sessions: ‘Khalid appeared excited about the activity [making a lava lamp] and was one of the first to complete his lava lamp once they were all having a go. They all experimented with
different colours and lemonade, salt and oil combinations…and showed each other them.’ (fieldnotes, Khalid, week 25). However, although there was evidence that the participants were engaged in the sessions, this was not always the case: ‘John did the demonstration, and, as with Kevin’s group, it was hard to get them to concentrate…Wesley and Callum were looking something up on Callum’s phone’ (fieldnotes, William, week 23). Furthermore, some activities were not enjoyed by all group members: ‘Sam and Jason did not enjoy the drumming activity. They put their drumsticks down and discussed with each other that it was too loud. I switched so that we hit our chairs, rather than the table, but they still didn’t want to join in.’ (fieldnotes, Kevin, week 22). James in particular often did not engage with the group: ‘David and James sit together and…generally ignore the rest of the group’ (fieldnotes, James, week eight) or the sessions themselves: ‘James didn’t want to do the group – he said he found it boring. We compromised and said that the group would be shorter today’ (fieldnotes, James, week nine).

Peer-awareness campaign

With regards to quality of delivery, some participants felt that the peer-awareness campaign had been effective, and were able to give examples of this. For example, James’ TA, Kate, felt there had been a change in the behaviour of James’ class as a result of taking part:

Kate (K): I thought it was good for [James] because a lot of people were interested in autism but he wasn’t comfortable to tell them what it is, so it was nice for them to be able to understand…I think it was good for them, so they might have a better understanding of him. So I do think that’s helped.
I: … Have you ever heard any of them talking about it?
K: No, I just think there have been certain situations where someone may have said something, maybe they’ve looked backed and thought ‘that’s why’, because you gave examples, do you know what I mean? And I know people would label these as quite challenging children, but they are quite sensitive to other people, so I think that that’s helped.
I: So could that be why the teasing has gone down?
K: I think it must have helped in some way a little bit, maybe.
(interview, Kate, week 18)
This sense of increased understanding was mirrored in William’s group, with his TA, Alfie noting that ‘I’ve noticed Alex, who sits behind him, interacting with William, speaking to him a bit more, but as for the others, they’re all in their own little groups…I think they’re probably a bit more aware, if he ‘goes off on one’…if he gets angry and he has to like leave the room…now they understand why he’s got angry or why he’s gone out, whereas before they would have thought “why’s he got angry over that?”…But now I think they’d probably think “oh William, he’s like that”…’ (interview, Alfie, week 34). There was however concern that the content of the peer awareness campaign may have been upsetting to some students with ASC. One example came from Joe, a student in Caroline’s form group (and also a participant in Jonathan’s social-skills group). He told the researcher that Caroline ‘was upset by the sessions on autism and that “it made her feel like she had something really bad”.’ (fieldnotes, Caroline, week 14). Concerned, the researcher spoke to the key contact at the school, who reassured her that this had not contributed to Caroline’s absence from school in the last two weeks of RESII. Rather, the key contact felt that her absence was due to the onset of puberty (fieldnotes, Caroline, week 14). Some of the students participating in the campaign, however, also had concerns that RESII wasn’t having the intended impact. ‘Jason said that the people in his class weren’t taking the stuff in my sessions seriously and that as soon as they leave the classroom they forget it. He said they have made comments like “it can’t be that bad” or “it can’t be a real thing” and he wants to scream ‘I’ve got it!’’ (fieldnotes, peer of Kevin, week 22). Jason was a student with ASC who was also part of Kevin’s social-skills group and peer group.

There was evidence that the teachers of the classes receiving the peer-awareness campaign viewed it positively. In school one, Jonathan’s class teacher told the researcher that ‘the class were “really enjoying” the sessions.’ (fieldnotes, Jonathan, week six). The researcher also noted that the class teacher was ‘keen to be involved in session seven [the positive side of autism] and suggested setting the class a task for homework, such as finding the positive side of autism’ (fieldnotes, Jonathan, week six). This was backed up by a comment from Debbie, the key contact at the school, who told the researcher that: ‘the form tutors are really positive about the sessions and believe it should be done in every form in the school’ (fieldnotes, school one, week six). A TA at the same school was also very positive: ‘A TA who is often in Jonathan’s class said that
she found last week [week five] really helpful, especially the video…she felt that all forms and staff should watch it. She recommended that another TA who supports a student with ASC also watch it.’ (fieldnotes, school one, week six). It was reassuring that students with ASC could also relate to the session content: ‘William asked me some questions after we watched the video [about ASC] about what scientists know about what causes autism. He then told me that his brother has Asperger’s and that a lot of the things on the video reminded him of his brother. He also related to the special interests.’ (fieldnotes, William, week 20). A student in Kevin’s class felt similarly: ‘Jason said that he could relate to the children in the video, especially the fact that the hardest part of autism is that nobody understands it.’ (fieldnotes, peer of Kevin, week 20). Although he didn’t feel he’d learnt anything new, Jonathan felt that it ‘wasn’t a bad thing’ that his class had been learning about the condition (interview, Jonathan, week 18). Some typical peers also seemed to find the information contained in the sessions interesting and relevant: ‘On their way out, one pupil said ‘That was interesting’’ (fieldnotes, Khalid, week 20).

With regards to participant responsiveness, there was evidence of participant engagement in the peer-awareness campaign. Data from the fieldnotes indicated that peers did engage with the content of the sessions. For example, they remembered what had been taught: ‘The class seemed to remember what I had told them before about dyslexia’ (fieldnotes, Jonathan, week six), they paid attention: ‘They watched the video very attentively’ (fieldnotes, Jonathan, week six) and participated in activities: ‘Four pupils, including three who have autism were actively participating in the discussion’ (fieldnotes, William, week 24). Student’s also linked the material covered in the sessions to their own personal experience: ‘At the end [of the session] a student described a pupil from her primary school who she now thinks might have autism, and another girl in the class agreed’ (fieldnotes, James, week eight). Engagement was particularly strong in Kevin’s class. This engagement was attributed to the attitude of the class teacher: ‘Teacher seems supportive of [the researcher] and kept class on task. They all took part in the activity and three pupils were especially vocal during the class feedback’ (fieldnotes, Kevin, week 18). ‘Teacher stayed in the room and the class were quiet whilst I was talking, and raised their hands to ask questions.’ (fieldnotes, Kevin, week 19).
The peers used post-it notes (see section 5.1.4) to ask an average of 2.6 questions per session. Jonathan’s group asked the most questions, with an average of 4.1 per session, and James’ the least with an average of 1.1. The session that generated the most questions was session two with an average of 4 questions per class and the session that generated the least was session one with an average of 2.2 questions per class. In absolute terms, sessions two and three generated the most questions (28 and 18 questions respectively) and it is in these sessions that ASC is first introduced, along with the distinction between hidden and visible disabilities. It is perhaps unsurprising then that the majority of questions asked focused on ASC (n=68). These questions ranged from understanding how someone develops or is diagnosed with the condition: ‘can people catch it?’, ‘how do you get diagnosed with autism?’, to understanding the impact ASC can have on a person’s education: ‘do people with autism need extra help in their lessons?’, ‘do teachers know how to deal with people with autism if they get angry?’, as well as their later life: ‘is there a cure?’, ‘does it affect your life in the future?’. There were also questions about the experience of having autism, such as: ‘will people with autism get annoyed if people get better things than them?’, ‘do people with autism feel unwanted most of the time?’. The number and focus of the questions was taken as an indication that the peers engaged with the content of the peer-awareness campaign.

There was however also evidence that participants weren’t always engaged in the sessions. The key way this was demonstrated was not participating in the class discussions: ‘The students were very unsettled when I arrived, and they did not engage in the lesson. Only about four students seemed to be listening and responded to my questions.’ (fieldnotes, Caroline, week 11). On some occasions, peers did not complete activities set by the researcher: ‘A lot of talking whilst I was talking. All students did complete the sheet, but only three appeared to be taking it seriously, and only these three contributed to the group discussion’ (fieldnotes, James, week 12). They sometimes engaged in other activities instead: ‘Half the class weren’t engaged in the lesson. Two of them were doing a jigsaw…’ (fieldnotes, James, week 12), or made negative comments: ‘There were two students making comments like ‘who cares?’ throughout the presentation’ (fieldnotes, James, week 11). A lack of engagement may have resulted in participants struggling to recall the information presented to them: ‘They couldn’t remember what we’d done last week…’ (fieldnotes, William, week 22). Alarmingly,
there were two occasions when the focal students with ASC were upset by the content of the sessions, as described in the following two extracts: ‘Caroline left half way through [the session]. She apparently had asked not to come in as she didn’t like hearing about autism. She had cried [before the lesson]…her TA and teacher took her outside to discuss and Caroline went back in. I told the teacher that she doesn’t need to be there, and if she feels uncomfortable then she shouldn’t be there’ (fieldnotes, Caroline, week nine). Another example came from one of James’ sessions: ‘The question was: ‘would a person with autism be a good friend? And when one pupil answered she said ‘no, because…’ and James shouted at her ‘shut up!’ and put his head in his hands and then said ‘I have autism so shut up!’ (fieldnotes, James, week 8).

**TA training**

As with the social-skills group, data relating to the quality of delivery of the TA training was limited. James’ TA, Kate, however, did report finding the training useful, and this seemed to be especially as she was very new to the role when RESII started:

I: You said that’d you asked questions about James when you first got here…
K: I was asking questions, if I needed to know anything, or if his behaviour was a little bit unusual to what I’m used to…but then, we did the training, and there are certain things I would recognise, and I could deal with that, without having to find things out myself.
I: Did it change anything about how you worked with James?
K: Yeah, I think it gave me a little more understanding because I knew about autism, but it’s the approach, I genuinely didn’t know about needing to tell them about facial expressions, and telling them how to communicate with people. That’s something that I never knew, so that’s helped a lot.

There were other positive comments about the TA training. For example, one TA from school three told the school SENCo that the training was “revolutionary” and “better than anything she’d ever had” (fieldnotes, school three, week 19). Likewise, Debbie, the key contact in school one, emailed the researcher to say that the TA training had ‘gone really well, and you have been wonderful with my staff.’ (fieldnotes, Debbie, week one).
Aside from the notes on which parts of the TA training was delivered (presented earlier in section 5.2.1), fieldnotes were not kept after each TA training session. It was therefore not possible to establish participant responsiveness to the TA training itself. An alternative approach to establishing participant responsiveness was to capture the extent to which the TAs made use of, or referred to, the training as part of their daily practice. Referring to the training could indicate that the TAs had responded favourably to the training, and regarded it as relevant and valuable to their role. Use of the FB strategies hand out would also indicate participant responsiveness. Interview extracts indicated that at least one of the TAs responded well to the training, and that for one the impact on practice was limited. Susan, one of the TAs from school one, was able to give clear examples of how she had made use of the training, as the following interview extract demonstrates:

Susan (S): When he moved technology to the new one [class], I went to the teacher and I said “I’ve had this advice, and I don’t want to sit next to him, can we put him between some people who will be alright with it?” So we have, so he’s on the front row, he’s sat between two girls… and the nicer of the girls I said to her “if there’s a problem, I’m over here.”” (interview, Susan, week 18).

This quote shows her making use of two of the FBs (not sitting next to the student with ASC, and matching them with peers who can support them). This conscious use of strategies also extended to other students she works with:

I: And has there been anything else, where you’ve done things differently?
S: Yeah, I was supporting another student with autism and he likes me to sit next to him, but I was trying to give him less input, I was asking him questions, I was getting him to talk and give me answers rather than just telling him what to write…with another pupil I’ll sit next to him and set him off, and then I’ll go around the class…I’m not physically plonking myself next to him…I’m leaving him. Like I say, I’ve seen the difference and I’ve felt the difference in how I think about things when I go in [to a classroom], so it’s made a difference to me. (interview, Jonathan’s TA, week 18).
Conversely, it appeared that for Abby, a TA at the same school, the training had not had a clear impact on practice. Firstly, she did not regularly refer to the strategies handout given to her at the end of the training session:

I: You know the training that I did with you? I see that you’ve still got your [strategies card, (which could be seen in the TAs diary)]…

Abby (A): I still do, yeah!

I: So, I was just wondering if anything about the way you’ve been working with Jonathan or any of the students with autism, has changed in any way?

A: I can remember when you gave me this [strategies card] and I remember thinking to myself ‘I kind of what do that naturally’ So I kind of just keep it in there, I’ve not looked at for a while actually…do you mind if we have a quick look at it now just for a reminder? (interview, Abby, week 34)

Although the training did not seem to impact on her practice per se, she still felt that there had been some value in the training, specifically reaffirming that she was doing the right things, and giving her a space to think about her practice:

I: I’m interested in how useful you think the training was? Anything you took away from it?

A: Yeah definitely. I felt like I was doing some of this anyway, so it was reassuring to know that I was doing the right thing. And just anytime you do get to reflect, because it’s so busy, you don’t get the time to reflect, and I know that I have this to look back on [strategies card]. I also know that I’ve got you to speak to if I need to, and I’ve got your contact details as well. So I do think it’s useful. It’s a shame that we just focus on Jonathan, when there are other children that I think it would be more useful with.

I: So although you don’t think it was useful for Jonathan, do you think it might be useful for some other kids in the future?

A: Definitely, because I’m using it with that girl I told you about (interview, Abby, week 34).

**Summary**

A key aim of study two was to further establish the feasibility of implementing RESII within a mainstream secondary school setting. Overall, the findings showed that no focal student or school received RESII in its entirety, nor were any of RESII
components delivered with fidelity. The main reasons for the lack of adherence and exposure to RESII were current levels of perceived need and provision, and limited time. With regards to the former, perception of need at either a school or class level was a big factor in determining who took part in the social-skills group, who received the peer-awareness campaign and who participated in the TA training. In cases where need was seen as high (e.g. in school three where a number of students were perceived as needing social-skills training), the current provision to meet that need determined how RESII was implemented (e.g. by including students with social skills difficulties in the social-skills group, instead of typical peers). However, even when perceived need was high, this did not always mean RESII could be implemented, as in the case of Abdul. Although he was experiencing social challenges, his class teacher did not want Abdul or his peers to miss curriculum content to take part in RESII. Available time was therefore also crucial for determining the extent to which RESII was implemented as intended (e.g. whether time could be found for the peer-awareness campaign to be delivered to a student’s teaching group). Seemingly, the extent to which RESII can be implemented as intended is dependent on the extent to which the social inclusion of students with ASC is prioritised at a school or class level. With regards to appropriateness, data was limited regarding participant views on the effectiveness of RESII, but what data was available suggests that RESII was in general well-received by participants, and participants engaged with RESII activities. However, there were concerns that students with ASC (including those who were not focal students in the study) may have been made uncomfortable by the content of the peer-awareness sessions. This is worrying, since one of the main considerations when developing the campaign was that students with ASC would not be identified, or experience discomfort, as a result of their peers receiving the training. Thus, whilst generally acceptable for use in mainstream secondary schools, the findings presented here suggest that changes to RESII’s content and implementation strategy are required if it is to be more feasibly and appropriately implemented in its intended setting. The implications of these findings are discussed in more detail in chapter 6.

5.2.2 Initial efficacy of RESII

Aside from determining the feasibility and appropriateness of RESII, a second aim of study two was to draw some initial conclusions regarding RESII’s efficacy. Specifically, it sought to examine whether RESII resulted in the expected proximal and
distal outcomes. Evidence pertaining to the proximal outcomes (social skills, peer awareness and TA use of FBs) is presented first, followed by the distal outcomes (social support, social acceptance and social interaction). Whilst eight students were the focus of this intervention, outcome data is only presented for the four students for whom sufficient data was collected to determine efficacy, namely Jonathan, James, Kevin and William. In total, there were 30 potential data collection points per student over the course of the study. A cut off of 50% was decided, whereby only students who had data for at least half of these points were included in the analysis. However, although Khalid met this requirement, with 60% of his data collected, he was not included in the final analysis as he had no outcome data at time three (T3), meaning there was no way to assess the impact of RESII on him. The available outcome data for each student is presented in table 5.10.

![Table 5.10 The outcome data collected from/about the students with ASC](image)

In total, 58% of the intended data was collected (n=140). Withdrawal from the study (i.e. John and Abdul) accounts for half of the missing data (n=50). Failing to collect data within the scheduled period accounts for just over a quarter of the missing data...
(n=30), followed by student absence (n=18). The final two pieces of missing data were due to students not wanting to participate in data collection (n=2). The outcome data for Jonathan, James, Kevin and William is presented below, organised around the targeted proximal and distal outcomes. Jonathan and James received RESII between time one (T1) and two (T2). Kevin and William received RESII between T2 and three (T3). Thus, at T2, Kevin and William act as a control group for Jonathan and James, and at T3, Jonathan and James’ data pertains to the maintenance of intervention impact. Due to the small sample size, descriptive, rather than inferential, statistics are primarily presented, and qualitative data is used to support and expand on these statistics.

**Proximal outcomes**

*Social skills*

Data relating to the social skills of the focal students with ASC was generated through the SRS and the student and TA interviews. SRS scores for each student at each data collection point are presented in table 5.11

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Time</th>
<th>Jonathan</th>
<th>James</th>
<th>Kevin</th>
<th>William</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social awareness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1</td>
<td>67</td>
<td>48</td>
<td>40</td>
<td>65</td>
<td></td>
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<tr>
<td>T2</td>
<td>67</td>
<td>48</td>
<td>55</td>
<td>65</td>
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<tr>
<td>T3</td>
<td>50</td>
<td>52</td>
<td>43</td>
<td>62</td>
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<tr>
<td>Social cognition</td>
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<tr>
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<tr>
<td>T3</td>
<td>45</td>
<td>42</td>
<td>37</td>
<td>69</td>
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<tr>
<td>Social communication</td>
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<tr>
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<tr>
<td>T3</td>
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<td>Social motivation</td>
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<tr>
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<td>T3</td>
<td>54</td>
<td>37</td>
<td>42</td>
<td>67</td>
<td></td>
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<tr>
<td>Autistic mannerisms</td>
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<tr>
<td>T1</td>
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<tr>
<td>T2</td>
<td>73</td>
<td>45</td>
<td>49</td>
<td>69</td>
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<tr>
<td>T3</td>
<td>52</td>
<td>45</td>
<td>45</td>
<td>77</td>
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<tr>
<td>Total score</td>
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<tr>
<td>T1</td>
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<td>44</td>
<td>44</td>
<td>74</td>
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<tr>
<td>T2</td>
<td>74</td>
<td>43</td>
<td>45</td>
<td>71</td>
<td></td>
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<tr>
<td>T3</td>
<td>54</td>
<td>44</td>
<td>39</td>
<td>72</td>
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</tbody>
</table>

* <60 = normal, 60-75=mild-moderate, >75 = severe

Overall, the total SRS scores changed very little between T1 and T2 for students in both the control and intervention groups. Jonathan showed the biggest change, with his score falling from the severe range to the mild-moderate range following intervention,
indicating a clinically significant improvement in his social skills. Although at T2 Jonathan’s TA was only supporting Jonathan ‘about twice a week’ (interview, Jonathan’s TA, week 17), she had noticed two key changes in Jonathan’s behaviour. Firstly, she felt he was ‘… more accepting of people around him’, for example when engaging in group activities: ‘…I’ve seen him sit with other people. If they sit with him, he’ll accept it’ or interacting with his peers: ‘He’s a bit more open…in the past he’d just say something stupid, but now he’ll actually answer [his peers’] questions.’ This links to the second change the TA observed, which was a reduction in inappropriate behaviour, such as shouting things out in class: ‘I don’t know what it is, but Jonathan has settled down. At least for me.’ and ‘He’ll still be silly. It’s still there but not as much…he’s just stopped.’ When pressed to identify a reason for this change, Jonathan’s TA felt that RESII may have played a role: ‘You should take a bit of credit, because he has changed.’ Of further note is the fact that the TA had seen a change in Jonathan’s joint attention, a skill specifically targeted by RESII: ‘…there was this really naughty girl, she was constantly sticking her head in the classroom…I told him to get back on with his work and he was like ‘no’. He would look where everyone else was…He enjoyed that.’ Interestingly, Jonathan did not identify any major changes in his social functioning himself (see table 5.17) and, as shown previously in the appropriateness section, he did not feel his social life had changed as a result of RESII.

The improvement in Jonathan’s social skills continued at T3, with Jonathan’s total SRS score falling to the normal range. Similar to T2, Jonathan had continued to make gains in his social interactions with peers, and appropriate behaviour. With regards to the former, a big change was that he now had friends: ‘He does have friends…he can get on with people…I definitely think he’s got friends’ (interview, Jonathan TA, week 32). This was in contrast to T2, when his TA observed ‘I wouldn’t say he’s got friends, but he’s got people he can have a joke with and a laugh with. But not friends.’ (interview, Jonathan TA, week 17). Furthermore, it was reported that he now spent break and lunchtimes with his friends in the main part of the school, rather than in the Special Educational Needs (SEN) room, as he had done previously: ‘I’m in the SEN room on lunch duty and I never see him in there…I’ve not seen him in there for ages. So that’s a good thing.’ His behaviour was regarded as being more appropriate overall, and any inappropriate behaviour was attributed to him occasionally being in ‘a silly mood’,
rather than a common occurrence. Again, as with T2, Jonathan did not report changes in his own social functioning.

Neither Kevin nor William had notable changes in their total SRS score at T3 following intervention. However some of William’s subscale scores did change. Firstly, William’s Social Communication subscale score fell from the severe to the mild-moderate range. One notable change was the extent to which he avoided eye contact in social situations. At T2, his TA felt that he almost always avoided eye contact, but at T3, this lack of eye contact was only limited to certain situations: ‘…if it’s a confrontational [situation] then he will avoid. But if you’re just having a normal conversation, he’s getting better at it’ (interview, William’s TA, week 34). Another change was that, similar to Jonathan, his behaviour was being regarded as more appropriate. Whilst at T2 William’s TA felt that he didn’t know ‘how to play’ appropriately (interview, William’s TA, week 18), at T3 his TA reported that ‘He’s quite normal…he interacts just as anyone his age would’.

Another change was in the extent to which he participated in, or was a victim of bullying. At T2 he was teased a lot, but this was attributed to his own behaviour: ‘It’s him…he’ll walk past somebody and he’ll come out with a comment waiting for them to react…’ At T3, however, it was felt that his peers were more likely to instigate teasing: ‘If he gets an answer wrong or something then their might be a little bit of sniggering and that…cos he doesn’t like getting it wrong.’ Overall, however, it was felt that the teasing was comparatively low-level and infrequent, and not a cause for concern.

William’s Social Motivation score increased from normal at T2 to mild-moderate at T3. Increases in this subscale seemed to be due to changes in his dependency on adults, and avoiding conversations. With regards to the former, at T2, William’s TA did not think that William was too dependent on the adults supporting him. In fact, she felt that he preferred to be alone: ‘I’ll go up to him and say ‘do you want me to sit with you or do you not?’ and he’ll, 9 times out of 10, go ‘no I don’t’’ (interview, William’s TA, week 18). However, at T3, it seemed that William had become particularly dependent on the key contacts at the school, often wanting to go to them if he encountered any difficulties: ‘He doesn’t play on it, but knows…if he’s doing something wrong, then he’s got somewhere to go where they’ll hear a different side of the story (interview, William’s TA, week 34). In a similar vein, at T2, William ‘didn’t specifically avoid’ social interactions, but at T3 he was likely to avoid conversations with adults, but only
if he didn’t want to get into trouble: ‘If there’s homework or something, and he hasn’t done it…he’ll just ignore you and pretend he hasn’t heard you…It’s like it’s not happening!’.

Finally, William’s Autistic Mannerisms score rose from the mild-moderate to the severe range following intervention. This in part was due to him developing the unusual sensory interest of ‘picking his nose’ at T3, and finding it harder to cope with changes in routine. Whilst this didn’t present a problem at T2, at T3 this was seen as a concern: ‘In PE…they were doing dodge ball and he didn’t mind that… then cos the summer term came they had to do athletics, he didn’t like that…he didn’t like the change.’ Interestingly, William perceived an improvement in his self-efficacy for social interaction over the same period, and this seemed to be due to the development of two friendships with peers from his form. Whilst at T2 he spoke of friends and social experiences he had had at primary school, at T3 he spoke of more recent social activities such as eating school lunch together, or going out at the weekend: ‘Me, Joel and Nathanial went out last Saturday…we went to McDonalds and bought a few things.’ (interview, William, week 34). Further discussion of these changes are presented in the social support and social interaction sections.

Overall, based on the SRS scores, RESII did not appear to have a clear impact on social skills either directly following RESII, or at follow-up. It is not clear why Jonathan displayed the greatest change in social skills, although overall his group had the highest level of adherence to the essential programme elements of the social-skills group. Specifically, unlike the other three social-skills groups, his group included typical peers. It is possible that exposure to these role models resulted in the observed improvements. William’s SRS scores were concerning, given that his Social Motivation and Autistic Mannerisms worsened following intervention. Interestingly, William himself felt that he was better at social interaction at T3, and had developed some friendships. A possible explanation for the discrepancy between the TA’s and William’s accounts is that a different TA completed the SRS and interview at T3, as the TA interviewed at T2 was no longer able to support William as a result of complaints about her practice when working with students with ASC (fieldnotes, William, week 25).
**Peer awareness of ASC**

Data relating to peer awareness of ASC was generated through the CATCH and the peer posters about ASC. The CATCH scores gave an indication of peer attitudes towards students with ASC, whilst the peer posters generated data regarding the level of peer knowledge of ASC. Mean CATCH scores and standard deviations for each focal student’s peer group at each data collection point are present in table 5.12.

<table>
<thead>
<tr>
<th></th>
<th>T1 (SD)</th>
<th>T2 (SD)</th>
<th>T3 (SD)</th>
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<tbody>
<tr>
<td></td>
<td>n=21</td>
<td>n=19</td>
<td>n=24</td>
</tr>
<tr>
<td>Jonathan</td>
<td>18.05</td>
<td>18.11</td>
<td>16.58</td>
</tr>
<tr>
<td>James</td>
<td>17.25</td>
<td>16.30</td>
<td>20.75</td>
</tr>
<tr>
<td>Kevin</td>
<td>21.86</td>
<td>20.00</td>
<td>23.00</td>
</tr>
<tr>
<td>William</td>
<td>20.53</td>
<td>18.50</td>
<td>18.40</td>
</tr>
</tbody>
</table>

All four peer groups started RESII holding moderate attitudes towards students with ASC. On average, Kevin’s group had the most positive attitude, whilst James’ had the least. There was a significant difference in peer attitudes between the intervention classes and control classes at T1, *t*(60)=-2.16, *p*<.05. Since there was no significant difference between the individual class scores at T1, *F*(3,58)=1.69, *p*>.05, the remaining analysis was conducted at the class, rather than treatment group, level. At T2, all mean CATCH scores decreased apart from those of Jonathan’s peers, which increased slightly following intervention. There was no significant difference between the individual class scores at T2, *F*(3,56)=.758, *p*>.05. The patterns of findings was more mixed at T3, with Jonathan’s and William’s scores decreasing and James and Kevin’s increasing. There was a significant difference between the individual class scores at T3, *F*(3,62)=4.25, *p*<.05. A 4 x 3 factorial ANOVA was conducted, with class as the between-group factor, and time as the within. There was a significant main effect of class, *F*(1,51)=5.370, *p*<.05. Post-hoc, pairwise comparisons showed that the mean attitude scores of Jonathan’s peers were significantly different from those of Kevin’s peers (*p*<.05). No other class differences were significant. There was no significant main effect of time, *F*(2,51)=.339, *p*>.05. There was no significant interaction between class and time (2,51)=.985, *p*>.05. Thus, receiving the peer-awareness campaign did not seem to significantly influence peer attitudes towards ASC.
In session eight of the peer-awareness campaign, peers were asked to design a poster or leaflet to educate other students in their school about ASC. In addition to this purpose, the amount and type of information included on these posters was used as a measure of peer knowledge of ASC. Unfortunately, only Kevin and William’s classes completed this session (for further information on exposure to RESII, see section 5.2.1), thus only their class data is presented here. William’s class included an average of 6 pieces of information about ASC per poster/leaflet, whilst Kevin’s group included 4.5 pieces. The most commonly included pieces of information, along with the number of students who included that information is presented in table 5.13. Overall, information regarding the three core impairments of ASC (social interaction, social communication, social imagination) was included most often (n=60). This information included reference to the impairment itself (e.g. ‘think differently’) or reference to a behaviour or potential challenge related to that impairment (e.g. ‘hard to make friends’). There were fewer negative messages (n=5) than positive ones (n=11), but there was variation in the extent to which all messages were included. For William’s group, both the fact that ASC is a hidden disability, and the prevalence of the condition featured highly in the posters, but this was not the case for Kevin’s class. Similarly, William’s class did not include information about the aetiology and prognosis of ASC, but these featured often in the posters from Kevin’s class.
Table 5.13 The number of students including relevant information on their posters

<table>
<thead>
<tr>
<th></th>
<th>Kevin</th>
<th>William</th>
<th>Indicative quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spectrum disorder</td>
<td>0</td>
<td>7</td>
<td>‘You get a strong or a mild autism’</td>
</tr>
<tr>
<td>Prevalence</td>
<td>2</td>
<td>9</td>
<td>‘Autism is a disability which one in a hundred children will have’</td>
</tr>
<tr>
<td>Born with it/no cure</td>
<td>11</td>
<td>0</td>
<td>‘Autism is something that some people have when they’re born, and they have it through life’</td>
</tr>
<tr>
<td>Hidden disability</td>
<td>3</td>
<td>10</td>
<td>‘Autism is a hidden disability. You can not see it on the outside. You can only tell by the way that they act.’</td>
</tr>
<tr>
<td>Social interaction</td>
<td>9</td>
<td>11</td>
<td>‘Hard to make friends’</td>
</tr>
<tr>
<td>Social communication</td>
<td>7</td>
<td>11</td>
<td>‘Hard to talk to people’</td>
</tr>
<tr>
<td>Social imagination</td>
<td>8</td>
<td>14</td>
<td>‘Think differently’</td>
</tr>
<tr>
<td>Strategies to support students with ASC</td>
<td>2</td>
<td>9</td>
<td>‘Appear friendly and approachable, it really helps!’</td>
</tr>
<tr>
<td>Positive messages</td>
<td>1</td>
<td>10</td>
<td>‘People with autism are quite amazing. They can smell things that you maybe can’t. They can also see, touch and hear stronger’</td>
</tr>
<tr>
<td>Negative messages</td>
<td>1</td>
<td>4</td>
<td>‘Some people with autism have anger issues’</td>
</tr>
</tbody>
</table>

Although limited by the sample size, the information included in the posters indicated an understanding of ASC, in particular the impairments at the core of the condition. A broader range of information was included than in the posters in study one (see table 4.5), indicating that the changes to the peer-awareness campaign made as a result of study one had had an impact. It is not clear, however, why peers in William’s group tended to include more information in their posters than students in Kevin’s group, nor why their posters had more positive statements. Both classes had the same exposure to RESII (7 of the 8 sessions), and Kevin’s class had a higher level of adherence to the essential programme elements. One explanation is that as William’s group were a year older than Kevin’s group, they had a more mature understanding of ASC. Another explanation is that because of the additional year’s experience with William in their class, they were more aware of the condition. This could not be tested, since prior knowledge of the condition was not measured.
**TA use of FBs**

Data regarding TA use of FBs was generated from observation schedules, fieldnotes and TA interviews. Table 5.14 displays the type and frequency of FBs used by the TAs across the three data collection time points, for each focal student. The first row of the table shows the percentage of times the TA was observed not using a FB and sitting/standing within close proximity to their focal student (e.g. sitting next to the student but not encouraging interactions with peers). The percentage of time TAs were observed engaging in FBs is presented in the second row of the table, and this is followed by the average number of times the TAs were observed engaging in the different categories of FBs per observation, namely ‘step back’ ‘prompt’ and ‘match with classmates’ (see appendix 5.7 for further information regarding the specific FBs recorded).

Table 5.14 Type and frequency of FBs used by the TAs across the three data collection time points

<table>
<thead>
<tr>
<th></th>
<th>Jonathan</th>
<th>James</th>
<th>Kevin</th>
<th>William</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T1</td>
<td>T2</td>
<td>T3</td>
<td>T1</td>
</tr>
<tr>
<td>% close proximity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>37</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>% FBs</td>
<td>39</td>
<td>42</td>
<td>40</td>
<td>46</td>
</tr>
<tr>
<td>Mean ‘Step back’ per observation</td>
<td>1.8</td>
<td>1.3</td>
<td>1.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Mean ‘Prompt’ per observation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean ‘Match with classmates’ per observation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Excluding Jonathan’s, all TAs reduced the percentage of time they were in close proximity to the focal student following intervention. For Jonathan, the percentage of time increased slightly following intervention, but decreased at T3 to lower levels than T1. Although William’s TAs reduced their proximity following intervention, the percentage of time sat close to William at T3 was higher than it had been at T1. The percentage of time spent using FBs showed a similarly mixed pattern of results:
Jonathan’s and William’s TAs increased the percentage of time they used FBs following intervention, whilst James’ and Kevin’s TAs decreased theirs, although at T3 James’ TA spent a greater proportion of time engaged in FBs than at T1. Of the FB categories, ‘step back’ was by far the most likely to be used, albeit even these were likely to be used in small numbers only, with a range of .5 to 3.2 of these FBs used per 30 minute observation period. Only William’s TAs used more of this strategy directly following intervention.

There are a number of possible reasons for this mixed and unexpected pattern of results. Firstly, although all of the observed TAs received the training, different TAs were observed supporting Jonathan, Kevin and William throughout the study, and they were not all observed at each time point. Thus, it was not possible to map the trajectories of individual TAs, and individual differences in baseline functioning may have masked intervention effects. However, James was only supported by one TA throughout the study, and improvements were still not consistently observed. This was despite the TA having found the training helpful (see section 5.2.1). Another reason is that on a number of occasions, TAs engaged in behaviour that was not a FB, such as simply standing at the back of the classroom, away from the focal student (fieldnotes, Jonathan, week 9). This data was coded as ‘other’ and was not included in the table above, but it is possible that the TAs regarded this as a FB (since they were not sat in close proximity). Thus, if these were included in the FB category, it is likely that increases would have been observed. However, since this is purely speculative, this data is not presented here. A final, and perhaps more pertinent point is that none of the TAs were exposed to the training for the intended duration (see section 5.2.1). It is possible that the training session was too short to produce observable, long-term change in TA behaviour.

Summary
Alongside establishing feasibility, a second aim of study two was to examine whether RESII had the intended effect on the targeted proximal and distal outcomes. This section has presented the data relating to the three proximal outcomes, namely social skills, peer awareness and TA use of FBs. Overall the findings present a mixed picture, with there being no one outcome for which all students showed consistent improvement. However, it was promising that although small, gains were generally greatest following the intervention, rather than control, condition. Unfortunately, RESII’s impact on the
focal students’ social skills was limited, with the exception of Jonathan, whose TA reported clinically significant improvements in his social skills between T1 and T2. Data from the CATCH suggested that the peer awareness campaign had a limited impact on peer attitudes towards the condition. The posters produced by the peers of Kevin and William however, indicated an awareness of the condition, but a lack of a pre-intervention measure of awareness limited the extent to which positive conclusions could be drawn. Finally, TAs did appear to reduce the extent to which they sat or stood in close proximity to the focal students following intervention, but this was not met with an increase in use of FBs, with the mean number of FBs actually decreasing in some cases. A possible explanation for this is that different TAs were observed at different times, and therefore the findings may not reflect the individual trajectories of each TA. The implications of these findings for the design and development of RESII are discussed in more detail in chapter 6.

Distal outcomes

Social support

Data relating to the social support of the focal students with ASC was generated through the SFNS and the TA and student interviews. Data regarding the number of friends each focal student identified from their peer group (indegrees) and the number of peers who nominated the focal student as their friend (outdegrees) was generated from the SFNS. It had been hoped that it would also be possible to calculate the percentage of reciprocated friendships, particularly with regards to students who were identified as ‘best’ friends. However, this was not possible due to large amounts of missing data. Table 5.15 shows the number of inddegrees and outdegrees for each student at each data collection point.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Time</th>
<th>Jonathan</th>
<th>James</th>
<th>Kevin</th>
<th>William</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indegrees</td>
<td>T1</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Outdegrees</td>
<td>T1</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Looking at the inddegrees scores, Jonathan identified four friends fewer within his peer group following intervention, whilst James identified three more. Furthermore, Jonathan
wasn’t nominated as a friend by any of his peers at T2, whilst James’ outdegrees score didn’t change. The scores for Jonathan from T1 reflect his TAs observation that initially Jonathan did have friends, albeit his friendship group was limited: ‘There is a group and he’ll make friends with them but not outside of that, in the general population.’ (interview, Jonathan’s TA, week 1). Jonathan declined to be interviewed at T1, so this could not be confirmed by him. However, the decline in Jonathan’s indegrees and outdegrees score at T2 reflect his TAs comments that he didn’t have any friends at that time (see social skills section). Jonathan did identify three peers with whom he liked to eat lunch at school at T2 (interview, Jonathan, week 17) but these students were not in his form group and could not be included on the scale. The increase in James’ indegrees score at T2 was also acknowledged by his TA who felt that he had ‘bonded quite closely’ with at least two of his peers who received the peer-awareness campaign, and that the group as a whole had developed stronger friendships: ‘at the beginning of September, they were all kind of all over the place but since then, they all kind of developed little groups, I don’t know whether that’s with the age or whether it’s based on…people are recognizing positivity in people and they wanted to stick with that?’ (interview James’ TA, week 18). Although this timeline coincided with the implementation of RESII, the TA did not identify RESII as a potential cause for this change (‘I have no idea’), so it was not possible to draw conclusions about RESIIs potential impact. Interestingly, James himself did not identify any new friends when he was interviewed at T2 (week 18).

At T3, Jonathan nominated the most friends, and received the most friendship nominations. His indegrees and outdegrees scores were both higher than at either T1 or T2. Again, this was supported by his TA’s observation that Jonathan had more friends at T3 (see social skills section), but not by Jonathan himself who, when asked who his friends were, replied ‘I don’t know’, and did not feel he had made any friends as a result of RESII (interview, Jonathan, week 32). It is perhaps unsurprising that Jonathan had more friendship nominations at T3, since his social skills had improved by this time point too, and, as shown in the social skills section, he had become more receptive to his peers. Unlike Jonathan, James nominated fewer friends than at T2, but more than at T1, whilst he received his lowest number of friendship nominations at T3. James’ TA didn’t notice a decrease in James’ friendships at T3, but she stated that James was being kept away from two of his friends in the class as: ‘the three of them together, they do get
themselves into quite a bit a bother. So we do separate them in class anyway, they are not to sit with each other when I’m here…’ (interview, James’ TA, week 32). It is possible this influenced the friendship nominations scores, although the teacher acknowledge that ‘when they are outside, it’s freedom time.’, implying that they could still spend time together then if they wished.

Kevin’s indegrees score rose at T2 and again at T3, whilst his outdegrees score rose at T2, but remained stable at T3, following intervention. These findings are largely inline with Kevin’s interview comments. Across all three time points, he identified himself as being popular e.g. ‘I’m like really popular, everyone’s friends with me.’ (interview, Kevin, week 2), but at T1 he only identified one friend by name (Ethan, who was in his form group, as well as the social-skills group). However, at T2 he was able to identify two other peers from his form with whom he was friends, and this was mirrored by his TA who felt that: ‘I think he’s making friends now. I think he’s able to make friends’ (interview, Kevin’s TA, week 18). Both Kevin and his TA reported Kevin as having more friends at T3. Speaking of the friends he ate lunch with, Kevin said that at the start of the school year he had typically sat with ‘normally a teacher, one of my friends, and another friend, and yeah that was it…’, but since the start of the intervention period, he felt that more friends were sitting with him ‘Everyone who's like friends in my form and people from lessons who I'm friends with [are sitting with me]…I wonder what it’s going to be like in year 10!’ (Interview, Kevin, week 34). His TA felt the same: ‘he does have now a group of children who are friends with him and he's more than happy just to be with them to eat lunch’ (interview, Kevin’s TA, week 34). Overall, it seemed that Kevin’s social support had increased following intervention.

At T2, William’s indegrees score rose slightly, but remained the same at T3, whilst his outdegrees score fell at T2, but rose again at T3, following intervention, although it was still not as high as it had been at T1. This was partially mirrored in William’s interviews, where he identified himself as having more friends at T2 than at T1. At T1, he noted that he had a few friends, with whom he ate lunch, but at T2 he said he had ‘loads’ of friends (interview, William, week 18). William’s TA, however, did not agree that he had friends at T2, perhaps explaining the 0 outdegrees score he received at T2: ‘I really don’t think he has any friends at all’ (interview, William’s TA, week 18). At T3, William identified three students from his form group with whom he was friends, and
with whom he spent time with outside of school (see social skills section), and these same friends were identified by his TA: ‘they’re in the same form…he’s been interacting with them out of school, he’s been going out with them on weekends’ (interview, Steven’s TA, week 34). A possible explanation for his T3 outdegrees score being lower at T3 that at T1, despite having identified friends within his form, is that he may have alienated peers earlier in the school year. At T1, William’s TA noted that: ‘there’s other people in the class that want to be his friend, but he keeps on referring to them as dead goats and things like, so I don’t think he wants to have friends.’ (interview, William’s TA, week 2). William’s low outdegrees score at T3 is more puzzling given that in their posters, William’s group listed a number of positive statements about ASC, especially compared to Kevin’s class. Thus, whilst William’s outdegrees score increased following intervention, it is unclear why this score was still lower than at T1.

Overall, the mixed impact of RESII on social support is perhaps unsurprising, given the minimal impact the peer-awareness campaign had on peer attitudes towards, and understanding of, ASC (see the peer awareness section above). Furthermore, for Jonathan, Kevin and William, RESII was delivered to their form groups, a group of students with whom they do not spend the majority of their time. It is possible that there simply had not been the opportunities to develop friendships in these groups. Nonetheless, overall, the students seemed to end the study period with more friends than they started with.

Social acceptance

Similar to social support, social acceptance was measured using the SFNS and the TA and student interviews. With regards to the SFNS, two scores were of particular relevance, namely the number of peers who identified the focal students as someone they didn’t enjoy spending time with (rejects) and the relative social standing of the focal students within their peer group (social network centrality). Scores for both of these variables for each participant at each time point are presented in table 5.16. References to social acceptance and bullying in the TA and student interviews were sought to complement this data.
Table 5.16 Number of rejections and overall social network centrality

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Time</th>
<th>Jonathan</th>
<th>James</th>
<th>Kevin</th>
<th>William</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rejects</td>
<td>T1</td>
<td>5</td>
<td>0</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Social network centrality</td>
<td>T1</td>
<td>Secondary</td>
<td>Nuclear</td>
<td>Isolated</td>
<td>Nuclear</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>Isolated</td>
<td>Nuclear</td>
<td>Peripheral</td>
<td>Isolated</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>Secondary</td>
<td>Nuclear</td>
<td>Nuclear</td>
<td>Nuclear</td>
</tr>
</tbody>
</table>

As with the other outcomes presented in section 5.2.2, there was a mixed pattern of findings for social acceptance. Jonathan’s rejects score fell by 1 at T2 following intervention, whilst James’ increased by the same amount. Kevin’s rejects score decreased at T2, but increased again at T3 following intervention, and William’s rejects score increased at each time point. Both Jonathan’s and James’ rejects score remained stable at T3. With regards to social network centrality, Jonathan became isolated after RESII, meaning he was not regarded as part of any social cluster within his form group, but he returned to secondary status at T3, meaning he was considered well connected within the classroom structure at the end of the study. James’ already had the highest level of social network centrality at T1, and he remained at the nuclear level throughout the study, meaning he was considered a central member of his peer group. Kevin showed the most marked change in social network status, starting as isolated at T1, and finishing as nuclear at T3 following intervention. Finally, William’s social network centrality decreased to isolated at T2, but returned to nuclear finishing intervention.

Thus, no student finished the study isolated, and three students ended as ‘popular’ members of their peer group. Friendships were explored in the social support section, and changes to the number of nominated friendships would undoubtedly have influenced the level of social rejection experienced by the focal students with ASC. To examine their social status in more detail then, experiences of bullying are considered here as an additional indicator of the extent to which the focal students were accepted by their peers.

Contrary to the SFNS findings, Jonathan’s TA regarded Jonathan as being equally isolated at T1 and T2. At T1, she felt that his peers spoke badly of him: ‘It’s mostly not directly to his face but people in his class, they do say a lot of things about him.’ (interview, Jonathan’s TA, week 1). This was attributed to Jonathan’s own behaviour: ‘…because he’s so stupid and does the most inappropriate things. He doesn’t help
himself.’ This seemed to be a similar situation at T2, where the TA listed some of the things Jonathan’s peers said about him: ‘He’s mental. He’s stupid. Is there something wrong with him? When they’re put in groups and then they groan when they’re with him because they know it’s going to be tough to work with him.’ (interview, Jonathan’s TA, week 17). Interestingly, Jonathan’s own definition of bullying was ‘being called names’ (interview, Jonathan, week 32), but he did not perceive this as happening to him at T2 or T3. In line with the SFNS findings, Jonathan’s TA did observe some improvement in the level of social acceptance at T3: ‘I think in year 7 they would comment, ‘oh god Miss, would you tell him to shut up’ and stuff like that but now, it’s not that bad… I think previously they would have regarded him as being weird and now…they sort of accept him now.’ (interview, Jonathan’s TA, week 32). It is worth noting, however, that the peers spoken about here were not necessarily those in Jonathan’s form group. Nonetheless, it seems that Jonathan’s increased social skills at T3 were matched with an increased acceptance from his peers.

It is interesting that Kevin showed the biggest change in his social network centrality, but in his and his TA’s interviews, rejection from peers or bullying were not identified as issues at any time point of the study. For example, at T1, Kevin noted that people didn’t tease him because ‘I’m very popular’ (interview, Kevin, week 2), and at T2 when asked if he was bullied he said ‘not normally no’. In order to check his understanding of bullying, he was asked explicitly if anyone ever pushed or kicked him, but again he answered ‘not normally, no’ (interview, Kevin, week 18). His TA did not believe that Kevin was regarded as odd by his peers at any data collection time point, nor did she believe he was teased by his peers. It is important to note, however, that as with Jonathan, the peers with whom the TA normally saw Jonathan interact were not those peers in his form group who received the peer-awareness campaign.

William’s scores were interesting because although his social network centrality was nuclear at T1 and T3, bullying was discussed at all three data collection time points, in both the student and the TA interviews. What varied, however, was how serious the bullying was perceived to be, and the extent to which it was regarded as happening. William felt he was bullied throughout the study. At T1, he identified bullying as a problem, and this bullying seemed to be physical in nature: ‘They try and push me around, tease me. One even tried to get me in a headlock.’ (interview, William, week 2).
The bullies seemed to be peers specifically from his own year group, and he felt that ‘everyone older than me thinks…I’m like a friend to them.’ The bullying continued throughout the study, with William able to recall specific events at T3: ‘…he emptied my bag out all over the quad once. Snapped my dinner card in half and threw it in the bin. And he took my lunch, and ran off with it.’ (interview, William, week 34), and he noted that his perceived bullies used a range of bullying methods: ‘verbal, physical... nearly all the types of bullying, they use.’ Importantly, the bullies were not from his form group. Since the problems came from outside of his form group, it is likely that William’s ‘nuclear’ status at the end of the study was limited to his form group who had received RESII, highlighting the need for other peers to be educated as well. Across all three time points, William’s TA observed that William was involved in bullying, but he was presented as either a perpetrator of bullying: ‘I’d say he was the bully. If anything.’ (interview, William’s TA, week 2) or likely to retaliate: ‘There is a bit of teasing etcetera, but I’d say he gives as good as he gets sometimes’ (interview, William’s TA, week 34). It is not clear why the views differed, and it is worth noting that the key contact at William’s school confided in the researcher that William was being bullied (fieldnotes, school 3, week 24).

Social interaction

Data regarding the quantity and quality of social interaction was generated from the CSEIP, the TA and student observation schedule, and the TA and student interviews. Subscale and total CSEIP scores are presented in table 5.17 for each student and for each data collection point.

Table 5.17 Total and subscale CSEIP scores

<table>
<thead>
<tr>
<th></th>
<th>Time</th>
<th>Jonathan</th>
<th>James</th>
<th>Kevin</th>
<th>William</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-conflict score</td>
<td>T1</td>
<td>37</td>
<td>23</td>
<td>36</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>38</td>
<td>26</td>
<td>36</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>39</td>
<td>Missing</td>
<td>31</td>
<td>33</td>
</tr>
<tr>
<td>Conflict</td>
<td>T1</td>
<td>45</td>
<td>31</td>
<td>44</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>47</td>
<td>40</td>
<td>37</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>48</td>
<td>Missing</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>Total score</td>
<td>T1</td>
<td>82</td>
<td>54</td>
<td>80</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>85</td>
<td>66</td>
<td>73</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>87</td>
<td>Missing</td>
<td>62</td>
<td>59</td>
</tr>
</tbody>
</table>

Jonathan and James showed improvements in their perceived self-efficacy for social interaction for both subscales following intervention, whilst both Kevin and William’s
scores remained the same during the same period. Jonathan’s improvements seemed to come from finding it easier to join in with games, in particular when playing students from his school online on his Xbox (interview, Jonathan, week 17). The increase in his self-efficacy corresponds with the improvement his TAs observed in his social skills, in particular in the way he related to his peers. James had a nine-point increase in his conflict subscale score, and this seemed to be due to him being less afraid of potential negative reactions from others. For example, when asked if he would be happy to intervene if two classmates were arguing over the rules of a game, he replied that this would be very easy because ‘I’ve realized that they won’t really cause a fight.’ (interview, James, week 17). Furthermore, he said that he no longer experienced bullying from other students because ‘they all love me’. However, it is interesting to note that his increased self-efficacy seemed to only apply to interactions with peers from his nurture group ‘Because I’m normally dealing with friends that I know.’ When asked about interacting with other students in his school he felt that this could be hard ‘In case, they, like, shout at me’, and that he would find such interactions ‘scary’. Although James may have felt less afraid of his immediate peers (who, incidentally, received the peer-awareness campaign), the fact that he was still unsure of students in the wider school implied that he felt he was still at risk of negative social interactions. Thus, it seems that RESII potentially had some impact on James’ immediate social inclusion, but not beyond the intervention setting.

Again, in line with his social-skills development, Jonathan’s self-efficacy for social interaction continued to increase at T3, and these changes seemed to be associated with him being more inclined to ask for help if he needed it e.g. if he was working on a project and forgot what to do: ‘I’d just ask someone’ (interview, Jonathan, week 32). Data from James was unavailable as he declined to be interviewed on the third occasion. With regards to Kevin and William, William’s self-efficacy increased following intervention, and Kevin’s decreased. As with James, William perceived that his self-efficacy had increased, but only when interacting with peers he considered to be his friends. For example, when asking if it was easy for him to join his peers for lunch, he said it was really easy ‘because we're friends now.’, but that it would be harder ‘if it's someone besides them.’ (interview, William, week 34). Other improvements seemed to be down to him having made more friends following RESII, but further questioning revealed that these were not necessarily students from his school ‘I've got lots of friends
at the Autistic Society.’ In fact, many of the examples of social interaction that William gave related to his time at a youth club for adolescents with ASC. Thus, whilst he had more friends at school following intervention (see social support, above), his greatest improvements in interaction quality were for friends outside of the school. This is in contrast to James, who’s improvements seemed to be limited only to his peers who had also received RESII.

Kevin was the only student who showed a decrease in his social interaction self-efficacy following intervention. He found a variety of social situations more difficult than at T2 and a common response was that such events could be ‘scary’. Interestingly, it is possible that his decrease was due to enhanced self-awareness. For example, when responding to one question he said ‘I sound like a right scaredy-cat, don’t I?’ (interview, Kevin, week 34). His earlier scores had been relatively high and it is possible that due to increased exposure to peers e.g. by becoming ‘nuclear’ within his peer group, he was more aware of the limits of his social skills. There was, however, no further evidence to substantiate this possible explanation.

Using the TA and student observation schedule, it was possible to identify the quantity and quality of social interactions the focal students engaged in with their peers during lesson times. The type and quality of social interaction observed for each student at each data collection point is presented in table 5.18. Since a number of selected social interaction behaviours were not observed throughout the study, and for simplicity, the different types of social interaction have been grouped into ‘academic’ interaction (interaction relating to academic activities in the classroom, such as requests for assistance), ‘social’ interaction (any positive interaction not related to classroom activities) and ‘negative’ interaction (any interaction that is verbally or nonverbally aggressive or abusive) (see appendix 5.7 for the specific behaviours listed). The latter type of social interaction was not originally included in the observation schedule, but it became apparent early on that this was a type of social interaction that was likely to be engaged in, and therefore was included in subsequent observations.
Table 5.18 Type and frequency of social interaction

<table>
<thead>
<tr>
<th></th>
<th>Jonathan</th>
<th>James</th>
<th>Kevin</th>
<th>William</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T1</td>
<td>T2</td>
<td>T3</td>
<td>T1</td>
</tr>
<tr>
<td>% no social interaction</td>
<td>63</td>
<td>37</td>
<td>55</td>
<td>31</td>
</tr>
<tr>
<td>% positive interaction</td>
<td>37</td>
<td>32</td>
<td>45</td>
<td>54</td>
</tr>
<tr>
<td>Mean ‘academic’ per observation</td>
<td>1</td>
<td>1</td>
<td>1.3</td>
<td>1.7</td>
</tr>
<tr>
<td>Mean ‘social’ per observation</td>
<td>.8</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mean ‘negative’ per observation</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

The proportion of time Jonathan spent not interacting decreased following intervention, but this seemed to be due to an increase in negative, rather than positive, interaction.

The majority of the negative interaction occurred during just one lesson, and the class teacher passed a note to the researcher which read: ‘This is not his usual behaviour in here’ (fieldnotes, Jonathan, week 17). When discussing his behaviour, which included exchanging inappropriate comments with a peer whilst other students were presenting their work, with Jonathan’s TA after class, the TA was not able to identify a reason for his negative behaviour. James engaged in proportionately more positive interaction following intervention, and showed an increase in the number of social, rather than academic, interactions. For example, during one observation, he discussed a game he had played with his sisters the night before (fieldnotes, James, week 17). It is important to note, however, that Kevin and William both showed an increased in positive interaction during the same time period. They both seemed to increase the number of social interactions, specifically (albeit this was more evident for Kevin than William). The findings that all four students showed improvements in between T1 and two is all the more interesting given the limited type and quality of FBs their TAs used during this period (see TA use of FBs section, above), and limits the conclusions that can be drawn regarding RESII’s efficacy.

At T3, Jonathan spent a greater proportion of time engaged in positive social interaction than at either T1 or T2, and no negative interaction was observed, supporting the conclusion that the negative interaction recorded at T2 was an a-typical event. James, however, engaged in no social interaction for a higher proportion of time than at T1 or
T2, and his rate of social interaction, in particular, decreased. As with Jonathan at T2, this change in positive interaction seemed to be the result of specific events occurring within the observation period, rather than a reflection of his typical social functioning. During his T3 observations, James was feeling unwell and had asked his TA to place him at the back of the classroom away from his peers, thus reducing the extent to which he was able to interact (fieldnotes, James, week 32). Following intervention, Kevin showed an increase in the proportion of time spent engaged in positive interaction, although he engaged in fewer interactions on average, especially social ones. William, conversely, engaged in more academic interaction, but also more negative interactions as well. In one particular lesson, William ended up leaving the classroom as a result of an argument with a peer that started when the peer made a negative comment whilst William was responding to a question from the teacher (fieldnotes, William, week 34). It is interesting that, despite general increases in social skills, friendships, self-efficacy for interaction, and reductions in bullying, the students were not observed consistently engaging in more positive interactions. However, a possible explanation for this is the occurrence of atypical events and behaviours during the observation period.

Summary
This section has presented the data pertaining to the distal outcomes targeted by RESII, namely social support, social acceptance and social interaction. As with the proximal outcomes, the data presents a mixed picture. In general, however, the focal students appeared to make generally positive gains following intervention, and some of these gains persisted at follow-up. Specifically, there was some evidence the focal students had more friends following intervention, a fact that was supported by their increasing centrality within the social networks of their peer groups. Furthermore, focal students tended to report less bullying, and engaged in more social interaction after exposure to RESII. The fact that these improvements were found despite the limited impact found for the proximal outcomes is, however, surprising. It is possible that the programme model underlying RESII incorrectly theorises how RESII will impact on the intended outcomes, or that there is an alternative explanation for the findings. Indeed, the fact that social interactions increased in cases where peers hadn’t received the peer-awareness campaign suggests that either peer attitudes are not as crucial as the REPIM (Humphrey & Symes, 2011) argues, or that the improvement in social skills and slight
increase in FBs may be enough to improve social interactions in the wider school population. The following chapter considers these suggestions in more detail.

5.3 Conclusion

This chapter has presented the methodology and findings of the second study conducted as part of the third step in the intervention-research framework guiding this thesis. The study aimed to provide further information regarding RESII’s feasibility. Additionally, it aimed to gather some preliminary evidence of the impact of RESII on the intended proximal and distal outcomes. Overall, the changes made to RESII following study one (see appendix 4.17) did seem to have improved the feasibility with which RESII was implemented, but overall, fidelity was still relatively low. Despite the intervention being perceived as generally appropriate by the participants, the lack of fidelity seemed to be the result of the interaction between perceived need for RESII, and the time to implement it. The changes made to the selected outcome measures following study one (see appendix 4.18) also seemed to be successful, with richer and more relevant outcome data being collected in study two. Despite this, establishing a clear picture of RESII’s efficacy was limited by the extent to which the pattern of findings differed across focal students, and by the conflicting reports from focal students and TAs. There was no one outcome where all four focal students showed improvement, but three students showed improvements in their social skills, social support and social interaction following intervention, and three of their TAs showed an increase in use of FBs and/or a decrease in the proportion of time they spent in close proximity to the focal student. Overall, Kevin and William showed the greatest improvements following intervention, and Jonathan showed improvements at follow up. James’ showed the least improvement following intervention.

Linking the feasibility and outcome data, it is perhaps unsurprising that the efficacy was not high given the fact that no one focal student received all essential programme components in the manner or dosage intended. Kevin and William showed the most consistent improvement following intervention, and they also received more of RESII than Jonathan or James. The limited use of FBs following intervention is perhaps indicative of the fact that the TA training was delivered in a much shorter time period than intended, and was delivered in groups in school three, something which had previously been identified as undesirable at the end of study one (see appendix 4.17).
Another disappointing finding was the limited impact of the peer-awareness campaign on peer attitudes towards ASC, but this is possible due to the fact that, excluding James’ class, the peer-awareness campaign was not delivered to peers with whom the focal students spent the majority of their time, although it is not clear why this would have not lead to an improvement in attitudes. Another possibility is that the questionnaire, which did not make explicit reference to ASC was not adequate for capturing changes in attitudes, an idea which is supported by the fact that even though peer attitudes did not increase in Kevin and William’s classes, the posters made by their peers demonstrated an awareness of, and, in the case of William, a positive perception of, ASC. The implications of the findings presented in this chapter for the design of RESII and the selected outcome measures are discussed in further detail in chapter 6.
Chapter 6
Discussion

‘At any point, new data may provide researchers cause to reconceptualize and return to an earlier step in the design and development process.’ (Fraser & Galinsky, 2010, p. 462)

The primary purpose of this thesis was to design and develop an intervention to address the social exclusion of students with ASC in mainstream secondary schools. The development of the intervention, named the ‘Reciprocal Effects Social Inclusion Intervention’ (RESII), was guided by an intervention-research framework that emphasised the iterative process of intervention design (see section 2.1). Accordingly, two empirical studies were conducted to assess the initial feasibility and efficacy of RESII. The first of these studies included two students with ASC from one secondary school. The primary purpose of this study was to examine whether RESII could be implemented as designed, as well as to trial potential outcome measures. The second study involved eight students with ASC drawn from four secondary schools. The purpose of this study was to provide further evidence of RESII’s feasibility, alongside initial indications of its efficacy.

This chapter provides an overview of the findings from the two studies in relation to the feasibility (section 6.1.1) and efficacy (section 6.1.2) of RESII. Limitations of RESII, and the two studies, are addressed (section 6.2), and ideas for future research are presented (section 6.3). This chapter ends with a consideration of this thesis’ contribution to knowledge (section 6.4). It is important to reiterate that, in line with recommendations from intervention-research frameworks (e.g. Campbell et al., 2000; Fraser & Galinsky, 2010), the findings from the two studies presented in this thesis were not intended to unequivocally determine the effectiveness of RESII. Fraser & Galinsky (2010) propose that a number of small-scale efficacy trials should be conducted before larger evaluation studies of an intervention are carried out, to allow an intervention to be refined. Thus, the research reported here highlights potential areas for improvement, and serves as the basis for larger, more systematic studies to be conducted in the future. Recommendations for the use of RESII in mainstream secondary school settings are therefore not made at this stage.
6.1 Overview of findings from studies one and two

6.1.1 Overview of feasibility findings

The first research question guiding this thesis was concerned with whether RESII is appropriate for use within mainstream secondary schools, and can be feasibly implemented in such settings. Appropriateness and feasibility was examined for two important reasons. Firstly, intervention-research frameworks (e.g. Fraser & Galinsky, 2010) and ASC researchers (e.g. Parsons & Kasari, 2013) emphasise the importance of developing interventions with the intended implementation context in mind. This is because for an intervention to have its desired effect, it needs to not only bring about the targeted outcomes, but also be feasible to implement in practice (McConnell, 2002). Secondly, few studies within the ASC intervention field report implementation findings, something that has been identified as a gap in the literature (Reichow & Volkmar, 2010). Since implementation data can be used to determine exactly how an intervention needs to be implemented in order to be effective (Reichow & Volkmar, 2010; Parsons et al., 2011), detailed reporting of implementation is essential during intervention development. Consequently, the two studies conducted in this thesis documented the extent to which RESII was implemented as intended. Specifically, the appropriateness of the intervention for both the intended setting and recipients, and the adherence and exposure to the essential programme elements was examined. Barriers and facilitators of implementation were also sought.

Perceived appropriateness of RESII

The appropriateness of RESII was assessed through the attitudes of participants towards the intervention, and the extent to which they engaged in it. The findings from both studies indicated that recipients and intended implementers were largely positive about all parts of the intervention. TAs and key contacts at the schools noted that the students enjoyed the social-skills group, and this was reflected in the fact that there were only two occasions across both studies where students declined to attend a session. In terms of the peer-awareness campaign, some TAs noted an increased understanding of ASC, and felt that peers were now more sensitive to, or accepting of, some of the behaviour displayed by the focal students with ASC. The peers themselves appeared to engage with the session content, although the extent to which they did so increased if their class teacher was present. The finding that on two occasions students with ASC (including one focal student) were upset by the session content was of concern, however. Finally,
the response to the TA training appeared positive, but there was little evidence that the TAs considered the content of the training during their practice. This is possibly a result of the length of time the training lasted for, or the way in which it was delivered, two issues discussed further in the adherence and exposure section, below.

The positive findings regarding the appropriateness of the social-skills group are perhaps unsurprising given the previously reported popularity of the Attention Autism programme with school staff and students (Davis, 2014), including those in secondary schools (McCanney, 2012). Thus, whilst empirical support for the programme continues to be limited, the findings reported here provide further evidence that it is acceptable to intended recipients and implementers. Participants also reported that the peer-awareness campaign had a positive impact on peer knowledge about ASC, indicating that its content is appropriate to the intended audience. This was expected, given that the content was specifically chosen with the intended recipients in mind, and largely comprised of resources already recommended for use in schools. It was not, however, always engaging enough to hold the peers’ attention. The finding that peer engagement increased with the presence of a class teacher (e.g. Kevin, school three) can perhaps be explained through reference to Campbell’s (2006) five features of effective peer-awareness campaigns. Specifically, Campbell argues that peers will engage more in a campaign if it is delivered by a source with high credibility, which, for secondary school students, includes teachers. Since the researcher was unknown to the peers, it is possible she alone did not have credibility. By their teacher taking part in the campaign, however, the researcher may have experienced ‘reflected’ credibility – the peers valued the campaign if their teacher seemed to.

The level of participant engagement in the TA training seemed to be dependent on perception of need (examined further in the adherence and exposure section). Specifically, TAs who felt that they lacked prior knowledge for supporting students with ASC reported drawing on the TA training content more in their practice (e.g. school two), than those who felt that the TA training mirrored the strategies they were already using (e.g. study one and school three). Since TAs have expressed the need for ASC-specific strategies (Symes & Humphrey, 2011a), it is perhaps unsurprising that the TA training was perceived as more appropriate for those most lacking in knowledge or experience of supporting students with ASC. However, previous research using a
similar training package found that most TAs were able to clearly articulate how the training had impacted on their practice (Baxter, 2014). The TAs in that study, however, received three training sessions and had more opportunities to reflect on how they might implement the FBs in practice. The implications of the appropriateness findings to the on-going development of RESII are considered in section 6.3.

Adherence and exposure
Adherence and exposure to the essential programme elements of RESII (see table 3.3) was measured in both studies. A threshold of 80% was selected as the fidelity criteria for determining whether each element had been received or delivered as intended. Although this threshold was not met for all the elements in any one school, or for any one student, both studies provided some evidence that each component of RESII could feasibly be implemented in a mainstream secondary school setting, albeit if certain conditions were met. These included a high perception of need, and adequate time to deliver the intervention. These facilitators and barriers to implementation are discussed later in this section.

In terms of adherence, the TA training was the component of RESII most likely to be implemented as intended. The percentage of the training content received as intended was 100% in all cases. The training was delivered on a one-to-one basis in three of the five participating schools, and was received by all of the TAs supporting six of the 10 focal students. Adherence to the essential programme elements of the social-skills group and peer-awareness campaign was generally low. Whilst the three core parts of the Attention Autism programme (see table 3.1) were implemented with fidelity for each of the seven groups that ran, the level of adherence to the group guidelines failed to reach the fidelity criteria for four of the groups, with a low of 25%. Furthermore, typical peers were only included in three of the groups. For the peer-awareness campaign, the fidelity criteria for adherence to the session scripts (see appendix 4.13) was only reached for four of the seven campaigns that ran, and was only delivered to the peers with whom the focal student spent the majority of their time for three of nine students (the tenth campaign did not run).

In contrast to adherence, the TAs had the lowest level of exposure to the intervention. Although the TAs received all of the training content (see adherence, above), the
content was delivered over one hour, instead of four. Thus, the TAs spent just 25% of the intended time in the training session. Exposure to the social-skills group was higher. Five of the ten focal students reached or exceeded the fidelity criteria for exposure to the social-skills group, although only one student attended 100% of the sessions. Two of the students did not attend any of the sessions. For one, John, this was due to prolonged absence from school and for the other, Abdul, this was due to his teacher not allowing the group to be run. Exposure to the peer-awareness campaign was also high. Four of the peer groups received over 80% of the sessions. Two groups were stopped part-way through due to the prolonged absence of the relevant focal students. The campaign sessions lasted the expected duration of 20 minutes in almost all cases, excluding Khalid’s group, for whom the sessions were delivered in three, 30 minute sessions rather than eight, 20 minute ones. The implications of the adherence and exposure findings to the on-going development of RESII are considered in section 6.3.

The relatively low adherence and exposure to the essential programme elements was disappointing, especially considering that RESII was actively designed with the intended implementation setting in mind. Indeed, evidence for the suitability of the change strategies to the intended setting was given priority over empirical evidence, as recommended by researchers in the ASC (e.g. McConnell, 2002; Kasari & Smith, 2013) and intervention research (Fraser & Galinsky, 2010) fields (see section 3.1). Furthermore, views of school staff and students were actively sought when developing RESII’s content (see chapter 3). The emphasis on suitability was considered important, given that previous intervention research has identified a range of potential barriers to implementing interventions in secondary school settings, including time constraints, multiple initiatives and the priority or status an intervention is given (Lendrum et al., 2013; Ringwalt et al., 2003). In line with this, fieldnote data from studies one and two identified two key, interrelated factors that appeared to influence the extent to which RESII was delivered with fidelity. These were ‘perception of need’ and ‘time’.

In terms of the former, exposure tended to be higher when perception of need was higher. For example, in school three, where perception of need was high, adequate and protected time was given to run the social-skills groups, and in school two, where peers often experienced disagreements, the peers with whom the focal students spent the majority of their time received the peer-awareness campaign. However, whilst
perception of need was a facilitator of exposure, at times it was a barrier to adherence. For example, a high perception of need in school three meant that all of the students selected to take part in the social-skills groups also had social-skills difficulties, reducing the extent to which ‘appropriate’ social behaviours could be modelled for the students with ASC. Clearly, in school three at least, the need for social-skills training outstripped the school and researcher’s capacity to respond. It is perhaps unsurprising that demand for the social-skills group was high, given the social challenges students with ASC face, and the lack of clear programmes to remediate them (see chapter 1). Promisingly, however, findings from schools one and four, indicate that even when perception of need is not so high, schools are still willing to make time for the social-skills group, and are inclined to include typical peers.

Similarly, the TA training was less likely to be delivered on a one-to-one basis when perception of need for staff training was high. In such cases (i.e. study one and school three), the TA training was delivered in groups to ensure as many TAs received the training as possible within the given time frame. As with the social-skills group, this was another example of demand outstripping capacity. In study one, receiving the training in a group seemed to impact negatively on the extent to which the TAs engaged with the training content. Specifically, TAs seemed less likely to open up about their own practice, or to share the strategies they currently use, when trained in groups.

Time appeared to be a key barrier to adherence, and this seemed to be linked to perception of need. For example, aside from school two, there was only one other occasion where the peer-awareness campaign was delivered to the focal student’s main teaching group (Khalid in school four), and lack of time was the most common reason for this. This was true even when perceived need was high, such as in school one. It is well documented that curriculum demands may be a key barrier to implementing intervention content in secondary schools (Berman & McLaughlin, 1976; Greenberg 2010; Lendrum et al., 2013). To attempt to overcome this, the age of targeted students was set to 11-14 years, avoiding the final two years of schooling where students prepare for high-stakes school leaving exams. It seems, however, that even with younger students, finding time within the school curriculum to deliver RESII was not possible. Additionally, previous research indicates that intervention content is more likely to be delivered if it is similar to curriculum content (Fraser & Galinksy, 2010). Therefore, it
was felt that it could be delivered during more ‘pastoral’ parts of the school day. Indeed, the fact that RESII was delivered in PSHE classes in school one; RE in school four; and form time in study one and school three, indicates that RESII can easily be implemented within non-academic parts of the school curriculum. Unfortunately, such subjects tend to be delivered to the focal students form group, and not their teaching group, limiting the impact of the campaign.

Summary
Overall, RESII’s content was deemed acceptable to the intended recipients, but feasibility was generally low. Time and perception of need were identified as two key factors influencing the extent to which RESII was implemented with fidelity. It is possible, however, that aspects of the research or intervention design also limited the extent to which RESII was implemented as intended. For example, since RESII was delivered by one researcher on set days, it was not possible to schedule an alternative time to run the intervention if it could not be delivered on those days (as a result of, for example, school closure). Thus, the researcher’s own availability also had an impact on participant exposure to RESII. Future studies should seek to address this by using more researchers to deliver the intervention, or training the intended intervention agents (i.e. school SENCOs) to deliver RESII.

6.1.2 Overview of efficacy findings
The second research question guiding this thesis was concerned with whether RESII has a positive impact on the social inclusion of students with ASC. Accordingly, outcome data was collected alongside feasibility data (primarily in study two), to determine the initial efficacy of RESII. Efficacy was operationalised as the extent to which improvements in the targeted proximal and distal outcomes were observed. As specified in RESII’s programme model (figure 2.1), the proximal outcomes were the social skills of students with ASC, peer awareness of ASC, and the quantity and type of facilitative behaviours TAs used. The distal outcomes were the level of social support and acceptance students with ASC experienced from their peers, and the level of positive social interaction. Findings relating to RESII’s efficacy are summarised in this section, and considered in relation to previous research, with two important caveats. Firstly, although an aim of this thesis (and study two, in particular) was to establish evidence of RESII’s efficacy, this is not necessarily a central aim of initial intervention studies. For 200
example, recent guidance suggests that whilst pilot studies of school-based interventions should seek evidence they work as intended, determining that they can be implemented feasibly and affordably is also crucial (Humphrey et al., 2016). Furthermore, since an intervention will likely be modified following initial piloting, additional studies would be needed to establish the efficacy of the ‘final’ version (Fraser & Galinsky, 2010; Schilling, 1997). Thus, the findings presented here are not intended to provide unequivocal evidence of RESII’s efficacy.

Secondly, and relatedly, the extent to which an intervention is implemented as intended has implications for the conclusions that can be drawn about its efficacy (O’Donnell, 2008; Durlak & DuPre, 2008). Specifically, higher implementation has been linked to more positive outcomes (Durlak & DuPre, 2008). Indeed, this seemed to be the case for RESII, and, where possible, tentative links between implementation fidelity and outcomes are highlighted throughout this section. Overall, the limited evidence of RESII’s efficacy reported in both studies one and two is likely a result of the limited feasibility of implementing RESII. Thus, any conclusions regarding the efficacy of RESII at this stage are made with caution. The implications of the efficacy findings for RESII and future research are discussed in further detail in section 6.3.

Proximal outcomes

Social skills

There was no clear evidence from study one that exposure to RESII had improved social skills. In study two, there were some more hopeful, albeit mixed findings. Looking only at findings directly following intervention delivery, social skills improved in the majority of cases, although these improvements were small. This is surprising given that a social-skills group was included in RESII specifically because their use has been found to be most effective at improving social skills (Parsons et al., 2009) especially for older students (Bellini et al., 2007). One possible explanation for this contradictory finding is that although recommended for use with school-age participants, evidence of the impact of social-skills groups in school settings is limited, and they are recommend for use within a clinical setting (Reichow & Volkmar, 2010). Furthermore, whilst social-skills groups in general are recommended, there is limited empirical evidence for the Attention Autism programme specifically, despite it being highly popular with schools (Davies, 2014), and although there is evidence that
attention-based interventions can develop social skills (Bond et al., 2016), it is much less clear how effective such approaches are for older students. Thus, further research establishing the efficacy of the Attention Autism programme in school settings is needed.

Another possible reason, however, for the limited efficacy is that the programme ran for just eight weeks, which is just two-thirds of the time recommended for social-skills groups with school-aged populations (Reichow & Volkmar, 2010). It is important to note, however that there is inconsistent evidence for the relationship between the number and length of intervention sessions, or the duration of the intervention period, and intervention outcomes (Bellini et al., 2007; Mandell et al., 2013). Further research examining the efficacy of the Attention Autism programme would therefore also need to establish the ‘optimum’ length of the programme. A further likely reason for the limited impact on social-skills scores is the low fidelity with which the programme was implemented. In particular, whether or not typical peers were included in the group. For example, of the participants outcome data was available for, Jonathan was the only student who had typical peers in his social-skills group, and he was also the only one who’s gains in social skills reached clinical significance. Thus, it is clearly also vital to find ways to overcome the barriers to implementation discussed in section 6.1.1, if the efficacy of the programme is to be improved and established.

**Peer awareness**

There was evidence of increased peer awareness of ASC following intervention in study two, and this awareness was stronger than in study one. However, there was no significant impact on peer attitudes towards ASC in either study. It is interesting that the peer-awareness campaign did not significantly improve attitudes towards ASC, since previous studies have shown that simply having an awareness of the condition can lead to higher acceptance of those with it (Mavropoulou & Sideridis, 2014; Campbell et al., 2004). Furthermore, whole-class approaches have been found to be effective at changing student awareness and attitudes towards ASC, and improving social outcomes for students with ASC (Gus, 2000; Ochs et al., 2001), especially if peers receive descriptive, explanatory and directive information (Campbell, 2006), all of which the peer-awareness campaign included. Thus, whilst changes made to the peer-awareness
campaign at the end of study one (see appendix 4.17) appeared to improve the efficacy of the peer-awareness campaign, results were still not as positive as anticipated.

Two possible explanations for the limited efficacy of the peer-awareness campaign are proposed here. Firstly, as noted in the appropriateness section, above, peer awareness programmes delivered by school staff with higher credibility and power or status are likely to be most effective at changing peer attitudes towards ASC (Campbell, 2006). It is possible that the researcher, who was unknown to the students, did not have the necessary status to affect change. Indeed, in cases where the class teacher was more engaged in the campaign (e.g. by being present during the peer-awareness sessions), more positive outcomes were achieved. For example, Kevin’s teacher actively participated in the sessions, and his class showed the biggest post-intervention increase in peer attitudes towards ASC. Secondly it was considered likely that peers would need a number of sessions to explore ASC and its impact in order to really gain awareness of, and understand, the condition. It is possible, however, that the shorter, one-off sessions, already favoured by schools (Frederickson et al., 2010) are potentially more effective, and indeed much of the research evidence has shown that short programmes can result in long-term changes in attitudes (Gus, 2000; Ochs et al., 2001). It is possible that delivering the content in just one session may have been more effective, and the lack of a clear relationship between the amount on intervention received and the gains made in peer attitudes possibly supports this. Clearly, further research is needed to examine which aspects of the peer-awareness campaign are most important for achieving the intended outcomes.

Teaching Assistant use of facilitative behaviours

Overall, there was very little evidence that TA use of FBs increased following intervention. Although changes were made to the TA training and the observation schedule following study one, this did not lead to observable gains in study two, where both the average number and range of FBs used remained similar following intervention and at follow up. However, whilst the studies on which the TA training was based reported increases in the type and amount of FBs used, this change was minimal, and overall levels of FB use were still low (e.g. Malgren et al., 2005; Causton-Theoharis & Malmgren, 2005). Thus, it is possible that it is difficult to produce large changes in TA use of FBs using just one training session. Indeed, a more recent study that delivered a
similar training package over three sessions reported higher gains in FB use than those reported here (Baxter, 2014). Furthermore, although the TAs in this study received all of the training content, they did so in just 25% of the intended time. It is possible that improvements would have been greater if the training had been spread out over a longer period of time. Since it seemed unfeasible for TAs to receive their training in a four-hour block, future research might consider delivering the intervention content over four, one-hour sessions, thus increasing exposure, whilst potentially also increasing the number of FBs used.

Whilst the range of FBs observed in study two was low following intervention, there was, however, an overall reduction in the percentage of time the TAs spent in close proximity to the focal student in all cases, suggesting that the training was successful at targeting one of the strategies most likely to result in negative social outcomes for supported students with ASC (Symes & Humphrey, 2012). It is possible that just providing students with more physical space to interact with their peers could result in social gains, and this is discussed further in the social interaction section, below. The fact that TAs were unlikely to adopt other FBs following training, however, may be a reflection of its limited appropriateness. For example, TAs were unlikely to draw on the training content in their everyday practice unless they felt it was needed (see section 6.1.1). Finding ways to make the training more relevant, or supporting TAs to more meaningfully engage with the training content may be therefore be key to improving outcomes. Whilst delivering the training in groups, rather than on a one-to-one basis did not appear to be advantageous here, Baxter (2014) found the former was perceived as providing a support network for TAs, although this was in the context of multiple training sessions. In future then, delivering the training to groups of TAs may improve outcomes, if opportunities for joint reflection are also provided.

**Distal outcomes**

**Social support**

The focal students in study one reported an increase in social support following the intervention, specifically that they had more friends. The findings were more mixed in study two, with two focal students showing an increase in the number of peers they identified as friends following intervention, and a third, Jonathan, showing this increase at follow up. These findings are surprising, given that students with lower levels of...
social-skills impairment report higher friendship quality (Rowley et al., 2012). Since participants did not show large gains in social skills following intervention, it is unlikely that this can account for the rise in friendship nominations, especially given that RESII’s programme model explicitly emphasises the importance of social skills for receiving social support. A possible explanation for these findings is that students with ASC may understand friendship differently. Whilst students with ASC can recognise ‘friendship’ as well as typical peers, they are most likely to identify companionship as a salient feature of friendship, and pay less attention to closeness and intimacy (Bauminger et al., 2004). Furthermore, older students with the condition have been shown to emphasise the importance of shared interests in maintaining friendships (Daniel & Billingsley, 2010). It is possible that taking part in the intervention, and the social-skills group specifically, led to the focal students spending more time with peers, and they consequently interpreted this as ‘friendship’. This is perhaps supported by the finding that the increase in friendship nominations from the focal students was not matched with an increase in friendship nominations from their peers, apart from Jonathan, who again showed an increase at follow up. Further research is needed to examine this possibility further.

**Social acceptance**

The findings relating to social acceptance were unclear. In study one, increased perceived social support was matched to some extent by increased social acceptance from peers for one of the focal students. This mixed pattern of results was mirrored in the social acceptance data of study two, with Kevin and William becoming more accepted overall in their classroom social network (although, somewhat contradictorily, also being more likely to be rejected by their peers). Jonathan became less socially accepted following intervention, despite his gains in social skills and social support, whilst James remained popular throughout the study. The lack of clear evidence of increased social acceptance following intervention is perhaps unsurprising given that overall, students with ASC are more likely to be rejected, and less likely to be accepted by their peers, or recognised as part of a friendship group than typical students (Jones & Frederickson, 2010; Humphrey & Symes, 2010a, Humphrey & Symes, 2011; Locke et al., 2010). Since, in most cases, neither the social skills of the students with ASC themselves had increased, nor the attitudes of peers towards those with the condition, it is unsurprising that this pattern was not reversed in the two studies reported here.
Indeed, the finding that Jonathan’s increased social skills did not lead to greater social acceptance is explained by the fact that his peers’ attitudes towards those with ASC did not change following intervention, and actually decreased at follow-up. This supports the assumptions of the REPIM (Humphrey & Symes, 2011), on which RESII is based, that social acceptance is only possible if social skills and peer attitudes increase simultaneously.

**Social interaction**

Due to issues with the data collection methods, social interaction data was available for study two only (see section 4.1.6). The social interaction data indicated that all but one of the focal students perceived their social interaction skills as having improved following intervention, with Kevin showing a slight decrease, and this improvement continued at follow-up for Jonathan. The proportion of time all focal students spent not interacting with their peers decreased following intervention, but this was not maintained at follow-up for Jonathan and James. This is in line with findings from previous studies that trained TAs to support the social interactions of students with ASC and their typical peers (e.g. Malgren et al., 2005; Causton-Theoharis & Malmgren, 2005), which found large increases in social interaction following intervention, even when the increase in type and quality of FB use being relatively low, as was the case in study two. It is possible that the reduced time TAs spent in close proximity to the focal students with ASC following intervention provided more opportunities for the focal students to interact with their peers, thereby increasing the proportion of time they spent engaged in social interaction. However, all but one of the students also showed an increase in the number of negative social interactions per observation. There are two possible explanations for these findings. One is that since the TAs did not replace reduced proximity with FBs designed to support social interactions, the students with ASC were essentially left to their own devices during social interaction, and therefore may have encountered difficulties (Rossetti, 2012). Secondly, the limited increase in peer awareness of the condition may have meant that they were less understanding or accepting of the focal students social advances, and again, conflict ensued, as supported by the assumptions of the REPIM (Humphrey & Symes, 2011).
Summary
Outcome data from studies one and two suggest that the efficacy of RESII is relatively low. In particular, there was limited evidence that RESII successfully targeted the intended proximal outcomes of social skills, peer awareness and TA use of FBs. A possible explanation for these findings is implementation failure: since RESII was not delivered as designed, it is unsurprising that it did not work as intended, either. Indeed, there is some, albeit tentative, evidence to support this assumption, such as Jonathan’s superior gains in social skills after attending the only social-skills group that included typical peers. Interestingly, findings relating to the distal outcomes of RESII were more promising. In particular, the focal students with ASC reported having more friends, and engaged in more social interaction with their peers following intervention. This is despite relatively low fidelity and limited increases in proximal outcomes. It is possible that these findings are the result of two factors. One is that simply by being in the intervention, the students were exposed to more peers with which to become friends, or interact, with, particularly in the social-skills group. The second is that the TAs were less likely to sit next to the focal students during lessons following training, thereby allowing them greater opportunities to interact with their peers (although it is important to note that this may also have led to increased negative interactions in some cases). The findings reported here suggest that, if implementation had been higher, further gains in the targeted social outcomes could have been observed. However, potential limitations with RESII’s programme model, implementation and research design must be examined in further detail before such conclusions can be drawn. This is an advantage of the intervention research approach: findings from one stage are used to inform, rather than discontinue, intervention development. The following section will therefore consider the limitations of RESII and the studies conducted to examine it, to uncover potential sites for improvement.

6.2 Limitations
The findings presented in section 6.1.2 indicated that in its current form, participation in RESII does not necessarily improve the social experiences of included students with ASC. Research exploring intervention failure highlights three key reasons for why interventions may fail to achieve expected outcomes. These are: theory failure, implementation failure and research failure (Berman & McLaughlin, 1976; Raudenbush, 2008). Theory failure is concerned with the programme model underlying
the intervention, and, in particular, whether the change strategies selected in the programme theory are adequate for targeting the desired proximal and distal outcomes. Implementation failure refers to the extent to which the intervention was implemented as planned. That is, the theory of the intervention may have been sound, but efficacy was not demonstrated because the intervention was not implemented as intended. Finally, research failure assumes that the programme theory and implementation were as intended, but issues with the design of a study or the research materials used did not allow the effects of the intervention to be accurately captured. This section considers each of these three points in turn, to attempt to identify the key ‘failures’ of RESII and the two studies conducted as part of this thesis, and to identify areas for improvement.

### 6.2.1 Theory failure

RESII’s programme model (see figure 2.1) comprises a problem theory, a programme theory, the implementation context, and the targeted proximal and distal outcomes. There are a number of potential points at which the theory underlying RESII may be inadequate, and two key ones are considered here: the problem theory, and the programme theory. Considering the former, a key limitation of RESII’s problem theory is that it potentially lacks sufficient empirical support. RESII’s problem theory identifies poor social skills, limited peer awareness and lack of training for TAs as potential causes of the negative outcomes for students with ASC. These were selected primarily on the basis of the REPIM (Humphrey & Symes, 2011), a model that argues that social outcomes for included students with ASC are the result of the interaction between their poor social skills and the lack of awareness of the condition amongst their peers. Whilst there is some empirical evidence to support this assumption (Humphrey & Symes, 2011; Kasari et al., 2012; Schmidt et al., 2012), direct evidence is limited, and this thesis represents the first attempt to test the assumptions of the REPIM experimentally. Thus, it is possible that these two factors do not interact in the ways proposed by REPIM, and further research is needed to establish this. Similarly, TA training was identified as an important change strategy partly on the basis of the suggestion from Baxter (2014) that TAs also be included in the REPIM, given the prominent role they play in the social experiences of students with ASC. Whilst some evidence does support the notion that training TAs to facilitate social interaction can be effective (Causton-Theorharis & Malmgren, 2005; Malmgren et al., 2005) few studies have examined this, and those that have typically only looked at TA training in isolation.
(e.g. Baxter, 2014), meaning it is unclear how TA training interacts with the other two components of the REPI. That is, training TAs to use FBs may not necessarily be the best, or only way, to facilitate positive social interaction between students with ASC and their peers. Furthermore, TAs have reported tensions between supporting the social development of students with ASC and ensuring they complete academic tasks (Symes & Humphrey, 2011). The impact of TA training will therefore be limited by the extent to which they feel they can enact the suggested strategies in the classroom, and it is likely that classroom teachers would also need to be involved.

Whilst RESII is unique in that it explicitly considers the roles that others, namely peers and TAs can play in the social experiences of students with ASC, the problem theory is still limited in that it overlooks other potentially important factors. For example, the quality of student-teacher relationships, which tends to be low for students with ASC (Eman & Farrell, 2009) has been found to predict the extent to which included students with ASC are socially accepted by their peers (Robertson et al., 2003). It is possible that even if social skills, peer awareness and TA use of FBs are all improved, their impact on social inclusion will be limited if teachers are not also involved. For example, TAs may feel unable to encourage social interaction if they do not feel they are being supported by the class teacher (Symes & Humphrey, 2011). Furthermore, although RESII was built with the implementation context in mind, it is possible that important contextual factors were overlooked. Campbell & Barger (2014) argue that ‘in the specific case of autism, inclusive education has yet to yield robust and consistent improvements in attitudes, social acceptance and social status’ (p.248). There may be factors within the inclusive environment which make challenging and improving the social outcomes of students with ASC particularly difficult (Crosland & Dunlap, 2012). That is, whilst peers and TAs may well be important to include within an intervention to improve the social outcomes of students with ASC, such an approach may still be ineffective if other factors inherent in the environment itself are not also addressed. These may include aspects of the school day which are particularly challenging for students with ASC, such as multiple classes and teachers, increasing complexity of timetabling and curriculum, and the social pressures of adolescence (Adreon and Stella, 2001).
Another important group overlooked in RESII’s development was parents. Parents of students with ASC were not included in RESII’s programme theory primarily as they were not identified as a key factor underlying their negative social outcomes. Parents of children with the condition have, however, identified social outcomes as a key area of concern for them in relation to their child’s education (Whitaker, 2007). Thus, parents could have provided further insight into the difficulties experienced by their children, and offered potential avenues for improvement, or helped to refine the targeted outcomes of RESII. The views of parents should therefore be included in the design and evaluation of RESII in the future. Furthermore, it is possible that including parents in RESII’s programme theory could be beneficial to outcomes. For example, Laugeson and colleagues (Laugeson et al., 2012; Laugeson et al., 2009) evaluated an intervention which included parents, and found that gains in social-skills generalised to an educational setting, despite the intervention taking place in a clinical setting. Furthermore, those adolescents with ASC in the intervention group were more likely to invite friends over to their home than the control group, suggesting that parents may be well placed to facilitate social interactions.

In terms of the specific change strategies selected, a potential theoretical weakness is that RESII is an evidence-informed, rather than evidence-based, intervention. Evidence-informed interventions constitute practice based on a number of sources, including, but not limited to, empirical evidence (Nevo & Slonim-Nevo, 2011). Although this was due to the fact that intervention-research frameworks prioritise the suitability of change strategies to the intended setting over empirical evidence (Fraser & Galinsky, 2010; Schilling, 1997), it is possible that this did not always result in the most effective change strategy being selected. For example, a whole-class approach to raising peer awareness was selected over PMIs as this was felt to be the most feasible to implement in practice, despite PMIs being far more widely researched, and exhibiting powerful and robust treatment effects (Bond et al., 2016; McConnell, 2002). Finally, there was an assumption that students would apply the knowledge gained from the intervention implicitly, that is, without being directed to do so. The peers were not made aware of the fact that the focal students had ASC, and it was assumed that they would be able to use the knowledge learnt in the sessions to correctly identify students with ASC, and adjust their behaviour accordingly. It is possible that this did not occur, and perhaps explains why the peer-awareness sessions seemed less successful that more typical
disclosure of diagnosis session (e.g. Ochs et al., 2001). Furthermore, even if peer awareness had increased, the focal students may not have been aware of this and, given past negative experiences, may still have been reluctant to interact with their peers. Getting the balance between respecting the focal students privacy, but also ensuring their peers are aware they have ASC is a challenge that must be considered in future research.

6.2.2 Implementation failure
The limited fidelity with which RESII was implemented, particularly in study two, has already been discussed in section 6.1.1. Here, the focus will be on three key limitations of RESII that may have led to the poor implementation observed, namely that the intervention was not school-ready, some of the students who participated were not intervention-ready, and the fact that the essential programme elements and fidelity criteria were weakly specified. Considering the first of these, the feasibility findings indicated that despite RESII having been designed with the intended intervention setting in mind, it was still not ‘school-ready’ in the sense that it could easily be implemented as intended. Specifically, in three out of five schools, the social-skills groups did not include typical peers, limiting the extent to which the students with ASC were exposed to peers who could model ‘appropriate’ social responses for them. Secondly, the peer-awareness campaign was not always delivered to the group of students with whom the focal student spent most of their time, limiting the extent to which the students with ASC were exposed to peers who understood their condition. Thirdly, in terms of the TA training, the training was not delivered for the appropriate amount of time in any school, and often did not include all of the TAs with whom the focal student came into contact, meaning the students with ASC were less likely to be exposed to facilitative behaviours that could increase the quantity and quality of interactions with their peers. As noted in section 6.1.1, perception of need and time seemed to be a significant barriers to implementation. If RESII is to be implemented in future, then solutions to these issues are needed, specifically how to ensure that each element of RESII can fit within the routines of the typical school day. Potential solutions are suggested in section 6.3.

As well as the intervention not being school-ready, some of the students may not have been ready for the intervention. The key contact at each school was asked to identify students who they felt would benefit from taking part in the intervention, but in two
cases, the students selected ended up being absent from school for a prolonged period of time. In school two, John never received any element of the intervention, and his anxiety about returning to school perhaps indicates that he would have benefitted from the intervention a year earlier, when he was still attending classes. Caroline in school one stopped coming to school half way through her intervention, and this was attributed to difficulties associated with the onset of puberty. Again, she may have benefitted from receiving the intervention earlier, or from not being exposed to anything new at an already difficulty time for her. Indeed, intervening may not always be the right decision, and there may be times when maintaining the status quo is preferable (McConnell, 2002). This issue raises some key questions about when an intervention should be delivered, and the criteria for participant selection, and these issues would need to be considered in greater depth before RESII is trialled again.

Finally, it is important to note that the implementation of RESII was judged against fidelity criteria defined by the researcher before the intervention was trialled. Such criteria are important, since intervention effectiveness has been found to be greatest in studies where interventions have clearly specified essential programme elements, irrespective of the ‘dosage’ delivered (Durlak & DuPre, 2008). However, guidance on developing fidelity criteria is limited (Mowbray et al., 2013), and essential elements may only become apparent after the intervention has been implemented in multiple settings with multiple implementers and recipients (Fixsen, Naoom, Blase, Friedman & Wallace, 2005). Thus, the limited impact of RESII on the targeted outcomes may not have been due to the failure to meet fidelity criteria, but rather due to inappropriate or inadequate essential programme elements being selected. It is therefore vital that a more considered approach to the identification of RESII’s essential programme elements, and how they will be measured, is taken in future research. Intervention Component Analysis (ICA), which helps identify the most salient elements of an intervention through exploration of similar interventions (Sutcliffe, Thomas, Stokes, Hinds & Bangpan, 2015), is potentially useful here, as are more studies examining the implementation and outcomes of RESII. ICA can also help further clarify the relationship between implementation and outcomes (Sutcliffe et al., 2015), something which could only be done tentatively here (see section 6.1.2).
6.2.3 Research failure

Alongside potential limitations of the theory underlying RESII, and barriers to implementation, issues with the research design may have limited the extent to which RESII was implemented and/or data was captured, and thus, the extent to which appropriate conclusions can be drawn. Despite the research conducted in studies one and two being influenced by the recommendations of the intervention-research framework guiding the design and development of RESII, issues with the research sample, measures and design still arose, and these are considered in this section. With regards to the sample, there were two key issues: heterogeneity, and low ASC symptoms. The key contact at each school was asked to select the students whom they thought would benefit most from taking part in RESII, and, aside from some broad inclusion criteria (e.g. having a statement of SEN for ASC), they were free to select whoever they liked. This resulted in a very heterogeneous sample (e.g. in terms of age, gender, level of need), which is an issue because it makes it harder to identify for which types of students RESII may be most suitable (Mesibov & Shea, 2011). Furthermore, although all of the selected students had an official diagnosis of ASC, they displayed few autistic behaviours in the school setting, as evidenced by the low ratings on the Social Responsiveness Scale (study two). Indeed, in study two, based on the TA responses to the items, three of the children were in the ‘normal’ range, and only one student was in the severe range. This is a limitation as if the students were already functioning at the ‘normal’ level, the ability to produce clearly observable improvements, particularly in the focal students’ social skills, may have been reduced. The fact that the outcomes were most positive for Jonathan, the only student with an ASC rating within the severe range, suggests that the intervention may be most suitable for students with greater ASC symptoms. This would mean that the majority of the sample included in study two may not have been appropriate, although further research involving students with higher levels of ASC behaviours would be needed to determine if this is the case.

In terms of measures, there were two key concerns: one, the challenges associated with capturing the thoughts and feelings of students with ASC, and two, deciding which views to prioritise. Whilst there is a movement towards including the views of individuals with ASC in research, it is also acknowledged that the extent to which this can be done is limited by the difficulties in social interaction and social communication
characteristic of the condition (Connor, 2000). Thus researchers in the field have to answer a puzzling question: how do you access the social lives of people who have difficulties interpreting social events (Cohen, 1998)? As discussed in section 6.1.2, students with ASC may conceptualise social experiences such as friendship and loneliness differently from their typical peers (Bauminger et al., 2004). The friendship survey used in study two tried to circumvent this by asking the focal students who they enjoyed spending time with, rather than asking them who they were ‘friends’ with. However, since students with ASC may rate their friendships in terms of people with whom they engage in shared activities (Petrina et al., 2014) rather than the closeness or intimacy of their relationships (Bauminger et al., 2004), it is still possible that their understanding of friendship may have influenced their answers. This may also explain why their peers did not always reciprocate these friendship nominations, given that closeness and intimacy are two important aspects of friendship for typical peers (Whitehouse et al., 2009).

The reference to contradictory findings, above, highlights another methodological issue of this study: deciding which of the competing accounts to prioritise. There were a number of occasions where findings differed depending on who was completing a measure. For example, whilst the TAs did not think that the students with ASC’s social skills had improved, the students themselves reported greater self-efficacy in social interaction. Furthermore, although the TAs felt that the peer-awareness campaign had been a success, this was not reflected in the attitude ratings from peers. Finally, although students with ASC reported having more friends following intervention, this was not always matched with greater acceptance from peers. Triangulation was used in studies one and two to strengthen conclusions that could be drawn from the data (Mertens, 2009). Whilst the benefits of triangulation are clear if the outcomes from the different measures converge, it is less helpful if the outcomes diverge. In this case, decisions need to be made about which accounts to prioritise, which presents its own challenges. As mentioned above, students with ASC may have difficulties reflecting on their own social experiences, indicating that the findings from others, such as their TAs or typical peers may be more ‘reliable’. However, that undermines the importance of the subjective experiences of the students with ASC themselves, and overlooks the different ways in which they may conceptualise social phenomena. In this study, an attempt was
made to give weight to all findings equally, but it is clear that drawing conclusions as to whether RESII works or not will be dependent on which viewpoint is adopted.

Finally, it is worth considering the researcher as a possible source of research failure. In particular, it is a potential limitation that RESII was delivered and evaluated by the researcher who designed it. Comparisons of research findings indicate that when interventions are assessed by the people who developed them, the results tend to be more positive than when they are not, possibly as a result of researcher bias arising from conflicts of interest (Eisner, 2009). The researcher attempted to avoid such ‘experimenter effects’ (Field & Hole, 2003) through, for example, using triangulation of data to strengthen the conclusions that could be drawn (see appendix 5.8 for more details). The fact that the reported findings were relatively negative indicates that researcher bias is unlikely, and the resultant findings honestly reflect the research process and outcomes. In fact, it is more of a concern that the researcher may have actually limited the extent to which RESII’s efficacy could be demonstrated.

Intervention-research frameworks, and intervention research more generally, suggest that new interventions should initially be implemented by the intervention designers (Fraser & Galinsky, 2010; Lendrum & Humphrey, 2012). That is, it is assumed that if the intervention is delivered by members of the research team, they will have greater control over the quantity and quality of intervention delivery, allowing early conclusions regarding efficacy to be more easily drawn. Whilst this may be the case in laboratory settings, where the researcher can have greater control over, for example, whether adequate space and time is available for delivery, this may not be the case in school settings. Since the researcher is typically an ‘outsider’ in such settings, the control they can have is limited. They can not, for example, book rooms or arrange for students to be withdrawn from lessons. Thus, it may actually be a limitation for researchers to conduct interventions themselves, within educational settings, and it might instead be better to train school staff to deliver it on their behalf. As mentioned in section 6.1.1, the low exposure to RESII may have been in part due to the fact that the researcher was only scheduled to attend each school at a particular time each week, meaning that missed sessions were seldom rescheduled. School staff, such as school SENCos, could be in a better position to ensure that missing sessions were delivered at another, more suitable time, thus increasing the overall dosage of the intervention
received. However, whether this would be the case would need to be explored in future research.

**Summary**

As shown in sections 6.1.1 and 6.1.2, the feasibility and efficacy of RESII was relatively low, despite the intervention being designed with the intended intervention setting in mind, and despite attempting to address the limitations of previous interventions. This section has considered some of the potential limitations in RESII’s theory, implementation and research design that may have accounted for these findings. In terms of theory, the under-reliance on empirical evidence may have resulted in inadequate change strategies being selected for use, reducing the extent to which RESII could impact on the targeted outcomes. In terms of implementation, a failure to design RESII to fit within the typical routines of the school day limited the extent to which the essential programme elements could be implemented as intended. Finally, a number of aspects of the research process, specifically the sample, measures and design used, may have limited the quality of data that was collected, and the extent to which the findings could be generalised to other settings. All of these limitations highlight important areas of improvement for both RESII itself, and the research conducted to evaluate it. Intervention-research frameworks emphasise the iterative nature of intervention design, arguing that findings from one study should be used to inform and adapt the intervention, before it is tested again (Fraser & Galinsky, 2010). In that vein, the following section considers directions for further research that take into account the limitations of the two studies presented here.

6.3 **Implications for future research**

RESII can be defined as a complex intervention. Complex interventions are interventions that comprise of more than one component, which may act both independently or interdependently to bring about the desired outcomes (Campbell et al., 2007). The extent to which a complex intervention is successful is dependent on how closely the strategies used in each component are paired with, and influence specific outcomes (Fraser & Galinsky, 2010). RESII comprises of three components, namely a social-skills group, a peer-awareness campaign, and TA training. Whilst these components were selected specifically to address factors contributing to the negative social outcomes of included students with ASC (e.g. limited peer knowledge about
ASC), a key theoretical limitation of RESII is that its three components are not adequately supported by research. The priority given to feasibility meant that components and strategies were not selected on the basis of empirical evidence. It is therefore not possible to establish if the limited gains made following intervention are the result of poor implementation, or due to ineffective change strategies having been selected (Thomas, 1989). This issue is compounded further by the reciprocal nature of RESII, whereby gains made from one component are hypothesised to lead to gains in other areas. Therefore, before the efficacy of RESII can be determined further, evidence that each component leads to the desired proximal outcomes is required.

Future research should establish the feasibility and efficacy of each component individually, before trialling them in differing combinations (e.g. comparing outcomes when the TA training is present or excluded). Such an approach would help establish how each component contributes to the targeted outcomes, (Kasari et al., 2012) and which of them are most essential (Fixsen et al., 2005). It may also be worth exploring whether RESII can be delivered in a more tiered way. For example, all TAs working with students with ASC could receive the training in the first instance, and work to facilitate interactions between students with ASC and their typical peers. If some students with ASC still experience negative social outcomes, their peers could receive the peer awareness campaign. If negative outcomes persist, then the students with ASC could attend the social-skills group. Such an approach mirrors current guidance on the inclusion of students with SEN in the SEN Code of Practice (2014), and the flexible approach advocated by good practice schools (see for example Morewood et al., 2011). Such an approach allows limited school resources to be used in a more targeted way. Furthermore, given that perception of need was an important facilitator of implementation, such an approach could increase the likelihood of RESII being implemented with fidelity. School SENCos or Educational Psychologists would be well placed to identify the specific needs of individual students and to track their progress accordingly, and future research should seek to compare this approach with studies in which RESII is delivered in its entirety.

The low fidelity with which RESII was implemented suggests that, in its current form, it may not yet be ‘school-ready’. Although the views of key stakeholders, including SENCos, students with ASC and their TAs were sought during the design of RESII, and
in studies one and two, it is clear that further work is needed before it is acceptable (see section 6.1.1). This could start by collecting more comprehensive data regarding appropriateness. In studies one and two, appropriateness was assessed in terms of participant perceptions’ of RESII’s effectiveness, and engagement in the intervention. Whilst these are two important aspects of social validity (Hurley, 2012), understanding whether or not the intervention is in a form acceptable to intended users is also crucial to acceptance (Wolf, 1978). Future research should include a broader range of stakeholders, and collect appropriateness data that includes participant views on the acceptability of RESII’s goals, methods and outcomes (Marchant, Allen Heath & Miramontes, 2012). This is particularly important given the role perception of need played in the extent to which RESII was implemented as intended. Previous research indicates that implementation will be higher when an intervention is prioritised (Ringwalt et al., 2003). More closely aligning the goals of RESII with the perceived needs of the school, may therefore lead to improved fidelity.

In addition to this, it would also be important to more clearly identify the views of the students with ASC in relation to learning about ASC. It was decided that the students with ASC would be included in the audience of the peer-awareness campaign (in so far as they were comfortable to do so), as it is acknowledged that as adolescence can be a time of increasing self awareness for these students, learning more about the condition could be beneficial for them, as well as their peers (Broderick et al., 2002). However, as shown in section 6.1.1, some students found this particularly challenging. Understanding more about what is or isn’t acceptable to these learners may help reduce this distress in the future. In fact, it would be helpful to include students with ASC in the future development of RESII more generally, as well as in the research conducted to evaluate it. Incorporating their views into RESII’s design would potentially increase the extent to which they are willing to engage with the intervention (Fraser & Galinsky, 2010), as well as addressing the potential power imbalance when research is done to rather than with students with disabilities (Nind, 2008). This could be achieved by including students with ASC in research steering groups, considering the voices of adults with ASC (e.g. Milton & Lyte, 2012) and using measures of social validity, as described in the previous paragraph.
Future research should also consider how to better engage TAs in the TA training package. Whilst TAs supporting students with ASC have expressed the need for more training specific to their role (Symes & Humphrey, 2011a), there was limited evidence that the TAs in studies one and two of this thesis enacted the training principles in practice. Furthermore, although some TAs did find the training useful, others felt that it simply confirmed what they were already doing. As noted in section 6.2.1, above, the extent to which TAs were able to implement the FBs may have been restricted by how supportive they perceived class teachers to be. Involving teachers in the training may increase TA confidence and opportunities to enact the FBs in practice. In addition, there may be a better way to more meaningfully engage TAs in the training. Baxter (2014), for example, delivered TA training over three sessions, allowing TAs time to reflect on their practice, and be reminded of strategies they could use. It is possible that embedding the TA training across the school year could be more beneficial than a one-off training session, and future research should examine this.

In terms of emphasising the need for the intervention, a suggestion for future research may be to include a presentation of the negative outcomes currently experienced by students with ASC in schools, including their social and academic outcomes. This presentation could be given at the start of the intervention to a range of relevant stakeholders, including teachers, headteachers and parents. The presentations could be tailored to each group to emphasise particular benefits. For example, for teachers, the benefits may be a reduction in negative interaction between students with ASC and their peers. For headteachers, it may be that RESII represents a cost-effective way to support the SEN of students with ASC. It is estimated that approximately £1,400 additional funding is spent per SEN student (McNally, 2009). Since RESII would be conducted in-house, it would be significantly cheaper than employing support from outside agencies, for example. Finally, for parents it would be important to highlight the benefits their children would gain from taking part. For the students with ASC that might include a reduction in negative social outcomes. For the typical peers, that might include an increased acceptance of difference, and the development of team-building skills.

Finally, in terms of research design, there are a number of suggestions for future research, and two of them are discussed here. Specifically, these include selecting more homogenous samples and training school staff to deliver RESII. In terms of the former,
an important part of intervention development is identifying how a new intervention works with different participant groups (Fraser & Galinsky, 2010). Thus, future research studies should include homogenous samples to allow clearer conclusions about feasibility and effectiveness to be drawn, and to find out which types of students may benefit most from exposure to RESII. This could be achieved by the researcher, rather than the school, selecting the students to receive the intervention. For example, participants could be screened to identify those displaying clear autistic symptoms, since the findings from Jonathan in school two suggest that RESII may have the greatest impact with students experiencing greater social difficulties (see section 6.1.2).

Secondly, identifying those students who are ‘ready’ for the intervention is important, given the finding that two students did not receive RESII due to prolonged school absence (see section 6.1.1). It is possible that implementing the intervention as soon as students start secondary school may be the most effective, since then any problems can be addressed, hopefully before they begin.

RESII was designed to be delivered by the school staff who have responsibility for ensuring the needs of students with ASC are met, most likely the school SENCo. Since SENCos in England are responsible for co-ordinating provision for children and young people with SEN and/or disabilities in schools, and all schools are required to nominate a member of staff to adopt this position, they seem well placed to deliver interventions such as RESII. Since these are the intended intervention agents, and since using the researcher to deliver the intervention in studies one and two possibly resulted in limited fidelity, future research should examine the feasibility and efficacy of RESII when it is delivered by school SENCos, or other school staff charged with supporting those with the condition. The researcher could train the delivery agent to deliver all aspects of the intervention, and regularly visit the school to ensure the intervention is being delivered as intended, and to address any problems or concerns that may arise. In this way, it will be possible to get a clearer picture of the challenges to implementing RESII in mainstream secondary schools, beyond those presented by the researcher themselves delivering the intervention. As mentioned above, although this may mean less control over how intervention content is delivered, it is likely to increase how much of the intervention is received.
Summary

Intervention-research frameworks propose that when an intervention has first been designed, it does not make sense to immediately test its effectiveness in a large-scale population study, if other issues, such as its acceptability by potential users, have yet to be established (Schilling, 1997). Indeed, the findings from the studies conducted as part of this thesis appear to support this assumption. This section has offered some suggestions for future research that may move RESII closer to being feasibly implemented in the intended intervention setting, thus bringing it one step closer to having its effectiveness established. The suggestions for future research attempt to address some of the limitations of studies one and two. They include finding more empirical evidence for each component of RESII, which is currently limited; expanding measures of appropriateness to ensure that RESII more closely matches the needs of schools; and selecting more homogenous samples to allow clearer conclusions to be drawn regarding which students RESII may be most suitable for. Finally, it is suggested that in future studies, the intervention agent should be a member of school staff responsible for the provision for students with ASC, to more clearly identify barriers and facilitators to implementation. Whilst much work is still needed before RESII can be described as ‘school-ready’, this thesis still makes an important contribution to the field of ASC intervention research, and this is discussed in the following section.

6.4 Contribution to knowledge

RESII was designed for two key reasons: First, to improve the negative social outcomes currently experienced by included students with ASC (section 1.3), and second, to overcome the limitations of existing approaches to doing so (section 1.4). Whilst there are already numerous interventions that seek to improve the social skills and experiences of children and young people with ASC (Strain et al., 2011), RESII offers a unique and comprehensive alternative to these. It does so by considering a number of key factors underlying the negative social experiences of these individuals, and by offering strategies to address them. Thus, the most significant contribution to knowledge that this thesis makes is RESII itself. Although the findings presented in chapters 4 and 5 suggest that RESII may not have yet achieved its aims of being feasible and efficacious, this does not mean it is redundant: intervention research is iterative, and is focused on the continued design and development of an intervention until its goals are achieved (Fraser & Galinksy, 2010; Thomas, 1989). In its current
form, RESII is ready to be trialled and refined further, offering a strong starting point for schools and researchers interested in improving the social lives of students with ASC. Whilst section 6.2 highlighted a number of important limitations of RESII that this future work must take into account, it is equally important to recognise the contribution this thesis makes to the field of ASC intervention research. To that end, this section considers the theoretical, implementation and research contributions of this work.

6.4.1 Theoretical contribution
The programme model underlying RESII (section 2.2) is theoretically unique in that it represents (to the author’s knowledge), the first time both peers and TAs have been included alongside students with ASC in an intervention to improve their social outcomes. As noted in section 1.4, child-specific interventions, which involve directly teaching social skills (McConnell, 2002) are most prominent in the field, based on the assumption that improving the social experiences of students with ASC is best achieved through improving their social skills (Flynn & Healy, 2012). RESII provides an alternative to this approach, by recognising that the social experiences of students with ASC are shaped as much by their environment as they are by their condition. Specifically, RESII is both based on, and attempts to provide support for, the ‘Reciprocal Effects Peer Interaction Model’ (REPIM, Humphrey & Symes, 2011). The REPIM posits that the quality of the social experiences of students with ASC is determined by the interaction between their social-cognition difficulties and the attitudes of their peers towards those with the condition. Furthermore, the inclusion of TAs in the intervention acknowledges the important role that they also play in the social outcomes of students with ASC (Rossetti, 2012; Symes & Humphrey, 2012). Whilst Baxter (2014) drew on a similar theoretical framework in the development of their intervention, only TAs were included in the intervention’s delivery, and students with ASC and their peers were not targeted directly. Thus, RESII is the only intervention that recognises peers and TAs as contributing to social exclusion of students with ASC, and at the same time provides strategies to address these factors.

The inclusion of peers and TAs in RESII addresses one of the key criticism of current interventions identified in section 1.4, namely that they seldom include others alongside the student with ASC (Bauminger, 2002). This represents just one limitation that RESII
addresses through its design. A second important contribution of RESII is that the use of TAs to support social interactions offers a potential strategy to improve the often-limited generalisability of intervention gains reported beyond the intervention setting (Schmidt et al., 2011). Thirdly, RESII was designed for use with older students with ASC, a group typically overlooked in the extant literature (Bond et al., 2016). Thus, RESII provides well-needed insight into the effectiveness and challenges of using interventions with older learners. Finally, in response to calls for interventions to be ‘school-ready’ (Parsons & Kasari, 2013), the feasibility of implementing RESII in mainstream secondary schools was explicitly considered at all stages of design and development. Whilst in its current form, RESII may not adequately address all of the concerns within the field (for example, the low feasibility with which it was implemented may indicate it is not yet school-ready), it represents a significant and important step forward in the design of interventions for use with included students with ASC, and as such helps move the field away from child-specific interventions by providing an example of what an intervention that addresses current limitations might look like.

### 6.4.2 Implementation contribution

Whilst the data from studies one and two indicate that RESII was not always implemented as intended, the process of designing and trialling the intervention still provides an important contribution to knowledge in relation to the implementation of interventions. Firstly, this thesis is an example of how an intervention can be designed with the implementation context in mind. Secondly, it presents a clear framework for collecting and combining quantitative and qualitative data to identify not just how much of an intervention is delivered, but also the quality of the delivery. Thirdly, it identifies some key barriers to implementation that need to be taken into account in future studies trialling RESII, or any other school-based intervention.

Intervention-research frameworks (e.g. Fraser & Galinsky, 2010) and ASC intervention researchers specifically (e.g. Parsons & Kasari, 2013) emphasise the importance of developing interventions in collaboration with intended users and delivery agents. Doing so may increase the extent to which an intervention is viewed as acceptable by key stakeholders (Domitrovich & Greenberg, 2000), which is important since perceived effectiveness of an intervention has been linked to higher fidelity (Ringwalt et al.,...
2003). Despite the clear benefits of including stakeholders in the design of interventions, however, it is unclear how this might best be done. Few studies report on the process of designing intervention components, or selecting intervention materials. Of the 10 intervention studies presented in table 1.1, for example, none of them explicitly outlined how they designed their intervention, or showed how stakeholders contributed to this process. Thus, a key contribution to knowledge that this thesis makes is that it explicitly demonstrates how stakeholder views can be sought and utilised in the design of an intervention (e.g. section 3.1). For example, by interviewing key staff in three ‘good-practice’ schools, social-skills groups were identified as an acceptable way to teach social skills, and included in RESII’s programme theory accordingly. This transparency allows other researchers to make sense of RESII’s design, and to make judgements regarding the acceptability of the intervention to its intended users and delivery agents.

Within the field of ASC research, there are calls for those delivering interventions to ‘provide richer descriptions of exactly how these are implemented in practice’ (Jones, 2006, p.547). One of the central arguments for studying implementation is that the degree to which a programme operates as designed is related to its effectiveness (Domitrovich & Greenberg, 2000). Furthermore, without data on implementation, researchers cannot be sure how to interpret outcome data (Durlak & DuPre, 2008). When measuring implementation, a distinction is often made between fidelity to the structural and process dimensions of an intervention (Harn et al., 2013; O’Donnell, 2008). Measuring the structural dimension involves an objective look at whether essential programme elements were implemented as intended, and in the correct dosage (Harn et al., 2013). Measuring the process dimension involves examining the quality of implementation, such as how well the intervention was delivered and the extent to which participants engaged with its content (Kaderavek & Justice, 2010). Both kinds of fidelity are important, since even if adherence is high, an intervention can still be ineffective if engagement is low (Kaderavek & Justice, 2010). Despite this, the majority of intervention studies only measure one aspect of implementation (Durlak & DuPre, 2008), and procedural fidelity is often overlooked, possibly because it is perceived to be more difficult to ‘capture’ than structural fidelity (Kaderavek & Justice, 2010). This pattern is found in ASC intervention research too (Reichow & Volkmar, 2010). This thesis overcomes some of these limitations by providing transparent data on the
structural (adherence and exposure) and procedural (acceptability) implementation of RESII, and by providing an example of how quantitative and qualitative data can be combined to capture both aspects of fidelity. Researchers can draw on the work presented here when examining the implementation of their own interventions, and hopefully provide a richer account of the implementation process as result.

According to Berman & McLaughlin (1976), implementation occurs through the interaction between an intervention and its setting. Thus, it is unlikely that fidelity can be achieved without taking potential barriers to delivering an intervention into account. Previous research has identified some barriers that may be pertinent to the implementation of interventions in secondary schools. These include contextual characteristics such as time constraints, multiple initiatives and the priority or status the intervention is given within the school (Lendrum et al., 2013), as well as indifference from staff (Berman & McLaughlin, 1976). Since few ASC intervention studies are conducted in school settings (Bond et al., 2016), understanding the particular challenges related to implementing interventions with students with ASC are less well understood. Furthermore, even when they are conducted in school settings, factors influencing fidelity are generally not reported. For example, Kasari et al., (2012) conducted a large scale RCT study with 60 primary schools students. Beyond noting that a challenge of the study was ‘working with school calendars’ and the fact that some students had changed schools of classes at the 12-week follow up, they did not discuss or raise any barriers to implementing their interventions in a school setting. Thus, it is not possible to determine which environmental factors should be taken into account when delivering interventions for students with ASC. This thesis addressed this gap by using qualitative fieldnotes to identify and report barriers and facilitators to implementation. Future research should consider perception of need and time constraints when implementing RESII, or other, similar interventions.

6.4.3 Research contribution
The research presented here also makes an important contribution to knowledge. Firstly, it provides a worked example of how an intervention-research framework can be applied to the design of an intervention to improve the social outcomes of included students with ASC. As noted earlier in this section, ASC intervention researchers seldom report how decisions relating to the design and content of their interventions
were made. Although studies within education more broadly are starting to document this (e.g. Aventin et al., 2015), this lack of transparency remains an issue. By documenting the process of designing RESII, this thesis provides a template for other researchers to follow in their own research, and identifies potential issues that may arise at each stage of intervention development (Comer et al., 2004). Furthermore, being explicit about the rationale behind RESII’s design allows other researchers to determine the extent to which it is adequate in relation to its intended outcomes, and to identify potential weaknesses or areas for improvement (Fraser & Galinsky, 2010). This increases the possibility of RESII being refined and, eventually, improving the social outcomes of students with ASC.

Secondly, the research conducted to assess RESII’s efficacy addressed two important challenges. First, there have been calls for practitioners and researchers to develop ways to gain the perspective of students with ASC (Guldberg et al., 2011), something that has been acknowledged as challenging (Cohen, 1998). This study tried to address this limitation by using a social-skills questionnaire with clear examples of social behaviour (CSEIP, Wheeler & Ladd, 1982) as the basis of a qualitative interview. This provided the researcher with a more in-depth understanding of the social experiences of the focal students, without having to rely exclusively on the views of others, such as their TAs. This is important, since research in the field rarely takes the views of students with ASC themselves into account (Parsons et al., 2011). This is a limitation, for as studies one and two showed, the accounts of TAs can differ from those of the students themselves. Indeed, one issue that arose in this research was which accounts should be prioritised. Whilst no suggestion is offered here, the research findings clearly highlight the importance of collecting data from multiple sources. Second, a new measure of peer attitudes that reduces the need for prior awareness of ASC was developed for use in study two. Although other studies have used similar measures (e.g. Dowjotas, 2009), they have included references to ‘autism’. This was considered problematic since students may be unfamiliar with the condition (Campbell & Barger, 2014) or, even if they know the term, they may not clearly understand what it means (Campbell & Barger, 2011). The measure designed here allows researchers to capture how peers react to a student with ASC based purely on their described behaviour, rather than relying on, or making inferences about, the extent to which they are aware of the condition. The measure had good psychometric properties and represents a quick and reliable method
of establishing peer attitudes towards ASC. It is hoped that other researchers will make use of this measure in future.

6.5 Conclusion

Included students with ASC may experience a range of negative social outcomes when included in mainstream schools (Bauminger & Kasari, 2000; Humphrey and Symes 2010a; 2011). Peer relationships are a consistent source of difficult for these children throughout their school-life (Church, Alisanski & Amanullah, 2000), and may become more so when they enter secondary school (Locke et al., 2010). This is not necessarily because students with ASC do not want friends (Sciuttio et al., 2012), but rather because they may find it difficult to navigate the social world, or because their peers may fail to understand them and their condition (Humphrey & Symes, 2011; Locke et al., 2010). Whilst it is argued that placement in mainstream schools can provide opportunities for social development through modelling behaviour of typical peers (Boutot & Bryant, 2005), evidence to support this assumption is scarce (Reed et al., 2012). In fact, it is increasingly recognised that placement in mainstream settings along is insufficient, and interventions are required if social outcomes are to be improved (Guldberg et al., 2011).

Identifying what form such interventions should take is difficult given that it is unlikely any one intervention will meet the needs of all learners with ASC (Bond et al., 2016; Guldberg et al., 2011). RESII, however, offers a potential solution as it moves beyond focusing exclusively on the perceived deficits of the student, and considers the role others, namely peers and TAs, can play in their social outcomes. RESII represents an exciting new direction for intervention development, and future studies to improve its feasibility and efficacy are strongly encouraged. It is important to note, however, that whilst RESII addresses some of the key limitations of current approaches, it is unlikely to be implemented as intended if perceived need is low. It is therefore important that the need for this comprehensive intervention is emphasised. In particular, there needs to be a move away from locating the blame for negative social outcomes solely within the child with ASC, to recognise how their environment may also play a contributing role. A potential starting point is teacher training. Teachers currently enter the profession with limited knowledge of ASC, or SEN more generally (Jones, 2006), and may not understand how the condition manifests in an educational setting (Sciuttio et al., 2012).
Future studies examining the use of RESII in mainstream schools therefore should consider how to raise the perception of need for the intervention, before its benefits can be truly realised.
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# Sample Attention Autism session plan

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Preview</strong></td>
<td>Draw and write the activities on a white board, in order. Keep displayed throughout the session. Go over the rules for each section e.g. they don’t touch what is in the box.</td>
</tr>
<tr>
<td>2</td>
<td><strong>The Box</strong></td>
<td><strong>Two wind up toys</strong> First get one toy out, wind it up and let it go. Then do the same with the other toy. Then try and set them off at the same time, and see which wins/runs out first/falls of table etc.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Getting in the Zone</strong></td>
<td><strong>Fizz Whizz</strong> Have one packet of Fizz Whizz. Going around the group they need to take a few pieces at a time, and then pass the packet on. After a couple of goes, introduce another packet going a different way. When they have a good handful, we all take it at the same time.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Demonstration</strong></td>
<td><strong>Exploding vitamin C</strong> Put half a vitamin C tablet in a film tub, add a bit of water, quickly put the lid on and let it pop off. Then do two at once to see which pops first.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Group activity</strong></td>
<td><strong>Exploding vitamin C</strong> Given each student a pack with everything they need to do the activity. Ask one of the students to demonstrate first, then the rest of the students can go. They can have one whole vitamin C tablet, and decide how many goes they want.</td>
</tr>
<tr>
<td>6</td>
<td><strong>Review</strong></td>
<td>Go back over the list of activities and cross them off, talking about what we did for each one.</td>
</tr>
</tbody>
</table>

## Materials

- **Tool Box**
- Wind-up toys
- Two packets of Fizz Whizz
- Vitamin C tablets
- 20 film boxes (10 filled with water)
- 10 take away tubs
Appendix 3.2

Attention Autism session guidelines

Guidelines for adults involved in the group

• A minimum of two adults should be involved in each session. This includes the ‘lead adult’ who runs the session, and at least one or two others to help manage student behaviour and model desired behaviour.

• All adults in the room must be part of the group. This means they should join in with all activities. Adults not taking part should be asked to leave the room.

• The adults in the group are there to model behaviours they wish to encourage so they should:
  o Maintain attention at all times
  o Look interested in activities
  o Show enjoyment in activities

• The adult leading the group does the majority of the talking (e.g. providing instructions). The other adults in the group should limit their verbal input. They should reinforce what the leader says. They may also make simple statements about the activities, such as ‘that’s interesting!’

• The adults should avoid addressing minor behavioural issues. More significant behavioural issues should be addressed by the lead adult in the first instance by praising desired behaviour and ignoring undesired behaviour.

• The other adults in the group can intervene if a student becomes more disruptive, but removing a student from the group should only be used as a last resort.

Guidelines for the group setup

• The group should comprise approximately four to six students, and be a mixture of students with and without ASC.

• The group should be fast-paced, and last no longer than 30 minutes in length.

• The students should sit in a semi-circle facing the lead adult and have a clear view of the activities being demonstrated, but be far enough away to not touch the materials.

• Distractions should be kept to a minimum. At the start of each session, the group leader should put a ‘do not disturb’ sign on the door, remove any potentially distracting objects and switch off any computers or phones.
Session 2
Hidden and visible disabilities

In what ways are these athletes the same and different?

Are you like any of them? How are you different?

Some differences are obvious and some are hidden

http://www.youtube.com/watch?v=rOQoA3tpn3w&list=PL69D006AC406AFC77

Appendix 3.3

Peer awareness campaign PowerPoint content

Session 3
Supporting others

What makes us the same and what makes us different?

Same but different

Split into pairs. Each pair will have 30 seconds to find 5 things they have in common.
One pair joins another pair. The foursome now has a minute to find something all 4 have in common.
Each group can present the list of things they have in common.
Repeat for what makes us different.
Session 3
How can we support people’s difficulties?

- In previous sessions we have discussed how all people have strengths and weaknesses and it’s important to know your own and be able to spot them in others.
- We have also discussed how people can be the same and different and that some differences can be called disabilities.
- We have also introduced the idea of hidden and visible disability.

In today’s session we will think about how we can support people’s difficulties in a way that focuses on their strengths.

Meet Haythim:
Haythim is 16. He lives in Hulme in Manchester. He attends the local High School where he is a popular pupil and gets decent marks in his lessons. He has no vision at all. He is in trouble at the moment though because over the past term he is always late for school. How could you help Haythim?

The Helping Hand Approach

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haythim</td>
<td></td>
</tr>
<tr>
<td>Physical/organisational help</td>
<td>Emotional/social help</td>
</tr>
</tbody>
</table>

How will you know if the changes are working?

Haythim

Hannah is a quiet 14-year-old girl from a close family in Whalley Range. Some people say she is jump and she never looks at you when she is speaking which her classmates don’t like. She has always been shy at school although she did have a few friends at primary school and was doing ok academically. She plays violin really well; she used to play for Greater Manchester. However, since year 7 though she now complains of severe abdominal pain that is worse in the morning and never present at night. She had missed loads of school during the previous year because of the pain. She also avoids school trips and PE.

The Helping Hand Approach

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hannah</td>
<td></td>
</tr>
<tr>
<td>Physical/organisational help</td>
<td>Emotional/social help</td>
</tr>
</tbody>
</table>

How will you know if the changes are working?

Hannah

Activity

In groups of 3:
Collect an envelope from the front. In it are three profiles of individuals with disabilities. Your task is to complete a helping hand sheet for each individual.
I would like you to begin with their strengths and weaknesses as individuals and then think about the types of things you can do to support them. Remember to think about physical/organisational changes you can make as well as social and emotional things.
* Be prepared to feed back one to the group.
Session 4

Autism

- Autism is short for 'autism spectrum disorder', which includes Asperger syndrome
- One in every 100 people have autism
- How many pupils go to your school?
- How many pupils in your school might have autism?

Ask Adam

- Ask Adam video - what is autism?

What is autism?

People with autism
- Think differently
- Act differently
- Speak differently

They find social situations difficult, they have problems communicating and they find it hard to use their imagination.

Autism is a genetic disability. This means people are born with it, and they can't change it. There is no 'cure' for autism.

Ask Adam

Ask Adam video – what might a pupil with autism find difficult?

Ask Adam

Ask Adam video – what might a pupil with autism find difficult?
Session 5
Supporting students with autism and their class

What is autism?
People with autism
• Think differently
• Act differently
• Speak differently
They find social situations difficult, they have problems communicating and they find it hard to use their imagination.
Autism is a genetic disability. This means people are born with it, and they can’t change it. There is no ‘cure’ for autism.

Keziah
Hello, my name is Keziah and I have autism. I am 11 years old and go to high school. I really love reading and like to spend as much time as I can in the library. I go to the library at break and lunchtimes with my friend, Peter. I sometimes find it hard to be with all the other children because it is so noisy and it makes me feel stressed. When I am stressed I am not very good at telling people my feelings. Instead, I get really angry and sometimes run out of the classroom. The teacher has to spend time with me, trying to calm me down again. Some of the students in my class make fun of me and call me names, which makes me feel sad. I don’t have many friends because I feel too shy to speak to the people in my class, and I never know what to say to them. I don’t like it when things change, for example if my normal teacher is away and we have a new teacher instead. I wish that people would tell me when changes are going to happen, so I can get used to the idea.

Session 6
Supporting students with autism and their class

Keziah
Hello, my name is Keziah and I have autism. I am 11 years old and go to high school. I really love reading and like to spend as much time as I can in the library. I go to the library at break and lunchtimes with my friend, Peter. I sometimes find it hard to be with all the other children because it is so noisy and it makes me feel stressed. When I am stressed I am not very good at telling people my feelings. Instead, I get really angry and sometimes run out of the classroom. The teacher has to spend time with me, trying to calm me down again. Some of the students in my class make fun of me and call me names, which makes me feel sad. I don’t have many friends because I feel too shy to speak to the people in my class, and I never know what to say to them. I don’t like it when things change, for example if my normal teacher is away and we have a new teacher instead. I wish that people would tell me when changes are going to happen, so I can get used to the idea.

Problems for Keziah – how can we solve them?

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<th>Problems for Keziah</th>
<th>Solutions</th>
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Problems for your class – how can we solve them?

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<tr>
<th>Problems for your class</th>
<th>Solutions</th>
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Session 7
Celebrating the positive!

How to be an ‘autism friendly’ classroom: Top Four Rules

• Be friendly! Offer to work with a pupil with autism, and invite them to spend break and lunchtimes with you.

• Be patient! Sometimes a pupil with autism might not remember instructions, or might get upset or angry for what seems like (for you) a small reason. They are not doing this on purpose, so please be patient and help them by explaining what is happening.

• Be quiet! Some children with autism find it difficult to be in noisy places. You can help them (and everyone else) by working as quietly as you can.

• Be alert! Other pupils might not be as ‘autism friendly’ as you are. They might bully children with autism and call them names. If you see this happening, tell a teacher straight away.

Session 8
Educating others

Task

• Make a poster or leaflet that will teach other pupils in your school about autism.
• You should include:
  – What autism is
  – The kinds of things a person with autism might find difficult (give examples)
  – How to help a person with autism overcome these difficulties (give examples)
  – The strengths that people with autism have
### Appendix 3.4

#### Overview of peer-awareness campaign

This table presents an outline of the content, source, type of information, and aims of each peer-awareness campaign session.

<table>
<thead>
<tr>
<th>Session</th>
<th>Content</th>
<th>Source/basis</th>
<th>Type of information</th>
<th>Aim addressed</th>
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<tbody>
<tr>
<td>1</td>
<td><strong>Identifying personal strengths and weaknesses.</strong> Peers play a game in groups of four which involves identifying and sharing examples of their strengths and weaknesses</td>
<td>Good-practice school three; Etherington (2007)</td>
<td>None</td>
<td>Increased acceptance of difference</td>
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<td>2</td>
<td><strong>Hidden and visible disabilities.</strong> Peers learn about the difference between hidden and visible disabilities, and are shown examples of each</td>
<td>Good-practice school three; Gray, (2004); NAS (2012)</td>
<td>None</td>
<td>Increased acceptance of difference</td>
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<tr>
<td>3</td>
<td><strong>Supporting others.</strong> Peers learn about, and consider, how they could support children with a range of hidden and visible disabilities (ASC not included)</td>
<td>Good-practice school three; Etherington (2007); Gray (2004); NAS (2012)</td>
<td>None</td>
<td>Increased acceptance of difference</td>
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<tr>
<td>4</td>
<td><strong>ASC.</strong> Peers are introduced to ASC, including incidence and the triad of impairments. Examples of each impairment are provided through short videos created by a 14 year old student with ASC</td>
<td>Good-practice schools one, two and three; Etherington (2007); Gus (2000); Gray (2004); NAS (2012), NEELB TV (2013)</td>
<td>Explanatory information</td>
<td>Increased awareness</td>
</tr>
<tr>
<td>5</td>
<td><strong>Supporting students with ASC (part one of one).</strong> Peers are introduced to a fictional student with ASC and asked to imagine that they will be joining their class. Peers identify problems that the fictional student and the class as a whole may experience.</td>
<td>Good-practice school three, Gus (2000); NAS (2004)</td>
<td>Explanatory information</td>
<td>Increased awareness</td>
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<tr>
<td>6</td>
<td><strong>Supporting students with ASC (part two of two).</strong> Peers revisit</td>
<td>Etherington (2007); Gus</td>
<td>Directive information</td>
<td>Improved quantity and</td>
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the problems identified in the previous session, and work together to find solutions to them.

| 7  | **Celebrating the positive**: Peers develop a set of rules to help make their classroom ‘ASC friendly’. Next, a more positive view of ASC is presented through short videos featuring exceptional individuals with ASC. The focal student with ASC can contribute to this session if they feel comfortable to do so e.g. sharing their experiences of having ASC. | Good-practice school three; Etherington (2007) | Descriptive information | Increased awareness, Increased acceptance of difference, Improved quantity and quality of social interactions |
| 8  | **Educating others**: In the final session, peers draw together what they have learnt by designing posters or leaflets to educate others in their school about ASC | Descriptive information, explanatory information, directive information | As above |
Providing opportunities for social interaction for pupils with autism
Wendy Symes

Autism

"Autism is a lifelong developmental disability that affects how a person communicates with, and relates to, other people.” (NAS, 2013)

Social outcomes

Large scale study comparing 40 pupils with autism with 40 pupils with dyslexia, and 40 pupils with no SEN.

Pupils with autism were:
• Less popular
• Less included in lessons, especially when they involved group work
• Spent more of their break and lunchtimes alone, and were less likely to interact with peers
• More likely to be bullied
• More likely to feel that their classmates didn’t support them

Not surprised?

You might not find the results surprising given that:

a) Pupils with autism have difficulties socialising and

b) Maybe pupils with autism prefer to spend time on their own?

However, research has found that pupils with autism can feel lonely, are aware that they are being bullied, and would like to make friends, and can be good friends to others.

Importance of social interaction

Why are social interaction and relationships important?

Research findings

• Improve academic achievement
• Essential for learning
• Linked to higher self-esteem
• Can reduce the risk of mental health issues

Doesn’t everyone deserve to have friends if they want them? Or at least, not to be bullied by the people around them?
Time to interact

What opportunities do pupils with (or without) autism have to socialise during the day?

The role of Teaching Assistants

Teaching Assistants are the most common resource that schools use to support pupils with autism. Unfortunately, there is large amounts of evidence from the UK and America that suggests pupils with TAs:

• Do worse academically
• Have fewer friends
• Are less likely to interact with their classmates and teachers
• Less likely to work with other students during lessons

The role of Teaching Assistants

It means that pupils with a TA will spend most of their time talking to someone who is paid to be with them ☺

These findings are found for pupils with a range of SEN – not just autism.

For example, one study looking at a pupil with EBD found that 90% of all their social interactions happened when the TA wasn’t there – but the TA was with them nearly all day!

Why?

Why do you think that TAs might act as a barrier to social interaction?

Why?

Can you think of any times when you might have acted as a barrier to social interaction?

Why?

How often do you consider the development of social skills/friendships when supporting pupils with autism?
Removing the barriers to social interaction
How can TAs act as a ‘bridge’ between pupils with and without autism? – What could you do?

Suggested strategies
- **Adult fade back** – fictional task/prepare in advance for social interaction/ move students together
- **Prompt to be social** – look for appropriate social opportunities/ prompt to engage successfully/ model behaviour/ interpret behaviours
- **Connect with peers** – peer mentors/ highlight similarities/ purposeful error
  *Make the most of those times in the school day when peer interactions are most likely*

Will it work?
There is evidence that, if these and similar strategies are used, they can increase the chances of a pupil interacting with their peers.
One study (which included pupils with autism) found that just a small change in TA behaviour resulted in 25 times MORE social interactions for the pupil.

Summary
- Students with autism have difficulty navigating the social world, and, despite wanting friends, experience a number of negative social outcomes
- Peer interactions and friendships are important for a number of reasons, for example they are linked to self-esteem and academic achievement.
- Although they are used as the primary tool to help the inclusion of pupils with autism, teaching assistants may actually be acting as a barrier to social inclusion for pupils with autism
- There are a number of strategies teaching assistants could use in their practice to remove this barrier. These mainly involve fading back, prompting to be social and connecting peers.

Contact
Wendy Symes
Wendy.Symes@manchester.ac.uk
Appendix 3.6

Facilitative behaviours included in the Teaching Assistant training

**Adult fade back** – Backing away from pupil when peers are near
- **Fictional task** – TA creates a task, such as helping another pupil, to leave focal pupil to work with another pupil
- **Prepare in advance for social interactions** – TA warns students that they will be absent during a lesson/activity and that they will have to work with their peers
- **Move students together** – Directing students (either the focal pupil or peer) to physically move so that the focal pupil is working with one or more peers

**Prompt to be social** – TA looking for opportunities for focal pupil to interact with peers
- **Looking for appropriate social opportunities** – Identify a situation where the focal pupil can interact with peers
- **Prompt to engage successfully** – E.g. Prompt to speak more loudly, clearly, to say hello, to maintain a conversation, to listen, to ask someone to sit down etc.
- **Model behaviour** – Explain or show pupil how to interact or direct the student to interact with peers
- **Interpret behaviour** – Explaining to peers any unconventional behaviour(s) exhibited by focal pupil that could communicate intent

**Connect with peers** – Formally develop peer support as an alternative to TA support
- **Peer mentors** – Use peers to provide support a TA might provide e.g. acting as a scribe
- **Highlighting similarity** – Verbally identify communalities between the focal pupil and one or more peers
- **Purposeful error** – Inconsequential slips that require pupils to share materials or work together e.g. ‘forgetting’ a pencil case

TAs are reminded to make the most of those times of the school day when peer interactions are most likely.
Appendix 4.1

Information sheet for parents of focal students with ASC

The development and evaluation of an intervention to facilitate the social inclusion of pupils with autistic spectrum disorders in mainstream secondary schools.

Participant Information Sheet

Your child is being invited to take part in a study as part of a student project that will contribute towards my PhD. I have developed a social-skills intervention to facilitate the social inclusion of pupils with autistic spectrum disorders (ASDs), and am hoping to trial it in your child’s school. Before you decide if you would like your child to take part it is important for you to understand why the study is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish for your child to take part. Thank you for reading this.

Who will conduct the study?
Wendy Symes, School of Education, Ellen Wilkinson Building, University of Manchester, Oxford Road, M13 9PL

Title of the study
The development and evaluation of an intervention to facilitate the social inclusion of pupils with autistic spectrum disorders in mainstream secondary schools.

What is the aim of the study?
The aim of this study is to trial a social-skills intervention for pupils with ASD. The intervention has three key components: (1) one-to-one social-skills training for pupils with ASD, (2) a whole-class awareness campaign about ASD and (3) training for teaching assistants in how to provide opportunities for, and to support, the social interactions of pupils with ASD and their peers. I have just developed the intervention and am now hoping to trial it in your child’s school to see how it works in practice. As a result of this trial I am hoping to improve the intervention further.

Why has my child been chosen?
Your child has been chosen as he/she has an ASD and is in Key Stage 3. The school SENCo thought that you and your child might be interested in taking part.

What would my child be asked to do if he/she took part?
If you decide to let your child take part they will have two interviews with me about their social experiences in school, as well as their views on the intervention. I would also like to observe your child in three lessons over the Spring term. The observations will be conducted in such a way so as not to disturb any activities your child is engaged in. Your child will also meet me for weekly one-to-one social-skills training session, which will last no longer that 30 minutes. The interviews, observations and social-skills training will be conducted at times decided by the school and your child to minimise
*any disruption they may cause. It is not expected that taking part in the study will cause your child any harm*

**How is confidentiality maintained?**
Any identifying information from the interview and observations will be removed. All information will either be stored in a locked filing cabinet, or on a secure, password-protected laptop to which only the researcher has access. I will not share information you provide with anyone else.

**What happens if I do not want my child to take part or if I change my mind?**
It is up to you to decide whether or not you want your child to take part. If you do decide to allow them to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide for them to take part you are still free to withdraw your child at any time without giving a reason.

**Will my child be paid for participating in the study?**
Unfortunately it is not possible to pay your child for participating in this study.

**What is the duration of the study?**
You child will be interviewed on two occasions over the Spring term. The interviews will last no longer than one hour in total. I am also hoping to observe your child in three, one-hour lessons over the Spring term. Your child will have eight weekly, 30 minute one-to-one social-skills sessions with me over the Spring term.

**Where will the study be conducted?**
The study will be conducted at your school during usual school hours.

**Will the outcomes of the study be published?**
Yes, the outcomes of the study will be published as part of my thesis.

**Criminal Records Check (if applicable)**
I have enhanced CRB disclosure

**Contact for further information**
If you would like further information about the study then please feel free to email me at: Wendy.Symes@postgrad.manchester.ac.uk, or call me on: 0161 275 3335. Alternatively, you can contact my supervisor, Professor Neil Humphrey at: Neil.Humphrey@manchester.ac.uk, or call him on: 0161 275 3404

**What if something goes wrong?**
If there are any issues regarding this research that you would prefer not to discuss with members of the research team, please contact the Research Practice and Governance Co-ordinator by either writing to 'The Research Practice and Governance Co-ordinator, Research Office, Christie Building, The University of Manchester, Oxford Road, Manchester M13 9PL', by emailing: Research-Governance@manchester.ac.uk, or by telephoning 0161 275 7583 or 275 8093
Appendix 4.2

Consent form for parents of focal students with ASC

The development of an intervention to facilitate the social inclusion of pupils with autistic spectrum disorders in mainstream secondary schools.

If you are happy for your child to participate please complete and sign the consent form below

1. I confirm that I have read the attached information sheet on the above study and have had the opportunity to consider the information and ask questions and had these answered satisfactorily. 

2. I understand that my child’s participation in the study is voluntary and that he/she is free to withdraw at any time without giving a reason.

3. I understand that the interviews will be audio/video-recorded

4. I agree to the use of anonymous quotes

I agree to my child taking part in the above project

Please Initial Box

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<th>Name of participant</th>
<th>Date</th>
<th>Signature</th>
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<tr>
<td>Name of person taking consent</td>
<td>Date</td>
<td>Signature</td>
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Please ensure that you have signed your consent form above.
Appendix 4.3

Information sheet for parents of peers included in the social-skills group

The development and evaluation of an intervention to facilitate the social inclusion of pupils with autistic spectrum disorders in mainstream secondary schools.

Participant Information Sheet

Your child is being invited to take part in a study as part of a student project that will contribute towards my PhD. I have developed a social-skills intervention to facilitate the social inclusion of pupils with autistic spectrum disorders (ASDs), and am hoping to trial it in your child’s school. Before you decide if you would like your child to take part it is important for you to understand why the study is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish for your child to take part. Thank you for reading this.

Who will conduct the study?
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The aim of this study is to trial a social-skills intervention for pupils with ASD. The intervention has three key components: (1) one-to-one social-skills training for pupils with ASD, (2) a whole-class awareness campaign about ASD and (3) training for teaching assistants in how to provide opportunities for, and to support, the social interactions of pupils with ASD and their peers. I have just developed the intervention and am now hoping to trial it in your child’s school to see how it works in practice. The results of this trial will be published as part of my PhD.

Why has my child been chosen?
Your child has been chosen as he/she has been selected by the school SENCo to take part.

What would my child be asked to do if he/she took part?
If you decide to let your child take part they will participate in the social-skills group which will run for 30 minutes a week for 8 weeks. The sessions will take place during
you child’s [fill as appropriate] lesson, and their teacher [fill as appropriate] has agreed to them being withdrawn.

**How is confidentiality maintained?**
*Any identifying information from the interview and observations will be removed. All information will either be stored in a locked filing cabinet, or on a secure, password-protected laptop to which only the researcher has access. I will not share information you provide with anyone else.*

**What happens if I do not want my child to take part or if I change my mind?**
*It is up to you to decide whether or not you want your child to take part. If you do decide to allow them to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide for them to take part you are still free to withdraw your child at any time without giving a reason.*

**Will my child be paid for participating in the study?**
*Unfortunately it is not possible to pay your child for participating in this study.*

**What is the duration of the study?**
*Your child will have eight weekly, 30 minute one-to-one social-skills sessions with me over the Spring term.*

**Where will the study be conducted?**
*The study will be conducted at your child’s school during usual school hours.*

**Will the outcomes of the study be published?**
*Yes, the outcomes of the study will be published as part of my thesis.*

**Criminal Records Check (if applicable)**
*I have enhanced CRB disclosure*

**Contact for further information**
*If you would like further information about the study then please feel free to email me at: Wendy.Symes@postgrad.manchester.ac.uk, or call me on: 0161 275 3335. Alternatively, you can contact my supervisor, Professor Neil Humphrey at: Neil.Humphrey@manchester.ac.uk, or call him on: 0161 275 3404*

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Appendix 4.4

Consent form for parents of peers included in the social-skills group

The development of an intervention to facilitate the social inclusion of pupils with autistic spectrum disorders in mainstream secondary schools.

If you are happy for your child to participate please complete and sign the consent form below

1. I confirm that I have read the attached information sheet on the above study and have had the opportunity to consider the information and ask questions and had these answered satisfactorily.

2. I understand that my child’s participation in the study is voluntary and that he/she is free to withdraw at any time without giving a reason.

I agree to my child taking part in the above project

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Please Initial Box
Appendix 4.5

Information sheet for parents of peers receiving the peer awareness campaign

The development and evaluation of an intervention to facilitate the social inclusion of pupils with autistic spectrum disorders in mainstream secondary schools.

Participant Information Sheet

Your child is being invited to take part in a study as part of a student project that will contribute towards my PhD. I have developed a social-skills intervention to facilitate the social inclusion of pupils with autistic spectrum disorders (ASDs), and am hoping to trial it in your child’s school. Before you decide if you would like your child to take part it is important for you to understand why the study is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish for your child to take part. Thank you for reading this.

Who will conduct the study?
Wendy Symes, School of Education, Ellen Wilkinson Building, University of Manchester, Oxford Road, M13 9PL

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Why has my child been chosen?
Your child has been chosen as his/her form group has been selected by the school SENCo to take part.

What would my child be asked to do if he/she took part?
If you decide to let your child take part they will complete two questionnaires at the start and end of the Spring term. The questionnaires are to find out their attitudes towards, and knowledge of, young people with ASD. Your child’s class will receive weekly whole-class sessions from me on ASD during form time, for eight weeks during the
Spring term. The questionnaires and whole-class sessions will be conducted at times decided by the school to minimise any disruption they may cause. It is not expected that taking part in the study will cause your child any harm.

How is confidentiality maintained?
Any identifying information from the interview and observations will be removed. All information will either be stored in a locked filing cabinet, or on a secure, password-protected laptop to which only the researcher has access. I will not share information you provide with anyone else.

What happens if I do not want my child to take part or if I change my mind?
It is up to you to decide whether or not you want your child to take part. If you do decide to allow them to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide for them to take part you are still free to withdraw your child at any time without giving a reason.

Will my child be paid for participating in the study?
Unfortunately it is not possible to pay your child for participating in this study.

What is the duration of the study?
Your child will complete two questionnaires at the start and end of the Spring term. Each questionnaire should take no longer than five minutes to complete, giving a total time of 20 minutes. Your child will have eight weekly, 30 minute whole-class sessions about ASD with me over the Spring term.

Where will the study be conducted?
The study will be conducted at your child’s school during usual school hours.

Will the outcomes of the study be published?
Yes, the outcomes of the study will be published as part of my thesis.

Criminal Records Check (if applicable)
I have enhanced CRB disclosure

Contact for further information
If you would like further information about the study then please feel free to email me at: Wendy.Symes@postgrad.manchester.ac.uk, or call me on: 0161 275 3335. Alternatively, you can contact my supervisor, Professor Neil Humphrey at: Neil.Humphrey@manchester.ac.uk, or call him on: 0161 275 3404

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Appendix 4.6

Consent form for parents of peers receiving the peer awareness campaign

The development of an intervention to facilitate the social inclusion of pupils with autistic spectrum disorders in mainstream secondary schools.

If you are NOT happy for your child to participate please complete and sign the consent form below

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Participant Information Sheet

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Who will conduct the study?
Wendy Symes, School of Education, Ellen Wilkinson Building, University of Manchester, Oxford Road, M13 9PL

Title of the study
The development and evaluation of an intervention to facilitate the social inclusion of pupils with autistic spectrum disorders in mainstream secondary schools.

What is the aim of the study?
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Why have I been chosen?
You have been chosen as you are a teaching assistant for a pupil with ASD in Key Stage 3, and your SENCo thought you might be interested in taking part.

What would I be asked to do if I took part?
If you decided to take part you would be interviewed by me at three times throughout the Spring and Summer term. The interviews would be about how you currently support pupils with ASD, and your perceptions of their social experiences. I would also like your feedback on the intervention. For the intervention you will receive training on different ways to facilitate social interactions between pupils with ASD and their
classmates. I would then observe you supporting a pupil with ASD in lessons about three times over the Spring term. All training, interviews and observations will take place at a time convenient for you, and it is not expected that taking part in the study will inconvenience you. It is not expected that taking part in the study will cause you harm.

What happens to the data collected? 
The data collected will be used in my PhD to demonstrate whether or not the intervention I have developed is effective.

How is confidentiality maintained? 
Any identifying information from the interview and observations will be removed. All information will either be stored in a locked filing cabinet, or on a secure, password-protected laptop to which only the researcher has access. I will not share information you provide with anyone else.

What happens if I do not want to take part or if I change my mind? 
It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason.

Will I be paid for participating in the study? 
Unfortunately it is not possible to pay you for participating in this study.

What is the duration of the study? 
You will be interviewed three times, and the interviews should last no longer than one hour each. I would also like to observe you about three times during the Spring/Summer term. Finally, you will also be asked to attend a training session at the beginning of the Summer term. The training should last no longer than two hours.

Where will the study be conducted? 
The study will be conducted at your school during usual school hours.

Will the outcomes of the study be published? 
Yes, the outcomes of the study will be published as part of my PhD

Criminal Records Check (if applicable) 
I have enhanced CRB disclosure.

Contact for further information 
If you would like further information about the study then please feel free to email me at: Wendy.Symes@postgrad.manchester.ac.uk, or call me on: 0161 275 3335. Alternatively, you can contact my supervisor, Professor Neil Humphrey at: Neil.Humphrey@manchester.ac.uk, or call him on: 0161 275 3404

What if something goes wrong? 
If there are any issues regarding this research that you would prefer not to discuss with members of the research team, please contact the Research Practice and Governance Co-ordinator by either writing to 'The Research Practice and Governance Co-ordinator, Research Office, Christie Building, The University of Manchester, Oxford Road,
Manchester M13 9PL’, by emailing: Research-Governance@manchester.ac.uk, or by telephoning 0161 275 7583 or 275 8093
Appendix 4.8

The development and evaluation of an intervention to facilitate the social inclusion of pupils with autistic spectrum disorders in mainstream secondary schools.

If you are happy to participate please complete and sign the consent form below

Consent form for Teaching Assistants

1. I confirm that I have read the attached information sheet on the above study and have had the opportunity to consider the information and ask questions and had these answered satisfactorily.

2. I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving a reason.

3. I understand that the interviews will be audio/video-recorded

4. I agree to the use of anonymous quotes

5. I agree that any data collected may be published in anonymous form in academic books or journals.

I agree to take part in the above project

<table>
<thead>
<tr>
<th>Name of participant</th>
<th>Date</th>
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<th>Name of person taking consent</th>
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Appendix 4.9

Adapted version of the Chedoke-McMaster Attitudes Towards Children with Handicaps Scale (CATCH)

I am interested in your thoughts and feelings about children with autism.

Have you heard of autism before? (please circle your answer) YES  NO
Do you know what autism is? (please circle your answer) YES  NO

Now please answer each of the questions below, by ticking the box that best matches the way you feel. Do not spend too much time on each question. This is not a test and there are no right or wrong answers – I am just interested in what you think. No one in your school will see your answers.

<table>
<thead>
<tr>
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<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree or disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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<tbody>
<tr>
<td>1.</td>
<td>I wouldn’t worry if a young person with autism sat next to me in class.</td>
<td></td>
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<tr>
<td>2.</td>
<td>I wouldn’t introduce a young person with autism to my friends.</td>
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<td>3.</td>
<td>Young people with autism feel sorry for themselves.</td>
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<td>4.</td>
<td>I would stick up for a young person with autism if they were being teased.</td>
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<td>5.</td>
<td>I feel sorry for young people with autism.</td>
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<tr>
<td>6.</td>
<td>I feel embarrassed when I see a young person with autism.</td>
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<td>7.</td>
<td>Young people with autism don’t have any fun.</td>
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<td>8.</td>
<td>I would be happy to have a young person with autism as a friend.</td>
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<tr>
<td>9.</td>
<td>I try not to speak to a young person who has autism.</td>
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<td>10.</td>
<td>I would try to stay away from a young person with autism.</td>
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<tr>
<td>11.</td>
<td>I would be happy to spend time with a young person with autism.</td>
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<tr>
<td>12.</td>
<td>Young people with autism are interested in a lot of things.</td>
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<td>13.</td>
<td>I would invite a young person with autism to stay over at my house.</td>
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<td>15.</td>
<td>I would miss break time to keep a young person with autism company.</td>
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<td>16.</td>
<td>I would not like to share my things with a young person with autism.</td>
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<td>17.</td>
<td>I would be afraid to spend time with a young person with autism.</td>
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<td>18.</td>
<td>I would invite a young person with autism to my birthday party.</td>
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<td>19.</td>
<td>Young people with autism don’t like to make friends.</td>
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<td>20.</td>
<td>Young people with autism are ill a lot.</td>
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<td>21.</td>
<td>I wouldn’t mind spending time at a young person with autism’s house.</td>
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<td>22.</td>
<td>I would not introduce a young person with autism to my friends.</td>
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<td>23.</td>
<td>I would share secrets with a young person with autism.</td>
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<td>24.</td>
<td>Young people with autism like to play.</td>
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<td>25.</td>
<td>I would not like a friend with autism as much as my other friends.</td>
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<td>26.</td>
<td>I would feel good if I could help a young person with autism.</td>
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<tr>
<td>27.</td>
<td>Young people with autism need lots of help to do things.</td>
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<td>28.</td>
<td>I wouldn’t like a young person with autism to come to my house.</td>
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<tr>
<td>29.</td>
<td>Young people with autism can’t do things for themselves.</td>
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<tr>
<td>30.</td>
<td>I would like to be a friends with a young person with autism.</td>
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<td>31.</td>
<td>In class I wouldn’t like to sit next to a young person with autism.</td>
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<td>32.</td>
<td>I would enjoy spending time with a young person with autism.</td>
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<td>33.</td>
<td>I would talk to a young person with autism.</td>
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<td>34.</td>
<td>Young people with autism don’t like to do school work.</td>
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<td>35.</td>
<td>I wouldn’t know what to say to a young person with autism.</td>
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<td>36.</td>
<td>I would like to hang around with a young person with autism.</td>
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</table>
THE PEOPLE IN MY CLASS - WORKING

Below is a list of all of the children in your form group. For each person, we would like you to say how much you like to work with them in class. You can see that there are four choices for each person. You would tick the ‘?’ box if you do not know the person well enough to decide. If you like to work with the person, tick the ‘YES’ box. If you do not like to work with them, tick the ‘NO’ box. If you like to work with them sometimes, tick the ‘SOMETIMES’ box.

Please provide an answer for each person in your form group. When you get to your own name, simply cross it out. There are no right or wrong answers, and no one at school will see your answers.

<table>
<thead>
<tr>
<th>Do you like to work with...</th>
<th>?</th>
<th>YES</th>
<th>SOMETIMES</th>
<th>NO</th>
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Appendix 4.10

Social Inclusion Survey (SIS)
THE PEOPLE IN MY CLASS – SPENDING TIME TOGETHER

Below is a list of all of the children in your form group. For each person, we would like you to say how much you like to spend time with them at break or lunch. You can see that there are four choices for each person. You would tick the ‘?’ box if you do not know the person well enough to decide. If you like to spend time with the person, tick the ‘YES’ box. If you do not like to spend time with them, tick the ‘NO’ box. If you like to spend time with them sometimes, tick the ‘SOMETIMES’ box.

Please provide an answer for each person in your form group. When you get to your own name, simply cross it out. There are no right or wrong answers, and no one at school will see your answers.

<table>
<thead>
<tr>
<th>Do you like to spend time at break and lunch with…</th>
<th>?</th>
<th>YES</th>
<th>SOMETIMES</th>
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### Teaching Assistant and student observation schedule

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<tr>
<th>Lesson:</th>
<th>Time of Lesson: Start/Middle/End</th>
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<td></td>
<td>Facilitative Behaviour</td>
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<tr>
<td></td>
<td>Adult fade back</td>
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<td>Minute 1</td>
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<td>Minute 2</td>
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<td>Minute 3</td>
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<td>Minute 4</td>
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<td></td>
<td>Minute 5</td>
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<td></td>
<td>Fictional task</td>
</tr>
<tr>
<td></td>
<td>Prepare in advance for social interaction</td>
</tr>
<tr>
<td></td>
<td>Move students together</td>
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<tr>
<td></td>
<td>Prompt to be social</td>
</tr>
<tr>
<td></td>
<td>Look for appropriate social opportunities</td>
</tr>
<tr>
<td></td>
<td>Prompt to engage successfully</td>
</tr>
<tr>
<td></td>
<td>Model behaviour</td>
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<tr>
<td></td>
<td>Interpret behaviour</td>
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<td></td>
<td>Connect with peers</td>
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<td></td>
<td>Peer mentors</td>
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<td></td>
<td>Highlight similarities</td>
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<td></td>
<td>Purposeful error</td>
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<td>NOTES</td>
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<tr>
<th>Student Interaction</th>
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<td>Minute 1</td>
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<td>Minute 2</td>
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<td>Minute 4</td>
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<td>Minute 5</td>
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<th>NOTES</th>
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Appendix 4.12

Sample social-skills group session checklist

**Attention autism – Week 6**

**Guidelines for adults**
- All adults in the room are part of the group
- The adults in the group are **modelling behaviours they wish to encourage** so they should:
  - Maintain attention at all times
  - Look interested in activities
  - Show enjoyment in activities
- The group leader will do the ‘talking’ – other adults should limit what they say. They can make simple statements about the activities, such as ‘that’s cool’, and they should reinforce what is being said by the group leader
- Avoid addressing minor behavioural issues. The group leader should address these issues by **praising correct behaviour and ignoring incorrect behaviour**
  - The other adults can intervene if a pupil becomes very disruptive
  - Avoid getting engaged in questions/discussions with the pupils. If the child keeps on questioning, can say ‘now is not the time for questions. We’ll have questions later’

**Guidelines for group setup**
- The pupils should sit in a semi-circle facing me, and have a clear view of the activities, but be far enough away to not touch the materials
- Ensure there are no distractions during the group e.g. turn of computers, put a ‘do not disturb’ sign on the door, switch of phones etc.

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<tbody>
<tr>
<td>1</td>
<td><strong>Preview</strong></td>
</tr>
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<td>2</td>
<td><strong>The Box</strong></td>
</tr>
<tr>
<td>3</td>
<td><strong>Getting in the Zone</strong></td>
</tr>
<tr>
<td>4</td>
<td><strong>Attention builder – Demonstration</strong></td>
</tr>
<tr>
<td>5</td>
<td><strong>Attention builder – Participation</strong></td>
</tr>
<tr>
<td>6</td>
<td><strong>Review</strong></td>
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**Materials**

Tool Box:
Pin art and various objects e.g. scissors, sellotape, pen.
Sour sweets
8 x paper plates
8 x cans of shaving foam
24 x bottles of poster paint (different colours)
8 x spoons
Session 4 - ASC

Materials

- Powerpoint
- ‘Ask Adam’ and ‘Ask Adam about exams’ videos
- Question box

[Answer any questions from the question box]

“For the last three weeks we have been learning about different disabilities. Some of these disabilities you can see – like when someone is in a wheelchair. Others can be more difficult to see at first, such as __________. We call these kinds of disabilities ‘hidden disabilities’. Just because you can’t see the disability, that doesn’t mean the person with it doesn’t experience any problems. They still need help from the people around them to live a healthy, happy life. So, just like a person who is blind may need a guide dog to help them cross the road, a person with a hidden disability also needs help. Today we are going to look at a hidden disability called autism. Autism is short for ‘autism spectrum disorder’, and it includes a syndrome called Asperger syndrome. [Slide 1] About 1 in every 100 people have autism, which means it is very likely that some pupils in your school have autism. Does anyone know how many pupils go to your school? [wait for answer] ok, so roughly how many pupils in your school might have autism? [wait for answer] Therefore it is important to learn about what autism is, so that you can help support those pupils in your school with the disability.

Firstly, I would like to know if any of you have heard of autism before? Please raise your hand if you have. [wait for answer] And how many of you think you know what autism is? Please raise your hand if you think you do. [wait for answer] We will now watch a short video made by a school pupil with Aspergers, which remember is a type of autism. In this video, the pupil, called Adam, explains what autism is. [Slide 2-watch Ask Adam video from beginning until 3:13 when he says ‘in my opinion, it is good to be a little different’]

[Slide 3] From this video, we have learnt that people with autism may think, act and speak differently to people without autism. This is because autism is a disability they are born with that affects the way they communicate with other people, and understand the world around them. This means that they can find some things difficult, such as understanding when someone is joking, or starting a conversation. Here is another clip from Ask Adam, showing a communication problem a pupil with autism might experience. [Slide 4 – watch Ask Adam video clip from 3:14] What does this clip tell us about the problems a pupil with autism might experience? [discuss]

[Slide 5] Let’s watch one more clip, showing another situation that a person with autism might find difficult. [watch Ask Adam about exams video from 6:40] What does this clip tell us about the problems a pupil with autism might experience? [discuss]

Hopefully you now understand a bit more about what autism is, and how the disability affects people who have autism. Just to check, please raise your hand if you think you
know what autism is now. [wait for answer] Over the next few weeks we will be learning more about autism, and what you can do to help support pupils with autism in your school. If you have any questions about what we have discussed today, please feel free to write them down and put them into the questions box, so that I can answer them at the start of next week’s session.”
Appendix 4.14

Sample peer awareness poster

Autism is a disability that you are born with. It can be a hidden disability or a visible disability. There is no actual cure for autism so you have it for life and it may be genetic so you pass it onto your kids.

Autism affects people because you act differently for example you might respond to people in a different way. You may think differently so you have hobbies and have stronger senses. You also may communicate differently so you might find it hard to make friends.

Autism can affect your learning it can help it because you have a good imagination and it doesn’t help because you may not be able to count or do sums.

People with autism have feelings that are very strong so you may wear 1 pair of shoes but may feel sad for the other pair. You may be getting bullied and your scared and don’t know what to do.
Appendix 4.15

Student interview schedule

1. Do you like coming to school? What do you like about it? Is there anything you don’t like about it? What?
2. Do you have someone helping you in your lessons? Why do you think you have someone to help you? What sorts of things do they help you with?
3. Are there any things at school that you find difficult to do? Are you able to do your schoolwork ok, or do you find it difficult? What lessons do you like the most? Which ones do you like the least? Why?
4. Do you have any friends at school? Who? What do you do with them? Do you spend break and lunchtimes with them? Do you work with them in lessons? Do you ever see them outside of school, such as at the weekends? Do you have other friends who don’t go to this school? How did you meet them? What sorts of things do you do with them?
5. Do you ever find it difficult to make friends with people? Can you remember a time where you wanted to be friends with someone, but it didn’t work out? What happened?
6. Are the other pupils in this school friendly?
7. Have you heard of bullying before? What do you think bullying is? Can you give me some examples? Do you think you have ever been bullied at this school? What happened? Are you still being bullied now?
8. Have you heard of the word ‘autism’ before? Do you know what it means? Do you know anyone who has autism? How does it affect them – does it make it hard for them to do certain things? Does it make it easier for them to do certain thing?
Teaching Assistant interview schedule

1. How long have you been working here?
2. What training/prior experience of autism did you have before you started working here?
3. What training have you had since you started working here? Would you like any more training, and if so, what for?
4. Do you only support pupils with autism?
5. What do you find most difficult about supporting pupils with autism? Can you give some examples?
6. How much do you think [student’s name] autism effects how able they are to do their school-work?
7. How much do you think [student’s name] autism effects how well they are able to make friends and interact with peers?
8. What problems do you think [student’s name] have when it comes to interacting with other pupils?
9. Do you do anything to try and support [student’s name] in interacting with their peers? If so, what sort of things – can you give some examples?
Appendix 4.1

Implications of study one for the design and content of RESII

The social-skills group was the most feasible component of RESII to implement, and the Attention Autism programme seemed appropriate for use within a mainstream secondary school setting. There were, however, three changes made to the programme as a result of the findings from study one. Firstly, to ensure the smooth running of the group, and to minimise disruptive behaviour, it was decided that the students should devise some group rules in the first week. These rules would be revisited at the start of each session, and referred to throughout as appropriate. Secondly, to increase the likelihood of the students interacting with each other during the activities, greater emphasis was placed on them working together during tasks. In particular, they would be encouraged to approach other students for help, rather than the adults in the room. Thirdly, the school SENCo would be asked to identify any adults who would support the delivery of the Attention Autism programme prior to the start of the intervention, so that the researcher could ensure they were all aware of the group guidelines, and emphasise the importance of following them.

The peer-awareness campaign was the least feasible component of RESII to implement, and this seemed to be related to time constraints at the school and teacher level. At the school level, it was not possible to deliver the peer-awareness campaign to the group of students with whom the focal students spent the majority of their lessons, because a suitable time to do so could not be found. This is not surprising, given that it can often be a struggle to find the time for non-academic interventions in secondary schools (Berman & McLaughlin, 1976; Greenberg et al., 2005; Lendrum et al., 2013). Fraser & Galinsky (2010) propose that these difficulties can be overcome if the content of the intervention complements the curriculum being followed. As noted earlier in this chapter, it was felt that this wasn’t necessarily possible for the campaign, as there are no statutory curricula under which the content would fall (Department of Education, 2013). Thus, no solution was found to this problem at this stage of the intervention research. At the teacher level, it was not possible to deliver some of the session content because the teacher was not available to allow the session to start and/or to enable access to the IT equipment needed to display the PowerPoint presentation. To prevent this in the future, it was decided that an agreement should be made between the relevant school staff and the researcher that the researcher could begin the session even if the teacher wasn’t present, and would be given access to the school IT system so that they could display the PowerPoint presentation.

The finding that the peer-awareness campaign did little to raise awareness of, and attitudes towards, students with ASC led to changes to the session content. Firstly, one session was removed to allow for an additional session on ASC to be included. Since sessions four to seven were essential to raising awareness of ASC and session eight was required to produce the student posters, which were used as an outcome measure, it was decided that one of the first three sessions would be removed. Sessions one to three focused on the acceptance of difference, with session three focusing on ways to support a student with a hidden disability. Since this exercise would be repeated in sessions five and six in relation to a fictional student with ASC, and since sessions one and two were key to introducing the notion of ‘hidden’ differences, session three was selected as the most appropriate session to remove, without reducing the extent to which the core aims of the peer-awareness campaign were met (see Appendix 3.3). The new session three
comprised a 14 minute video giving an overview of ASC, and session four was amended to provide more varied examples of the ways in which ASC can manifest itself, to ensure that ‘anger’ was not emphasised. See appendix 5.1 for the amended peer-awareness campaign schedule.

A question box had been placed in the classroom for the peers to place any questions they had about the session content. It was hoped that these questions would indicate to the researcher where misunderstanding were, or to identify gaps in knowledge. However, as no questions were placed in the box, it was difficult for this formative assessment to take place. To increase the likelihood of questions being asked in the future, it was decided that at the end of each session each student would be given a Post-It note, and instructed to write down a question related to the session, which would then be answered at the start of the following session.

Finally, the TA training appeared feasible to implement but, as with the peer-awareness campaign, timing appeared to be an issue. This lead to a group of TAs being trained at the same time, rather than individually as intended. As with the peer-awareness campaign, it was not clear how this school level barrier could be addressed, and so no solution was provided at this stage. Since there was no evidence of the TAs using the FBs taught in the training session, they were renamed to make them clearer and more distinct, in the hope that they would be remembered more easily. In line with this, any similar FBs were combined into one FB, reducing the number of FBs to be recalled. The FBs would be presented to the TAs on a piece of laminated A5 card after the training (appendix 5.2). It was hoped that in this format the TAs would carry them around with them, and be able to refer to them when needed.

The essential programme elements and accompanying fidelity criteria did not change as a result of study one, and these criteria were used in the second study, reported in chapter five of this thesis.

Whilst not related specifically to the feasibility data reported in this chapter, one other important implication of study one concerns the school involved in the study. As mentioned in section 4.1.3, the school that participated in study one was self-selecting: they participated in the study willingly, and had reason to support the implementation of RESII (e.g. due to the increasing number of students with ASC due to attend the school). Although this may have increased the extent to which some elements of RESII were implemented as intended, it is a concern is that there were still school-level factors negatively influencing the extent to which the peer-awareness campaign and TA training were implemented as intended. Although no suggestions to address these factors were identified at this stage, it was hoped that these school-level barriers could be examined further in study two, which included four schools.
Appendix 4.18

Implications of study one for the selected outcome measures

This section outlines the changes made to the selected outcome measures following study one. In this study, a measure was regarded as suitable if it was understandable to participants (e.g. could be completed without the need for detailed instructions) and did not result in large amounts of missing or unusable data (e.g. data irrelevant to the issue understudy). Two measures were used to assess the feasibility of implementing the intervention within a mainstream secondary school setting: session checklists and fieldnotes. These measures generated adequate data regarding adherence and exposure to the essential programme elements, and as such were included in study two, with one adjustment. The data collected only provided information about the structural fidelity of RESII. Whilst this is recommended at the early stages of intervention research (Mowbury et al., 2003), the data did not allow insight into the views or experiences of the participants, such as their level of engagement in the intervention. A key methodological aim of RESII was to include the views of school staff and students throughout its design and development, thus ensuring greater educational utility. It was therefore decided that a measure of participant responsiveness to the intervention was needed. To measure this, the remit of the fieldnotes was expanded to capture data regarding participant engagement in the sessions (e.g. whether or not they appeared on task) as well as to record any conversations that made reference to participant responsiveness (e.g. comments from school staff regarding the effectiveness of RESII).

Six measures were selected to assess the proximal and distal outcomes of RESII. Three of these (CATCH, SIS and peer posters) generated adequate data, whilst the remaining three (TA and student structured observations, student interviews and TA interviews) did not. Despite this, changes were made to all outcome measures, excluding the peer posters, as a result of study one.

The measure least successful in capturing the intended outcome was the TA and student structured observation schedule. This schedule was intended to generate data regarding TA use of FBs (proximal outcome) and social interaction (distal outcome), but it was not successful in this regard, possibly because the researcher had developed it based only on the written descriptions of it provided in the two papers from which it was drawn (Causton-Haris & Malmgrem, 2005; Malmgrem et al., 2005). The researcher created a new observation schedule based on a schedule design well used in educational research (Flanders, 1970, cited in Wragg, 1994). This allowed the FBs to be recorded in a more intuitive way, whilst maintaining the link between the FB used and any social interaction resulting from it. A more detailed description of the new observation schedule can be found in the measures section in chapter five.

The TA and student semi-structured interviews were also unsuccessful at capturing the intended outcomes. The interviews were used to generate data regarding the social skills of the students with ASC, TA use of FBs (proximal outcomes), social support, social acceptance and social interaction (distal outcomes). This was despite the fact that the researcher was extremely experienced in interviewing students with ASC (Symes & Humphrey, 2010) and their TAs (Symes & Humphrey, 2011a, 2011b). The main issue with the interviews was that topics relating to the outcomes of interest were not covered in sufficient depth, and both the focal students and the TAs tended to divert the conversation away from social issues. To improve this, the decision was made to structure the interviews around two quantitative questionnaires specifically designed to
capture the social experiences of students, including those with ASC: the Children’s Self-Efficacy for Social Interactions with Peers (CSESIP, Wheeler & Ladd, 1982) and the Social Responsiveness Scale (SRS, Constantino & Gruber, 2005). These questionnaires were chosen as they not only provide clear examples of social behaviour that can then be discussed in more depth, but also allow changes between data collection points to be more clearly identified. The questionnaires were completed via interview, ensuring that participants had the opportunity to raise and explore related topics that they felt were important to them. Further details of both questionnaires can be found in the methods section in chapter four.

The peer questionnaires were successful in generating data about peer awareness of ASC (proximal outcome) and the social acceptance of the focal students with ASC (distal outcome). As a result, this method of data collection was retained, but the instruments were replaced or refined to allow more data to be captured, which could be used for other proximal or distal outcomes. Firstly, the SIS, which provides a measure of social acceptance, was replaced with the Social Networks and Friendship Survey (SNFS, Kasari et al., 2011). This questionnaire has been used in a number of studies exploring the social experiences of students with ASC (Chamberlain et al., 2007; Kasari et al., 2011; Locke et al., 2012) including intervention studies (Kasari et al., 2012) and provides data on social support (i.e. friendships) as well as social acceptance, meaning it can be used to complement the data from the student interviews. This was seen as important, given the limited data generated for this outcome in study one. Secondly, a short version of the CATCH was used (Bossaert & Petry, 2013), and a vignette depicting a child with ASC was included at the start of the questionnaire, so that students could complete the measure even if they did not have prior awareness of ASC. It was hoped that these adaptations would reduce the level of missing data found in study one. Further details of both questionnaires can be found in the methods section in chapter five.
Revised peer-awareness campaign powerpoint content

What makes us the same and what makes us different?

In what ways are these athletes the same and different?

Are you like any of them? How are you different?

Same but different

Split into pairs. Each pair will have 30 seconds to find 5 things they have in common. One pair joins another pair. The foursome now has a minute to find something all 4 have in common. Each group can present the list of things they have in common. Repeat for what makes us different.

Some differences are obvious and some are hidden

http://www.youtube.com/watch?v=AIsQk5tSpwI&list=PL69D006AC406AFC77

Session 3

Autism

• Autism is short for "autism spectrum disorder", which includes Asperger syndrome
• One in every 100 people have autism
• How many pupils go to your school?
• How many pupils in your school might have autism?
What is autism?

People with autism

- Think differently
- Act differently
- Talk differently

They may find being with other people difficult, they have problems knowing what to say, and they find it hard to use their imagination.

Autism is a genetic disability. This means people are born with it, and they can’t change it. There is no ‘cure’ for autism.

Session 4

Autism

Think differently

- Special interests
- Sensitive to sights, sounds, tastes, smells and textures

Act differently

- People with autism may find some situations difficult to deal with:
- They might also play with toys or other objects in class
- Spend break and lunchtimes alone
- Make unusual noises/pull faces
Communicate differently

• People with autism might not know what they should say in some social situations, such as asking a friend about what they did at the weekend.
• They may not understand when someone is joking.
• They may find it hard to follow verbal instructions.

Instructions in English

1) Stand up
2) Say ‘hello’
3) Sit down again.

Why do pupils with autism need support?

• Children with autism can find it hard to make friends and make sense of the world around them.
• Nearly half of all children with autism are bullied.
• Three in every four children with autism feel unhappy and anxious about things.
• Because it’s not always obvious that people have autism, some people might think they are ‘mad’ or ‘naughty’.
• ‘This lack of understanding is one of the worst things about being autistic’.

What is autism?

• Autism is short for ‘autism spectrum disorder’, which includes Asperger syndrome.
• One in every 100 people have autism.

People with autism

• Think differently.
• Act differently.
• Communicate differently.

Autism is a genetic disability. This means people are born with it, and they can’t change it. There is no ‘cure’ for autism.
Keziah

Hello, my name is Keziah and I have autism. I am 11 years old and I go to high school. I really love reading and like to spend as much time as I can in the library. I go to the library at break and lunchtimes with my friend, Peter. I sometimes find it hard to be with all the other children because it is so noisy and it makes me feel stressed. When I am stressed I am not very good at telling people my feelings. Instead, I get really angry and sometimes run out of the classroom. The teacher has to spend time with me, trying to calm me down again. Some of the students in my class make fun of me and call me names, which makes me feel sad. I don’t have many friends because I feel too shy to speak to the people in my class, and I never know what to say to them. I don’t like it when things change, for example if my normal teacher is away and we have a new teacher instead. I wish that people would tell me when changes are going to happen, so I can get used to the idea.

Session 6

Solutions to the problems for pupils with autism and their class

Problems for Keziah - how can we solve them?

<table>
<thead>
<tr>
<th>Problems for your class</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our class is noisy, which will make her stressed</td>
<td>She will be shy so she won’t talk to anyone</td>
</tr>
<tr>
<td>She will find it hard to make friends as everyone is already in friendship groups</td>
<td>She doesn’t like change so she will find it hard to cope with all the new things in school</td>
</tr>
</tbody>
</table>

Session 7

Solutions to the problems for pupils with autism and their class

Problems for your class - how can we solve them?

<table>
<thead>
<tr>
<th>Problems for your class</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>When Keziah runs out of the lessons that might disrupt our work</td>
<td></td>
</tr>
<tr>
<td>Our class would need to be quieter all the time</td>
<td></td>
</tr>
<tr>
<td>If the teacher has to spend time with Keziah, they can’t teach us which will effect our learning</td>
<td></td>
</tr>
<tr>
<td>It might be hard to communicate with her because she has autism</td>
<td></td>
</tr>
</tbody>
</table>
How to be an ‘autism friendly’ classroom: Top Four Rules

• **Be quiet** – Keep the noise in your class down! Try whispering to each other!
• **Be friendly** – Invite other pupils to join your friendship circle. If you see someone on their own, ask them if they want to hang out with you
• **Be patient** – Give people the time they need to say what they want to say.
• **Be clear** – Express yourself as clearly as you can so that there are no misunderstandings. If you think someone hasn’t got what you’re trying to say, try and explain it again more simply.

Being friends with someone with autism

• Do you think a person with autism would be a good friend? Why?
• People with autism tend to be:
  ▫ Loyal – They will stand by their friends
  ▫ Truthful – They won’t normally tell lies
  ▫ Good at remembering things – their memory has been found to be better than people without autism!
• In fact, some scientists and doctors say that autism is not a bad thing. People with autism are better at doing some things that people without autism!

The positive side of autism

• Some (but not all!!!) people with autism have special talents which are amazing!!!
• Great dancer!!!
• [http://www.childline.org.uk/Explore/Life/Pages/Autism.aspx](http://www.childline.org.uk/Explore/Life/Pages/Autism.aspx)
• Child genius!!![http://www.childline.org.uk/Explore/Life/Pages/Autism.aspx](http://www.childline.org.uk/Explore/Life/Pages/Autism.aspx)
• [http://www.youtube.com/watch?v=IfbXvF6vHXw](http://www.youtube.com/watch?v=IfbXvF6vHXw)
• Amazing artist!!!
• [http://www.youtube.com/watch?v=nDOeXSgS170](http://www.youtube.com/watch?v=nDOeXSgS170)

Session 8

Teaching other pupils about autism

What is autism?

• Autism is short for ‘autism spectrum disorder’, which includes Aspergers syndrome
• One in every 100 people have autism

People with autism
• Think differently
• Act differently
• Communicate differently

Autism is a genetic disability. This means people are born with it, and they can’t change it. There is no ‘cure’ for autism.
Task

• Make a poster or leaflet that will teach other pupils in your school about autism
• You should include:
  • What autism is
  • The kinds of things a person with autism might find difficult (give examples)
  • How to help a person with autism overcome these difficulties (give examples)
  • The strengths that people with autism have
STRATEGIES TO IMPROVE SOCIAL SKILLS

**Step back** - find a real or fictional task to do whilst the student is working. If you are not going to be sat next to them, remind them to talk to those around them, and tell them who they should ask if they need help.

**Prompt** – look for appropriate social opportunities, such as paired work. Prompt them so that they can interact successfully. For example, tell them what they should say or ask next if they are having a conversation. Interpret the behaviours of their peers so that they understand what is going on.

**Match them with classmates** – move students together. If you need to sit next to the student, make sure you are not sat in between them and another pupil. Highlight similarities between your student and their peer. Make purposeful errors, such as not photocopying enough sheets, so that the student has to work with somebody else.

Make the most of those times in the school day when peer interactions are most likely
Recruitment email

Dear (name)

I hope you don’t mind me contacting you. I am a PhD student at the University of Manchester and I have developed an intervention that I hope could be used to facilitate the social inclusion of pupils with ASD. I am currently looking for four schools in which to run this intervention, so that I can establish its efficacy, and I wondered if your school might be interested in taking part? The intervention has three key components: (1) one-to-one social-skills training for pupils with ASD, (2) a whole-class awareness campaign about ASD and (3) training for teaching assistants in how to provide opportunities for, and to support, the social interactions of pupils with ASD and their peers. I would come to the school on a weekly basis to deliver the intervention for eight weeks (a total of two hours per week). The intervention would involve two pupils with ASD, their teaching assistants and their form groups. I would also be collecting data through questionnaires, interviews and observations at three time points over a period of four months. I am happy to arrange all intervention delivery and data collection at times that are most suitable for the school, so as to cause minimum disruption.

If you think you would be interested in taking part, then please email back or call me on 0161 275 3335 and we can discuss the project further.

I hope to hear from you soon,

Best Wishes,

Wendy Symes
## Children’s Self-Efficacy in Peer Interactions (CSEIP)

Circle the response that best describes how well you can do the following things. HARD! Means it is really hard for you and EASY! means it is really easy for you, hard and easy means it is a little bit hard or easy for you.

| 1. Some kids want to play a game. Asking them if you can you play is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 2. Some kids are arguing about how to play a game. Telling them to stop is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 3. Some kids are teasing your friends. Telling them to stop is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 4. You want to start a game. Asking other kids to play the game is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 5. A kid tries to take your turn during a game. Telling the kid its your turn is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 6. Some kids are going to lunch. Asking if you can go with them is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 7. A kid cuts in front of you in line. Telling the kid not to cut is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 8. A kid wants to do something that will get you into trouble. Asking the kid to do something else is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 9. Some kids are making fun of someone in your classroom. Telling them to stop is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 10. Some kids need more people to be on their teams. Asking to be on the team is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 11. You have to carry some things home from school. Asking another kid to help you is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 12. A kid always wants to be first when you play a game. Telling the kid that you are going first is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 13. Your class is going on a trip and everyone needs a partner. Asking someone to be your partner is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 14. A kid does not like your friend. Telling the kid to be nice to your friend is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 15. Some kids are deciding what game to play. Telling them what game you like is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 16. You are having fun playing a game but other kids want to stop. Asking them to finish playing the game is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 17. You are working on a project. Asking another kid to help is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 18. Some kids are using your play area. Asking them to move is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 19. Some kids are deciding what to do after school. Telling them what you want to do is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 20. A group of kids wants to play a game that you don’t like. Asking them to play a game that you like is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 21. Some kids are planning a party. Asking them to invite your friend is __?__ for you. | HARD! | Hard | Easy | EASY! |
| 22. A kid is yelling at you. Telling the kid to stop is __?__ for you. | HARD! | Hard | Easy | EASY! |
Appendix 5.5

Revised CATCH

Name: ___________________________________ Form group: ____________
Age: ______________ Are you a boy ☐ or a girl ☐? (please tick the correct answer)
Please read the following information carefully:

Jack is in year 8 and he goes to a school like yours. He finds his schoolwork quite easy to do, and
often puts his hand up in class to answer the teachers’ questions. His favourite subject is science
and he knows a lot about the solar system. He is also really interested in Manga, and he will talk
about this for ages – he doesn’t notice when his classmates lose interest! He also doesn’t realise
when people are joking. For example, one day when a fire broke out in the school, one of the
pupils jokingly said that she would make the most of it and use it to toast marshmallows. Jack
believed that she was really going to do this and told her it was dangerous, instead of laughing.

Jack finds it hard to concentrate in lessons if his classmates are talking or being noisy. This can
make him feel very anxious. Jack also finds it difficult to make friends and he often gets shy
when he meets new people. He is never sure of what he should say or how he should act around
his classmates. Because of this, he often spends break and lunchtimes alone.

Imagine that Jack has just moved to your school

Please answer the questions below, by ticking the box that best matches the way you feel. Do
not spend too much time on each question. This is not a test and there are no right or wrong
answers – I am just interested in what you think. No one in your school will see your answers.

<table>
<thead>
<tr>
<th>I would like it if Jack lived next door to me</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree or disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would be happy to have Jack as one of my best friends</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would be pleased if Jack invited me to his house</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would feel good doing a school project with Jack</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would invite Jack to sleep over at my house</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would tell Jack my secrets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would enjoy being with Jack</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Friendship Survey

- What is your name? _______________ How old are you? _______
- Are you Male or Female? (Please draw a circle around your answer)
- Are there any people in your form group that you like spending time with (like at break and lunchtime, or in lessons)? Please write their names below.

- Circle the names of the three people you most like to spend time with
- Put a star* next to the one person you most like to spend time with
- How often do you spend time with the person with a star next to their name? (please draw a circle around your answer)

  almost everyday    sometimes    only once in a while

- Are there any people in your form group that you don’t like to spend time with? Please write their names below

- Are their people in your form group who like to spend time with each other? Please write their names below and draw circle around each group.

REMEMBER to think about boys AND girls! REMEMBER to include yourself if you spend time in a group.
# Teaching Assistant and Student Observation Schedule

<table>
<thead>
<tr>
<th>TIME 1/2/3</th>
<th>PUPIL</th>
<th>TA</th>
<th>LESSON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No social interaction</td>
<td>Academic or classroom related questions/answers</td>
<td>Comments or directive statements (verbal or non verbal), academic in nature</td>
</tr>
<tr>
<td>TA sits/stands within arms reach of the pupil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real/ Fictional task</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare in advance for social interactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looking for appropriate social opportunities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt to engage successfully</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpret behaviour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Move students together</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highlight similarities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purposeful error</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TA sits/stand not within arms reach of the pupil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 5.8

Research quality

Research quality is important as it determines ‘...the strength of warrants for the relation between the research process and its representation of the world.’ (Furlong & Oancea, 2005, p.12). This is particularly important for studies examining the impact a particular intervention or treatment has on its targeted outcomes (Field & Hole, 2003). Research quality in experimental studies, such as RCTs, can be assured through designing studies that have good internal and external validity (Cohen et al., 2007; Goodwin & Goodwin, 2012). This section will outline how these two issues were addressed throughout the design and reporting of study two, starting with internal validity.

Internal validity

Internal validity refers to the extent to which changes observed in dependent variables can be attributed to the independent variable (Mertens, 2009). Since an aim of study two was to begin to establish the efficacy of RESII, ensuring internal validity was an important concern. Internal validity can be threatened in two key ways: time (Mertens, 2009) and the participant sample (Goodwin & Goodwin, 2012). Beginning with the first of these, studies that occur over an extended period of time (such as study two which took place over 34 weeks) are at risk of history and maturation effects (Cohen et al., 2007; Field & Hole, 2003; Goodwin & Goodwin, 2012), which is where events unrelated to RESII result in changes to the targeted outcomes; testing effects (Field & Hole, 2003; Mertens, 2009), whereby participants’ experiences of completing outcome measures prior to receiving RESII can influence their outcomes post intervention; and strength of the experimental treatment (Mertens, 2009), which is the length of time required for RESII to impact on the targeted outcomes. The former two of these threats can be accounted for by the inclusion of a control group (Field & Hole, 2003; Goodwin & Goodwin, 2012). If the group receiving RESII achieves the expected outcomes, whilst the control group does not, the changes can be attributed to RESII. If RESII and control groups report similar, or unexpected outcomes, however, then it is likely that threats to internal validity exist (or that RESII was ineffective). Study two used an RCT design, which included a waitlist control group. This allowed potential history and maturation effects, and testing effects to be accounted for. The latter threat can be accounted for by ensuring data collection occurs at the appropriate time to capture intervention effects (Gersten et al., 2005). Therefore, in study two, data was collected both prior to and immediately following RESII, to capture any immediate effects, and, for the two schools that received RESII first, follow-up data was collected to assess the longer-term outcomes.

Issues with the participant sample are the second potential threat to internal validity. Issues can include group threats (Field & Hole, 2003; Mertens, 2009), attrition (Cohen et al., 2007; Goodwin & Goodwin, 2012) and experimenter effects (Field & Hole, 2003; Mertens, 2009). With regards to the first of these, group threats are concerned with the extent to which RESII and control groups are different to each other at the start of the study (Mertens, 2009). The most common way to account for this is randomisation to research condition (Field & Hole, 2003), and, as a result, randomisation was used in study two (albeit at the school, rather than participant level). Attrition, also known as subject mortality (Goodwin & Goodwin, 2012), relates to participants dropping out of a study before it is completed. The concern is that the sample that remains is qualitatively
different in some way to the sample that began the study (Cohen et al., 2007). Pretest measures enable potential differences between the participants who did and didn’t complete the study to be identified (Field & Hole, 2003; Goodwin & Goodwin, 2012), and this study included measures of all target outcomes prior to RESII, allowing potential differences to be identified.

Experimenter effects refers to either the way in which the researcher may inadvertently bias the results through their actions (Field & Hole, 2003; Mertens, 2009), or the extent to which participants respond in ways they think the researcher wants them to (Bauminger, 2002; Field & Hole, 2003). This was of particular concern to study two, where the same researcher delivered and evaluated RESII. Due to the stage of intervention research, it was not appropriate to conduct a double blind trial, whereby outcome data was collected by a researcher unconnected to RESII (Field & Hole, 2003). Therefore, the impact of experimenter bias was addressed in three key ways. Firstly, data pertaining to each targeted outcome was collected using more than one source or measure, strengthening conclusions that could be drawn (Robson, 2011). Secondly, participants were explicitly told that the data was being used for formative purposes, so it was important for them to be honest (MacKay et al., 2007). Thirdly, in so far as it was possible, participants were not directly asked about their perceptions of RESII, to reduce the extent to which they answered in socially desirable ways (Field & Hole, 2003). It is acknowledged, however, that these three approaches may not have been sufficient to guard against experimenter effects, and their potential impact is considered further in chapter six.

**External validity**

External validity (Field & Hole, 2003), also known as generalisability (Mertens, 2009), refers to the extent to which the findings from a study are generalizable to other populations, settings and times (Goodwin & Goodwin, 2012). It is important to note that no single study is likely to ascertain all three of these. Rather, generalisability is built up over a series of studies, conducted using different participants and settings, and across different time periods (Goodwin & Goodwin, 2012). Indeed, step three of the framework guiding this thesis recommends running a number of studies at this stage, which would enable generalisability to be assessed. Nonetheless, it is still important for all studies to be designed with key threats to external validity in mind, such as the failure to describe independent variables explicitly (Cohen et al., 2007; Furlong & Oancea, 2005; Mertens, 2009) and the invalidity or unreliability of outcome measures (Cohen et al., 2007; Mertens, 2009; Rossi et al., 2004).

With regards to the former, such detail is crucial for replication (Cohen et al., 2007). This threat was addressed in this thesis by describing RESII in detail (Furlong & Oancea, 2005, see chapter 3); including details of the study participants (Gersten et al., 2005, section 5.1.2); delivering RESII with the use of scripts and checklists to ensure it was delivered in the same way on each occasion (Cohen et al., 2007, see appendices 4.12, 4.13 and 3.5); and measuring how much of RESII was received (treatment fidelity, Gersten et al., 2005; Mertens, 2009, this chapter). The threat regarding the outcome measures was addressed through the use of triangulation (Chen, 2006; Robson, 2011); using measures to capture both proximal and distal outcomes (Gersten et al., 2005) and using measures with demonstrable validity and reliability in so far as that was possible. Despite attempts to ensure study two was safe from threats to external validity, however, the fact that it was conducted on a small sample and used outcome measures
primarily selected for their appropriateness to the aims of the research (rather than their validity and reliability), mean that any conclusions regarding generalisability must be made with caution, and with reference to the population, setting and time in which the study occurred (Goodwin & Goodwin, 2012).