Does the Circle of Friends intervention have a positive impact on the social inclusion and happiness of children with a hearing impairment?

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Abstract

If children do not experience social inclusion, this can have a negative impact, both in the short- and long-term, such as aggression, poor academic attainment, reduced social skills and psychopathological symptoms. The causes of social exclusion are complex and incorporate many factors, including aggressiveness, shyness and social competence, and the influence of peers. Children with a hearing impairment (HI) have been shown to be at risk of difficulties with social skills.

This study evaluates the effectiveness of Circle of Friends (CoF – Newton & Wilson, 2003), a peer support intervention, in improving the social inclusion of four children with a HI who were identified as having issues with social inclusion and friendships by Teachers of the Deaf. The multiple-baseline AB single-case experimental design utilised sociometric data, and was supported by pre-post measures of the children's happiness and social, emotional and behavioural adjustment.

Findings indicate that CoF had some impact on the peer acceptance for all pupils. There was moderate evidence for one pupil, a change in composite score for another, and positive trends for the other two pupils. There appeared to be a small impact on ratings of pro-social behaviours for two of the pupils. There was an improvement (reduction) on one of the pupil's 'neutral' ratings, but no impact on pupils' 'unsure' ratings. There was variable evidence to suggest an impact on peer rejection or adult ratings of behaviour difficulties. There was strong evidence to indicate an improvement for one pupil, moderate evidence for another and none for a third. The final pupil's peer rejection had a negative trend. The CoF did not improve happiness scores or adult ratings of pupils' emotional distress.

Findings are discussed in relation to relevant literature. Methodological issues and ethical concerns are discussed, and implications for future practice and research are considered.

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1 Introduction

1.1 Social Inclusion

1.1.1 Social Inclusion in Society

The term ‘social exclusion’ was originally coined in France in the 1970s by author Lenoir (1974, cited in Morgan, Burns, Fitzpatrick, Pinfold, & Priebe, 2001) as ‘les exclus’ to refer to people who “fell through the social insurance system safety net, for example lone parents and the uninsured unemployed” and other people on the margins of society (p. 478). More recently, Burchardt, Le Grand and Piachaud (2002) adopted the working definition “an individual is socially excluded if he or she does not participate in key activities of the society in which he or she lives” (p. 30). They suggested it is relative to the time and place in question, occurring through constraint rather than choice. More specifically, Boardman (2010) suggested social exclusion “refers to the extent to which individuals are unable to participate in key areas of the economic, social and cultural life of society” (p. 10).

1.1.2 Social Inclusion in School

Inclusion of pupils with special educational needs (SEN) is encouraged in the Special Educational Needs Code of Practice (DfE, 2014). The Convention on the Rights of the Child (United Nations, 1989) advocates that children are as ‘integrated’ as possible. Lindsay (2007) suggests ‘integration’ differs from ‘inclusion’, with the former implying the learner has to adapt to the environment, and the latter referring to the host adapting to meet the pupils’ needs. However, “this distinction is not always clear in practice” (p. 3). Farrell (2000) suggests inclusion within school involves “taking a full and active part

in school-life, be[ing] a valued member of the school community and be[ing] seen as an integral member" (p. 154).

Related to this is the idea of "removing the stigma associated with segregated placements, facilitating the modelling of appropriate social behavior by children with disabilities, and enhancing the social status of pupils with disabilities" (Roberts & Zubrick, 1992, p. 192). Therefore, it is important to not just look at the characteristics of the individuals who are targets of negative peer reactions, but also peers' perceptions of them (Hymel, 1986).

There have been a number of reviews comparing social outcomes of pupils with SEN within inclusive settings. They found that pupils with SEN are generally less accepted and more rejected than the typical developing pupils (Gresham & MacMillan, 1997; Nakken & Pijl, 2002).

1.2 Evidence-Based Practice

It is important that Educational Psychologists (EPs) ensure that recommendations are based on evidence, i.e. good quality, evaluative research (Fox, 2011; Frederickson, 2002; Gulliford, 2015). They should use practice-based evidence, personal experiences and theoretical frameworks to enhance their professional expertise and support professional judgment (Fox, 2011).

This research aims to build on the evidence-base for social support interventions and interventions for children with hearing impairments (HIs) by exploring the impact of a peer support intervention, Circle of Friends (CoF), on children with a HI.

1.3 Background of the Researcher

On a personal level, the researcher experienced a temporary HI until she was 3 years old, when an operation reversed the impact on her hearing. On a professional level, the researcher has visited a specialist school for the deaf and a unit attached to a mainstream school for children with a HI. The researcher learned some British Sign Language vocabulary when working with children with autism who were non-verbal. Regarding CoF, the researcher observed that the intervention had been suggested as part of the provision for a young person with a HI transitioning to secondary school, although the outcome of this intervention was unknown. These experiences have lead the researcher to be interested in supporting children with a HI.

1.4 Why the Researcher Chose this Topic

Keller is widely quoted to have said ‘blindness cuts us off from things, but deafness cuts us off from people’ (cited in Harrington, 2000). Similarly, “the heaviest burdens of disability arise from personal interaction and not from the impairment itself” (Dockrell, 1997, p. 106). This engenders a social rather than medical model of disability, highlighting the importance of considering a person’s disability within a social context where peers, amongst others, play a crucial part, rather focusing solely on the physical impairment (Swain, French, Barnes, & Thomas, 2004; Dockrell, 1997). .

This thesis therefore seeks to explore the social inclusion and peer relationships of pupils with HI educated in mainstream schools. It intends to examine these phenomena using a single case experimental design, to investigate the impact of implementing a peer support intervention (CoF – Newton & Wilson, 2003) on the social inclusion of the child with the HI. This leads to the consideration of what previous research has indicated about social inclusion and HIs, in the next section.

2 Literature Review

2.1 Introduction

This chapter focuses on reviewing the literature relevant to the topics covered as part of this research. It starts by looking broadly at definitions of social inclusion and interventions aimed at supporting the social inclusion of pupils, including CoF. It then moves on to examine HI and its impact on school-age children. A systematic literature review brings the concepts of social inclusion and HI together, by examining in detail the social skills and peer support interventions used to support primary-aged children with HI. The review concludes with an outline of the rationale for the research and the research questions posed.

In order to find suitable literature surrounding 'social inclusion', search terms related to this phrase and 'peer acceptance'/'rejection' were used.

2.2 Social Inclusion and Exclusion

Most of children's social interactions occur in school, a 'closed' environment (Asher & Paquette, 2003). Boxford (2006) suggests school is the second most important area of socialisation for young people, after family. Therefore, this literature review will focus on research undertaken in schools.

Koster, Nakken, Pijl and van Houten (2009) summarise the key themes linked to social inclusion, social integration and social participation, which they argue are used synonymously in literature (Figure 2-1). Their analysis of the literature identified four key themes that are important for the concept of social inclusion: friendships/relationships, contacts/interactions, perceptions of pupils with SEN, and acceptance by classmates. Then the ways these

themes are often measured are identified. The final theme is the main focus of the present study.

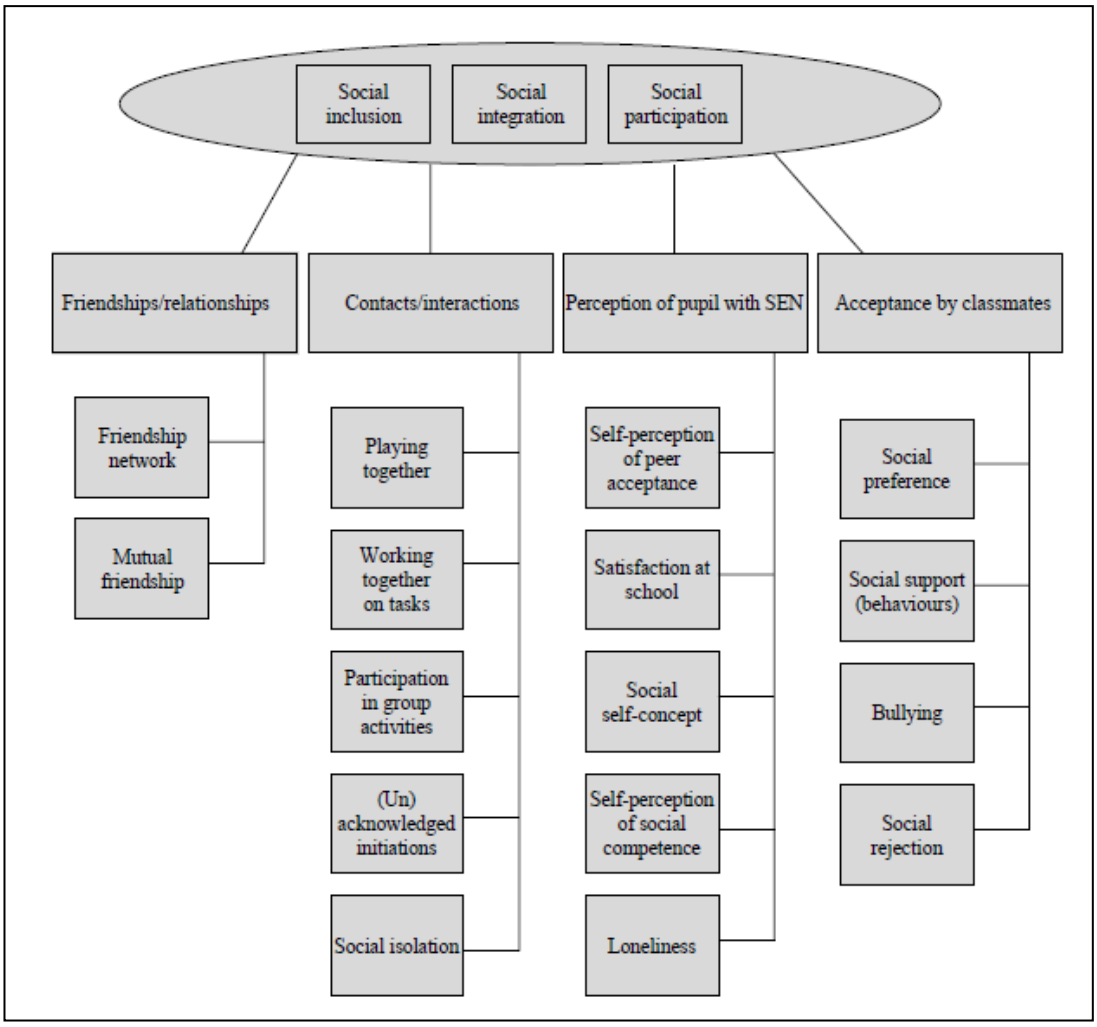

Figure 2-1 Overview of key themes and their aspects within social integration (and the related concepts social inclusion and social participation) from Koster et al. *(2009).*

2.2.1.1 Research into Peer Relationships

Sociometry is a reliable and systematic method of exploring peer relationships within a large peer group (Kosir & Pecjak, 2005). Sociometric classification terms (sociometric statuses) used throughout the literature on social inclusion/peer acceptance were developed by Coie, Dodge and Coppotelli (1982) and Newcomb and Bukowski (1983). These authors identified five sociometric classifications: popular (i.e. accepted) students

who are cooperative, and are well-liked by many peers and seldom disliked (‘*high social preference’*); rejected students who are uncooperative, and are frequently disliked and not well-liked (‘*low social preference’*); controversial students who are both liked and disliked (‘*high social impact’*); neglected students (also known as ‘isolates’) who score above average for shyness and withdrawal, and receive very few like or dislike nominations (‘*low social impact’*); and average students who receive an average number of like and dislike nominations (‘*average social impact and social preference’*). Acceptance and rejection are separate constructs, not opposites (Bukowski, Sippola, Hoza & Newcomb, 2000) and occur through a group process (i.e. in attitude and behaviours), rather than arise from an individual characteristic (Bierman, 2004).

A common measure used in sociometric studies is a behavioural nomination, where children identify peers who fit particular labels or descriptions (e.g. Criss, Pettit, Bates, Dodge and Lapp, 2002), which can be affected by reputational bias. This relates to the idea that perceptions of behaviour are influenced by prior attitudes and beliefs about the person (Hymel, Wagner & Butler, 1990).

Dodge, Murphy and Buchsbaum (1984) argue neglected children tend to be withdrawn and ignored by peers, while not being actively disliked (Bierman, 2004). If a child is rejected, they can experience feelings of loneliness. Parkhurst and Hopmeyer (1999) described loneliness as a feeling of isolation whilst wanting to be close and in contact with others; it is a subjective experience and an internal emotional state, as children can have friends but still feel lonely and vice versa (Asher & Paquette, 2003).

This thesis will use the following terms: ‘peer acceptance’ to refer to well-liked children, ‘peer rejection’ when discussing children who are disliked, ‘neglect’ when describing children who are not well-liked or disliked and ‘average’ for children who receive an average amount of like and dislike nominations (Coie *et al.,* 1982; Newcombe & Bukowski, 1983).

2.2.2 Factors That Impact On Social Inclusion

2.2.2.1 Theoretical Explanations of Peer Relationships

A model for peer relationships developed by Hay, Payne and Chadwick (2004) suggested early experiences (joint attention, emotional regulation, inhibitory control, imitation, causal understanding and language) led to harmonious interactions with peers. They further hypothesised that some difficulties experienced in friendships by children with developmental disabilities may be related to deficits in skills typically acquired in the first few years of life. Following on from this, the authors suggested several factors that could impact on each other to influence peer acceptance: negative emotion and problems regulating emotion, problems in social understanding (including Theory of Mind (ToM) and understanding intent), and problems in executive function. Moreover, the authors postulate these factors would impact on a child's pro-social behaviour, aggressiveness, and shyness, leading to problems with gaining acceptance (see Figure 2-2).

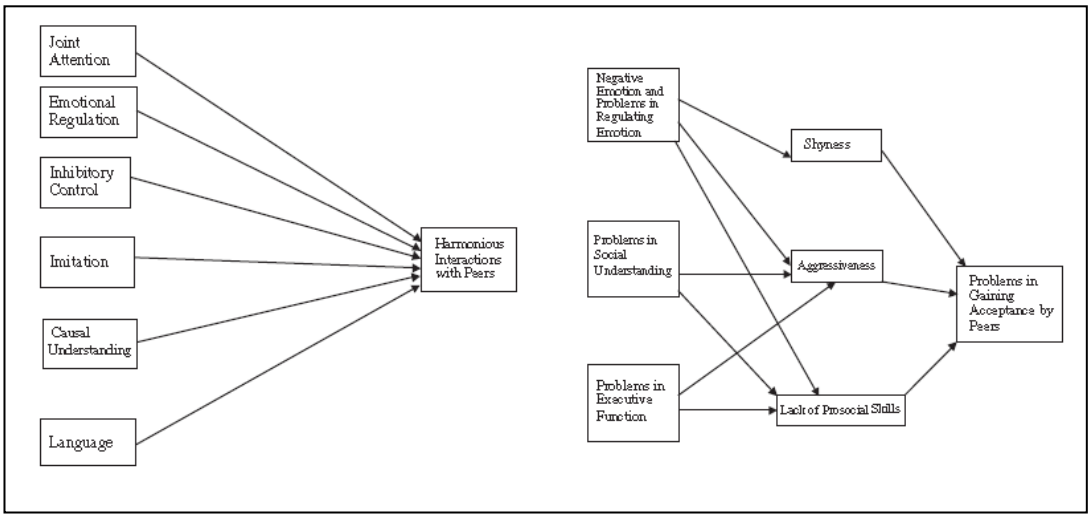

Figure 2-2 Hay et al. (2004) model. The model on the left shows the hypothesised developmental model. The model on the right relates to problems from pre-school and beyond.

In a narrative literature review, Bynner (2001) suggested social exclusion is a complex phenomenon encompassing risk and protective factors that interact

with each other (Rutter, 1990), along with wider social and economic policies. Garmezy (1985) identified three types of protective factors: child-based (e.g. personality and self-esteem); family-based (e.g. cohesion and warmth); and community-based (e.g. external support systems to reinforce coping). Risk factors include early life experiences (including early stress and pre-term birth), cognitive achievements, family circumstances, and temperament difficulties and behaviour problems (Rothbart & Bates, 1998; Dodge *et al*., 2003). Rubin, LeMare and Lollis (1990) suggested parents and parenting impact on development of social skills and relationships.

Another narrative literature review by Kupersmidt, Coie and Dodge (1990) suggested there were risk and protective factors in relation to peers and children's experiences with peers moderate the relationship between risk variables and outcomes. Positive peer experiences provide some resilience for a child at risk of negative outcomes, whereas additional stress from peer rejection can interact with existing problems and exacerbate the likelihood of negative outcomes. In his theory of peer rejection, Coie (1990) suggested there is a spiral of rejection, whereby children who have initial poor social skills and behaviour difficulties fail to gain entry to the peer group. Unable to practise and improve their social skills, they remain rejected.

Similarly, Dodge, Pettit, McClaskey and Brown's (1986) model of social competence proposed a sequence of social interactions creating a cyclical relationship between social behaviour and social information processing, which happens very quickly during interactions. They suggest social stimuli are context-dependent for the situation or task, and social behaviour (e.g. competent or deviant) depends on the way the child processes the social cues. Crick and Dodge (1994) reviewed and adapted the model to take into account new research around the connectionist approach in cognitive modelling and the use of a non-linear sequence. Other adaptations were based on research related to prior social knowledge, pre-emptive processing, emotions and attributions. The model incorporated reciprocal effects of many factors, including self-perception, goals, peer responses and social adjustment:

- Step one (encoding): requires attention, sensation and perception of cues that can be appropriate or inappropriate.
- Step two (interpreting of cues): involves representing and interpreting these cues in a meaningful way by applying a set of rules, which happens in microseconds.
- Step three (clarification of goals): formulate or clarify goals, which may be internal (e.g. related to feeling happy) or external (e.g. being first in line).
- Step four (response access or construction): involves accessing or generating potential behavioural responses to the cues.
- Step five (response decision): encompasses evaluating the responses and deciding which to proceed with.
- Step six (behavioural enactment): enacting the chosen behaviour.
- Then a peer judges the behaviour based on their social processing in the same way and responds.

Therefore, like Coie (1990), this model emphasises the importance of the peer group when considering social competence in individual children. In their original study, Dodge *et al.* (1986) tested this social competence model using 5-9 year olds. They used peer and teacher ratings of competence when entering a peer group, before assessing the pupils' social competence and assessing their entry into a peer group experimentally and in naturalistic situations. They found evidence for the model, with processing patterns predicting competence in encounters, and a relationship between social behaviour of a child and the peer's judgement and subsequent behaviour towards them. They hypothesised ineffective behaviours resulted from either failing to consider a step or responding in an inaccurate or biased way. Dodge *et al.* (ibid) concluded the model was consistent with Social Learning Theory (Bandura, 1977), but acknowledged the data was correlational and the model did not consider the impact of other factors (e.g. self-concept, loneliness or core organising principles), or how the processes occurred. These limitations and subsequent research lead to the development of the revised widely-cited model (Crick and Dodge, 1994 - Figure 2-3). Dodge and Price (1994) tested this model using video vignettes of three different social situations with 259 6-9 year olds, which are not naturalistic situations and take cross-sectional data, which reduces validity. They found the

children's behaviour depended on their social information processing patterns and their age.

2.2.2.2 Research into Peer Relationships

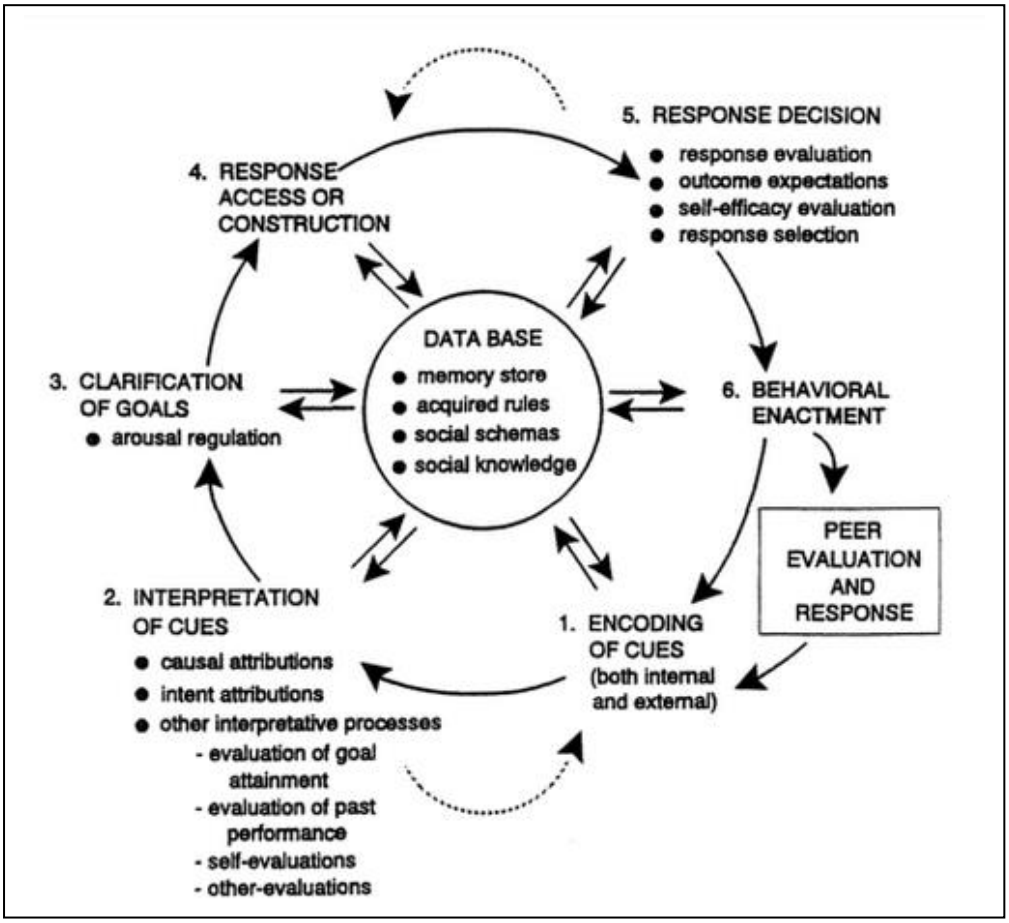

Figure 2-3 Crick and Dodge's model of social competence (1994)

Putallaz and Gottman (1981) did an experiment to compare entry behaviours of 60 6-9 year old popular and unpopular children (categorised by sociometric measures) in either a popular or unpopular dyad, through coding entry behaviours and the response (i.e. accepted, rejected or ignored by the dyads). The authors acknowledged the coding system did not explain other reasons for rejection, such as reputation and physical attractiveness. The experimental design means that demand characteristics could have impacted on the results, and reduce validity. Nonetheless, they found that whilst all children entered the group (i.e. began playing the game), peers

responded more positively to popular children's entry behaviours, who needed fewer attempts to enter the group. Both popular and unpopular children used all types of behaviours, although unpopular children were more likely to be disagreeable when entering groups. Dodge (1983) found similar results, with the quality of peer responses generally relating to the children's behaviour.

More recently, looking at factors from early childhood, Nyberg, Henricsson and Rydella (2008) investigated the correlation between teacher-rated problem behaviours and social competence at 6 years old to sociometric peer status and self-perceptions at 11 years old, meaning a causal relationship cannot be confirmed. They found social competence, and internalising (e.g. low mood, anxiety and withdrawal) and externalising problem behaviours (e.g. aggressiveness, criminality) contributed independently to peer acceptance, whereas loneliness was associated with internalising problems. Early externalising problems strongly predicted peer acceptance. The authors found that although loneliness and peer acceptance were significantly related, they did not completely overlap. This led Nyberg *et al.* (2008) to conclude the individual meaning of peer relations for children do not necessarily correspond to group peer acceptance.

2.2.2.3 Summary

The theoretical models suggest a complex interaction between the individual and their experiences. Hay *et al.* (2004) and Rubin *et al.* (1990) take into account early experiences, including parenting. There are risk and protective factors that can increase or minimise the likelihood of having social difficulties (Rutter, 1990; Bynner, 2001; Garmezy, 1985; Kupersmidt *et al.,* 1990). Studies reviewed indicate several factors can impact on the social inclusion of children, including aggressiveness, shyness, social competence and the types of interactions used with peers, although the studies are correlational, so cause and effect cannot be established. Crick and Dodge's

model (1994) suggests social competence is based on an interaction between the individual's and peer's skills during an exchange.

It is important to consider the short-term and long-term impact of social inclusion/exclusion, which the next section will focus on.

2.2.3 Outcomes of Social Inclusion/Exclusion

This section looks at the consequences of peer rejection compared to peer acceptance for children's mental health and wellbeing.

The World Health Organisation (2003) reported several factors that foster positive mental health in children: secure attachment; sense of purpose and direction; effective coping strategies; perceived control over life outcomes; expression of positive emotion; emotionally rewarding social relationships; and social integration, suggesting social inclusion is important for positive mental health.

2.2.3.1 Theoretical Explanations

Hay *et al.*'s (2004) model (Figure 2-2) looked at the longer-term outcomes of peer relationships, and posited that aggression caused peer rejection and friendships with aggressive peers, which, in turn, led to conduct disorder/crime. In a narrative literature review, Deater-Deckard (2001) also acknowledge the link between social and peer difficulties and later development of difficulties, including psychopathology (e.g. drug use, depression). This would appear to suggest children with internalising or externalising emotional and behavioural problems could have academic problems and difficult relationships in adulthood.

2.2.3.2 Outcomes in Childhood

An early study by Vosk, Forehand, Parker and Rickard (1982) suggests clear differences in outcomes for popular and unpopular children. They used Connors Questionnaire (teachers' version) and an estimate of popularity. Social skills were not measured in naturalistic settings, which may have affected the ecological validity of the findings. The study found that unpopular children were perceived to be more depressed, and had poorer academic outcomes and spent less time on-task in comparison to popular children. Results indicated that while there was no significant difference between the groups on frequency of positive interactions in a role-play or in response to hypothetical scenarios, the unpopular group engaged in more negative interactions. No differences were found between groups for knowledge of socially appropriate behaviours or behaviours in a role-play situation. This corresponds with the results from the Putallaz and Gottman study (1981) discussed earlier, as popular and unpopular children used socially appropriate behaviours.

Dodge *et al.* (2003) found correlations between social preference scores and social rejection in Years 1 and 2 and teacher-rated aggression in Year 5, highlighting the potential cumulative effect of social rejection, beyond the impact of early aggression and initial peer rejection. For example, preventing a child from interacting, and therefore learning social skills, may create negative expectations about their future encounters. In addition, the authors indicate low social preference by peers was found to affect later processing patterns, including hostile attribution biases, and deficits in generating competent solutions to rejection dilemmas and in enacting competent behaviours. This correlated with later aggression scores.

A longitudinal and large-scale study undertaken by Kupersmidt, Burchinal and Patterson (1995) used sociometric measures and teacher reports to examine 880 9-13 year old pupils' reciprocal friendships and friendship qualities. The measures related to group acceptance and rejection, having a reciprocated best friend, social support from best friend, conflict with best

friend, and the aggressiveness of the best friend, and were repeated annually over four years. Although no self-report measures were taken from the pupils and extraneous variables that were not investigated could have impacted on the outcomes, the authors found multiple factors, including peer rejection and dyadic friendships, contributed to the risk of negative externalising outcomes, which had a cumulative effect on externalising outcomes.

Moreover, Miller-Johnson *et al.* (2002) investigated the impact of early peer rejection and aggression on conduct problems in later childhood. They used sociometric survey and behavioural nominations, self, peer, teacher and parent ratings of aggression, along with measures of Attention Deficit Hyperactive Disorder (ADHD) symptoms, social competence, and conduct disorders, which were repeated over three years. This means direct causation cannot be inferred, and the self-report measures are at risk of respondent bias. Nonetheless, the study found aggression and peer rejection in the early school years were independently related to early conduct problems.

Finally, Criss *et al.* (2002) found that positive peer acceptance, as measured by sociometric surveys and behavioural nominations, was linked to decreased externalising behaviours according to a teacher questionnaire, including for children exposed to family risk and adversity (ecological disadvantage, marital conflict and harsh discipline). However, all the measures used were subjective and findings do not suggest causality, which may affect the reliability and validity of the conclusions drawn. They suggested peer acceptance could be a mediating factor to adaptive behaviour, which concurs with the findings of Dodge *et al.* (2003) and Miller-Johnson *et al.* (2002) discussed earlier.

2.2.3.3 Longer-Term Outcomes

Bagwell, Newcomb and Bukowski (1998) carried out a follow-up investigation on friendships of young adults from the Newcomb and Bukowski study

(1983) at 9-10 years old. They compared two groups from the earlier study, a 'friended' group who had had a reciprocal friendship at both assessment times and a 'chumless' group, who had not received any reciprocal nominations. Adult self-reported data was collected on relationships, friendships and well-being. The small sample size and measures used (self-report), as well as lack of causal data create limits to the conclusions of this study. Peer rejection and friendships were related to overall life adjustment, general self-worth and psychopathological symptoms in adulthood, but not related to competence in adult relationships and friendships, suggesting early peer experiences can have a significant impact on some areas of adult adjustment. A further follow-up with these participants at 28 years old (Bagwell, Schmidt, Andrew, & Bukowski, 2001) repeated these measures and found consistency in adulthood across multiple domains of adjustment. The authors argued their results support a cumulative risk model similar to Kupersmidt *et al.* (1995) for both friendships and peer rejection, suggesting multiple domains are important for later outcomes.

2.2.3.4 Summary

Previous research appears to suggest peer rejection can have a severe, short-term and long-term impact on people's levels of aggression, academic outcomes, social skills and psychopathology. However, the evidence is correlational and so it is difficult to establish a clear cause and effect, including any perpetuating and interactional effects (Deater-Decker, 2001).

This highlights the need for intervention in childhood with those who have social difficulties, to reduce and minimise the impact of these difficulties into adulthood.

2.3 Interventions to Support Social Inclusion

Brown, Odom and Conroy (2001) distinguish between different levels of intervention: classroom-wide (i.e. universal), naturalistic and incidental learning opportunities, and explicit interventions that are more demanding and complex. They highlight differences between interventions focusing on developing the skills and promoting engagement (developmentally appropriate practices) and interventions focused on influencing attitudes. They argue it is important to use the least-intrusive level of intervention possible, and to monitor impact and make changes where necessary.

It is not possible to cover the full scope of interventions aimed at supporting young peoples' social skills and social inclusion, due to the number of them. Instead, this review attempts to give an overview of different types of interventions on offer within schools for primary-aged children (the focus of this study).

2.3.1 Social Skills Interventions

Social skills interventions typically aim to develop and address any gaps in children's social interaction skills. Social skills development is thought to link with sociometric status (Asher & Renshaw, 1981). There are many published intervention social skills programmes available for schools, so the main techniques used within them will be described, rather than the particular interventions.

Social skill programmes typically adopt procedures that include: reinforcement, shaping and modelling; coaching; and social problem-solving (Frederickson & Cline, 2009). Reinforcement, prompting and shaping are thought to be helpful for performance problems (i.e. 'won't dos'), whereas coaching, modelling and direct instruction are helpful for acquisition problems ('can't dos' - Gresham, Cook, Crews & Kern, 2004). Affective aspects of

these programmes include strategies to support anger management and self-control (Chen, 2006).

Reinforcement involves using praise and rewards to promote appropriate behaviours (Gresham, Watson, & Skinner, 2001). Shaping uses rewards for increasingly accurate approximations of a target behaviour, whereas modelling involves demonstrating the required behaviour (Gresham & Elliot, 1993). Coaching involves telling pupils what to do and providing feedback, in contrast to modelling (Oden, 1986). Social problem solving looks at the social perception and cognition, which is included in Crick and Dodge's model of social competence (1994). A mixture of these strategies may be employed in an intervention (Frederickson & Cline, 2009). Bierman (2004) suggests it is important to plan opportunities within social skill programmes to allow for generalisation and maintenance, considering methods of practising the skills, providing feedback and supporting self-monitoring.

Interventions vary in terms of which children are targeted and what skills are taught (Coie & Koeppl, 1990), such as skilled behaviour for making friends (e.g. Gottman, Gonso & Schuler, 1976), conversational skills (e.g. Bierman & Furman, 1984) and cooperation (e.g. Oden & Asher, 1977), focusing on aggressive or disruptive/off-task behaviour (e.g. Bierman, Miller, & Stabb, 1987), academic skills (e.g. Coie & Krehbiel, 1984) or social cognition (e.g. Lochman, Coie, Underwood, & Terry, 1993).

Chen's (2006) narrative literature review showed these interventions could be successful in teaching children the skills covered by the programme, with some transfer to natural environments. They have been found to be effective across different behavioural difficulties, including aggression, externalising behaviours, internalising behaviours and antisocial behaviour (Carr, 2000; Gresham *et al.,* 2004) and for improving social skills more than a comparison group (Mize & Ladd, 1990). However, they need to be properly devised, with a match between the needs of the child and the goals of the programme (Coie & Koeppl, 1990). Bierman (2004) highlighted the importance of considering the context (e.g. location and time of the intervention), the group size and composition, number and length of sessions and who runs the

intervention. Mize and Ladd (1990) recommend considering the developmental stage of the child before planning intervention.

It has been suggested they have limited long-term impact because competence in social skills may not be the only reason children are rejected; there is an interactional influence between an individual's social skills and contact with their peers (Bierman, 2004). For example, Coie and Koeppl (1990) highlight that rejected children are not a homogenous group, so it is important to consider this when planning interventions, as well as ensuring children are motivated to participate.

2.3.2 Peer Support Interventions

Peers can be used as resources, as children can learn from each other (Leyden, 1996). Due to this growing awareness that peers can have a positive or negative impact on pupils with additional needs, there has been an increasing interest in peer support interventions (Frederickson, Warren, & Turner, 2005). Crick and Dodge's model of social competence (1994) highlights the importance of the peer group interactions; Pellegrini and Urbain (1985) further suggest peers are particularly important when generalising skills to other contexts. Furthermore, peer interventions allow pupils to share the responsibility for solving problems rather than it being held by the teacher (Newton & Wilson, 2003). Peers are in a unique position to be helpful in supporting another child (Tashie, Shapiro-Barnard, & Rossetti, 2006). Bierman (2004) advocates for interventions that use peer groups to support the development of friendships and social competence, as peer rejection is seen as a dynamic interpersonal process rather than just a child characteristic. Peers can act as role models.

Often, peer support interventions adopt a problem-solving approach, or use the peer group to prevent disruptive behaviour (Cowie, Boardman, Dawkins, & Jennifer, 2004; Cowie, 2001; Thompson & Smith, 2011). Examples include CoF (e.g. Newton & Wilson, 2003), peer tutoring (teaching a less

knowledgeable peer) and peer collaboration (two novices work on a problem together, e.g. Damon & Phelps, 1989 for both).

In their review, Terpstra and Tamura (2008) found positive impacts for peer support interventions, although they only reported on studies with significant outcomes. In a more systematic review, Dart, Collins, Klingbeil and Mckinley (2014) found positive effects for peer management interventions, although the results were based largely on single-case research and the studies had other limitations, including lack of treatment fidelity checks.

Finally, in a comparative study Bierman and Furman (1984) investigated the impact of (1) social skills training, (2) peer involvement, (3) both combined and (4) no treatment on the conversational skills and peer acceptance of 54 fifth and sixth-grade children randomly assigned to each condition. Conversational skills were assessed by interview, observations in natural situations and a self-concept scale, using inter-rater reliability. A sociogram and teacher ratings of peer interaction were used to capture information about peer relationships. The study found social skills training promoted sustained increases in conversations and interactions with peers, including at a six-week follow-up. Peer involvement did not have a major impact on conversational skills but showed significant, albeit temporary, improvement in sociometric status, increases in interactions and feelings of social efficacy. Only children in the combined group shared general and sustained improvements in all areas.

2.3.2.1 Summary

There are many different interventions that seek to promote children's social inclusion. Some focus on developing the social skills of the child, while others utilise peers to support the child's development. Bierman and Furman (2004) suggest to ensure maximum success both should be used.

2.3.3 Circle of Friends

2.3.3.1 Introduction

CoF is a peer support intervention developed in Canada and North America in the 1980s by Perske and Perske (1988). They report that it arose from a support network created around an adult with disabilities. CoF aims to support inclusion of pupils with special needs by making him/her feel more connected and valued (Forest, Pearpoint, & O'Brien, 1996).

It is a way of mobilising peers around a vulnerable young person, to engage in problem solving with the vulnerable young person (Newton & Wilson, 2003) and provide him/her with support, with the aim to create new, mutually beneficial friendships (Taylor, 1997). Focus (or target) children could be vulnerable to exclusion because of their disability, difference or due to a crisis in their lives (Newton & Wilson, 2003). CoF has been suggested as a strategy to be used to address bullying by Department for Education and Skills (2002) and Ofsted (2003).

2.3.3.2 Structure of the intervention (Newton & Wilson, 2003)

2.3.3.2.1 Overview

The intervention begins with a whole class meeting, without the focus child. The other pupils discuss the focus child's strengths and difficulties, and look at the impact that having no friends might have on a child, with the aim of developing empathy with the focus child's situation. Volunteers are sought for the CoF. In the Circle meetings, the volunteers set targets and devise strategies, which are then reviewed each week with the focus child and the volunteers, supported by an adult facilitator. Further detail about the intervention can be found in the Methodology chapter (see Section 3.5).

2.3.3.2.2 Variations

There have been some reported variations on the CoF approach. Taylor (1997) suggested the focus child could choose some of the volunteers for the Circle and that the meetings could include an element of role playing for practising particular strategies. Shotton (1998) adapted the approach for "young people who are extremely sensitive about their social isolation and have a heightened sense of self-awareness" (p. 23). She suggests no target pupil is identified, and instead the discussion focuses on the need for everyone to establish and maintain friendships. Pupils volunteer to be part of a Circle that aims to establish stronger peer relationships.

2.3.3.3 Theoretical Underpinnings and Values

Newton and Wilson (2003) suggest CoF supports the values of diversity and inclusion for all, arguing social justice and having a place in school and community is important. They further argue relationships and community connections are important for psychological well-being, physical health and resilience, with CoF promoting acceptance in children.

Similarly, Newton, Taylor and Wilson (1996) and Newton and Wilson (2003) linked CoF to social constructivist theories (Mallory & New, 1994), saying attitudes, behaviour and relationships are constantly changing by others contributing knowledge. CoF is a systemic approach that recognises peers are important influences on behaviour, both positive and negative (Newton *et al,* 1996), and allows staff and pupils to share problem solving.

The importance of pupil culture in the CoF approach is mentioned by Miller and Leyden (1999). The theory of circular causation (Dowling & Osborne, 1994; Miller, 1994) suggests isolation from peers may impact on a child's self-image, behaviour and peer reactions in a cycle. This circular causality is addressed in the whole-class meeting by asking children to explore how they would feel and behave if they had no friends (Newton & Wilson, 2003),

providing a “full stop” (Taylor, 1997, p. 49) or ‘punctuation point’ to begin a process of change (Miller, 2003).

Taylor (1997) recognises the complexity of peer relationships, suggesting a school community has a “responsibility to be flexible and creative in adapting to a particular child’s needs” (p. 45). She proposed that environmental factors contributed to each ‘problem situation’ and that the ‘causes’ of problem situations are complex and interactive.

In addition, Newton *et al.* (1996) suggest possible hypotheses for the effectiveness of the approach:

- Pupils gain from the increased attention;
- Pupils feel more accepted, which changes their behaviour;
- The impact of the other children intervening;
- Peer group pressure and encouragement;
- Providing a framework for problem-solving;
- Increased empathy towards the focus pupil.

Moreover, Taylor (1997) suggests different hypotheses for why CoF may be effective, as it: is an honest and direct approach; empowers pupils during discussion; allows the focus child to feel supported; changes the way people relate to each other and increases understanding; develops trust, enjoyment and sense of belonging; benefits all involved; and is an approach consistent with a school’s aim of being a community where each individual is valued and respected. Frederickson and Turner (2003) suggest CoF utilises many elements recommended by Elliot and Busse (1991), i.e. including peers in the intervention; focusing on behaviours occurring in the setting; and reinforcing the skills as naturally as possible.

In two grounded theory studies, James and Leyden (2008; 2010) suggested CoF is a systemic intervention (Dowling & Osborne, 1994) that creates the capacity to open up the system. This provides the ability to change attitudes and form new relationships through increased awareness that the child needs help and offers an opportunity to help them, as well as increased empathy for the child's feelings and behaviours. The meetings provide the focus child with social support and feedback from others, and the opportunity to share information with others. James and Leyden (2008; 2010) acknowledge the importance of choosing Circle members carefully and the role that the facilitator has for promoting group cohesion and opportunities for discussion, as well as supporting the pupils as needed. Figure 2-4 shows a representation of their findings regarding the stages of the intervention and key interactions and processes (2010, p. 57). However, this is based on interviews of CoF facilitators and the authors' subjective interpretation of responses.

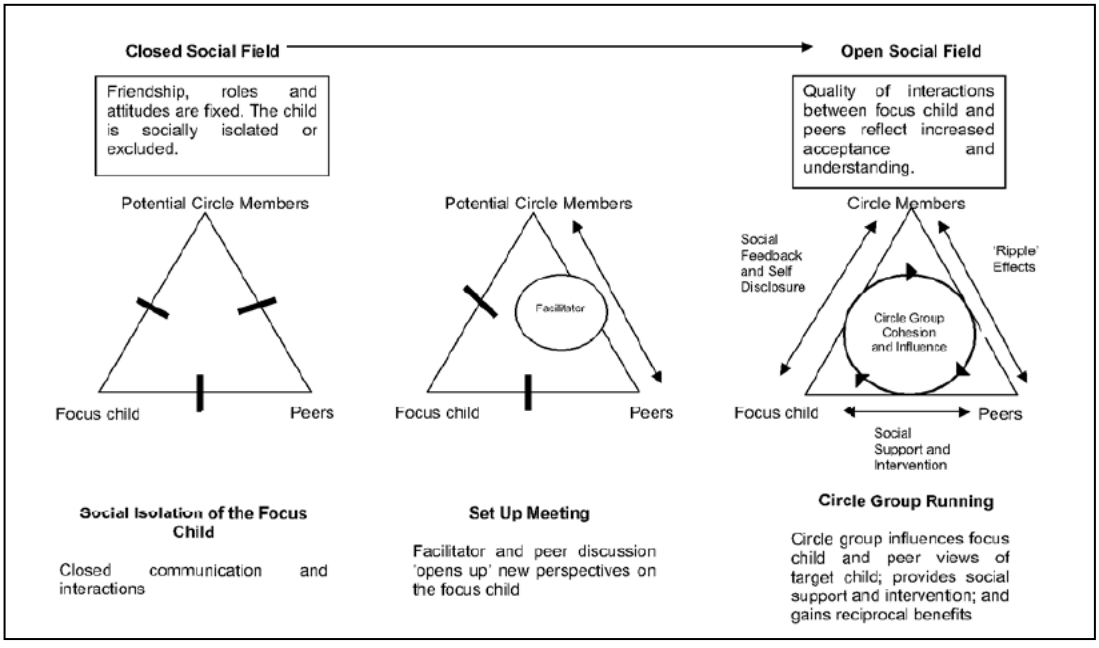

Figure 2-4 A diagrammatic representation of the Grounded Theory of the Circle of Friends process (James & Leyden, 2010)

2.3.3.4 Effectiveness

Several studies have examined and reported the benefits of CoF. For instance: Newton *et al.* (1996) provide anecdotal examples of the power of interventions generated by children within twenty CoFs with an age range of 4-14. The quotes are from groups and facilitators, but no information on data collection is presented. They found benefits both for the focus child and their peers, including interpersonal skills and the ability to identify and express feelings, and understand the link between feelings and behaviours. Benefits for the school staff were also found, including feeling supported from an outside professional, focusing on the positives, increased self-esteem, increased pride in the class and less isolated at school. They suggest there is no age restriction on the use of the intervention, although they acknowledge the approach does not work in every situation.

Similarly, James and Leyden (2010) cited two studies, although the limited information makes it difficult to critique and therefore draw firm conclusions about their generalisability. Pearpoint and Forest (1992, cited in James & Leyden, 2010) found using the CoF approach with two children showing challenging behaviour made the children feel more happy and socially included, and reduced their challenging behaviour. Furthermore, Taylor and Burden (2000, cited in James & Leyden, 2010) concluded from four case studies that CoF can have a significant impact on the development of pro-social behaviours in children throughout school. They highlighted the importance of factors such as teacher attitudes, classroom climate and whole school ethos for the success of the intervention.

In addition, Taylor's (1996) case study found positive results for a boy in Year 6 who had been excluded from his previous primary school and was displaying difficulties at his current school. Anecdotal evidence from a single case makes it difficult to generalise the findings. Nonetheless, evidence from the class teacher and Circle members reported positive outcomes, including less frequent shouting out, more commitment to work, no aggressive behaviours and developed healthy friendships. The class teacher identified

benefits for the Circle members, including developed empathy, problem-solving and listening skills.

Other studies have shown some positive results. Frederickson and Turner (2003) examined the progress of 10 withdrawn or disruptive primary-aged pupils following a CoF in comparison to a similarly sized wait-list control group, who spent 20-30 minutes listening to a story as a group around the theme of friendship. The authors acknowledged limitations with the small sample size and variations in age and gender, as well as the possible lack of sensitivity with the measures. However, results suggested CoF had a positive impact on the social acceptance of the focus child by peers, although it did not affect the focus children's perceptions of their social acceptance or behaviour, teacher ratings of behaviour or on the general ethos of the class.

Building on the previous study, Frederickson *et al.* (2005) used CoF with 14 primary-aged pupils: seven with learning as the primary need identified, six with emotional and behavioural difficulties and one with autism. Limitations identified included a small sample size, use of peer-ratings only and possible lack of ownership from school staff which may have impacted on the validity and reliability, and therefore the ability to generalise from the results. Nonetheless, the study found the whole-class meeting created improvements in acceptance and reductions in rejection, however, further improvements were not found or sustained during the CoF meetings, except for the child with autism. There were no significant changes in peer ratings of negative or positive behaviour, or changes in social behaviour following changes in social acceptance. The authors suggested this matches Dodge *et al.*'s (1986) cyclical model of social competence, because the changes in peer attitudes were not sustained when there was no change in the focus child's behaviour (i.e. peers would evaluate the behaviours presented to them) or in the absence of further intervention related to the social situation.

In a study using CoF with seven Year 3-10 pupils with autism, Whitaker, Barratt, Joy, Potter and Thomas (1998) interviewed Circle facilitators about their experiences. The authors acknowledged the sample used in this study

was diverse and lacked experimental control. Data was taken retrospectively through interviews and questionnaires and no pre-data taken, which limits the reliability and validity of the findings. This is further reduced by the lack of description of the study design to enable replication by other researchers. However, they found benefits for the focus child, including reduced anxiety, increased happiness at school and increased contact with peers. Other benefits included increased levels of empathy and understanding, and most Circle members enjoyed the process. However, only three Circle members referred to the focus child as a ‘friend’, although most reported spending more time with him/her. Parents of the focus child suggested it improved their sociability.

A study by Barrett and Randall (2004) compared different variations of a CoF. They set up four Circles and used sociometric surveys and a class cohesion questionnaire before and after the intervention to examine the effects. Only taking child self-report measures and the small sample size reduces the reliability and validity of the study. Nonetheless, the study showed limited impact of Shotton's (1998) adapted CoF for an isolated student on the primary-aged focus child’s peer relationships, although the effects on the other Circle members were slightly more encouraging, with most of the class keen to take part in a CoF in the future. The authors’ explanations for the limited impact observed included the short time frame used (six weeks) and lack of opportunities for whole-class follow-up work based on the CoF. The authors’ own adapted model, using separate Circles for three isolated children who were not identified, showed more positive effects, although the authors acknowledged these findings were still limited. Two children were reported to have an increase in number of friends and playing more with children from the Circle; these improvements were maintained at a four-month follow-up. Whole-class effects were found, including increased cohesion and self-reported social skills.

2.3.3.5 Summary

The CoF approach focuses on systemic level change, by looking to change how peers view the 'focus' child and respond to them. Several studies have looked at the impact of CoF and reported positive results with children with emotional and behavioural problems, as well as autism. No studies could be found evaluating its impact on children with a hearing impairment, the focus of this thesis. Most were case studies lacking experimental control and depended upon anecdotal reports, which limits their validity, reliability and generalisability. The present research therefore aims to adopt a more robust methodology, as well as gather data from a range of different respondents, to build on Barrett and Randall's study (2004).

2.4 Hearing Impairment

There are two hearing pathways: the air conduction route, where sound waves enter the external ear and ear canal to cause the tympanic membrane to vibrate and transmit the sound to the inner ear; and the bone conduction pathway, where sound is transmitted through vibrations of the skull directly to the inner ear (Northern & Downs, 2002).

A hearing threshold of 0-20dB is considered 'normal' hearing. For people with a mild hearing loss, the quietest sounds they can hear are between 25-39dB; for moderate hearing loss it is 40-69dB; for severe hearing loss it is 70-94dB; and for profound hearing loss it is >95dB. There are more than 45,000 deaf children in the UK, plus more who experience temporary deafness (Action on Hearing Loss, 2011), however, 90% of severely and profoundly deaf children are born to hearing parents (Marschark, 1993).

The term 'hearing impairment' is applied to all children with mild to profound hearing loss (Northern & Downs, 2002). Many papers (e.g. Marschark & Knoors, 2012) also use the term 'deaf' to describe "any degree of hearing loss sufficient to affect communication and learning" (p. 136-7). For the

purpose of this thesis, both terms are used to encompass all levels of hearing loss, with degrees of hearing loss mentioned where appropriate.

2.4.1 Types and Causes

Hearing loss can be congenital (i.e. presumed to have been acquired before birth and not always genetic in origin) or acquired (i.e. during or after birth – Pappas, 1998). Around half of all deaf children are born deaf (Action on Hearing Loss, 2011), while others acquire the HI. The educational outcomes and life chances of children with HI depends on early identification and treatment of the impairment (Pappas, 1998; Northern & Downs, 2002).

Hearing loss can be unilateral (i.e. one ear) or bilateral (i.e. both ears). A child with a unilateral loss may be able to function adequately in most situations (Northern & Downs, 2002), but may find sound localisation or discrimination difficult.

2.4.1.1 Conductive Hearing Loss

This is the most common type of hearing loss (Northern & Downs, 2002), which is “caused by factors, congenital or acquired, which obstruct the progress of acoustic energy through the outer and middle ears” and may be fluctuating (Bamford & Saunders, 1991, p. 75). It reduces the intensity of sounds reaching the cochlear. This only affects the air conduction route; the bone conduction pathway is intact, so those sounds are heard normally (Northern & Downs, 2002).

Impairments in the outer ear can be caused by a build-up of ear wax, growths from the canal wall, or congenital malformation. Only a complete blockage will cause a significant degree of hearing loss. It can also be caused by a sclerotic, scarred or perforated tympanic membrane, which can be due to trauma or disease (Bamford & Saunders, 1991). ‘Glue ear’ is quite

common in children (Bamford & Saunders, 1991). There is a higher incidence of HI in children with medical conditions such as cleft palate (Northern & Downs, 2002).

2.4.1.2 Sensorineural Hearing Loss

This involves damage to the inner ear structure or the eighth nerve and is not amenable to surgical treatment (Bamford & Saunders, 1991). In sensorineural loss, the air and bone conduction thresholds are the same (i.e. the same level of hearing loss), as the problem is in the inner ear rather than the outer or middle ear (Northern & Downs, 2002). The loss is nearly always permanent and may be progressive. If the child has normal hearing for the first year of life and/or has an early diagnosis after onset with appropriate treatment, this will provide linguistic advantages. Bamford and Saunders (1991) comment that the impact upon social, emotional and educational factors for people with a sensorineural hearing loss is likely to be “atypical and variable” (p. 118), and the psychological strategies they use to make sense of the world will be individual.

2.4.1.3 Mixed Hearing Loss

A ‘mixed hearing loss’ means that a conductive hearing loss is present in conjunction with a sensorineural hearing loss (Northern & Downs, 2002).

2.4.2 Treatments

Most middle-ear disorders will respond to medicine or surgery, including tympanostomy tubes (aka. grommets) to ventilate the middle ear, myringotomy to relieve pressure, correcting the malformation or damage, or

treating the infection, or will recover spontaneously (Bamford & Saunders, 1991; Northern & Downs, 2002).

Sensorineural hearing loss can be treated by providing hearing aids (HAs) or cochlear implants (CIs – Pappas, 1998). In the classroom, radio frequency transmission units with wireless microphones may be used (Northern & Downs, 2002). HAs cannot restore normal hearing (Evans, 2004) and often the quality of any amplification device is either distorted, diminished or non-existent (Johnson & Seaton, 2012).

2.4.3 Impact and Outcomes of a Hearing Impairment in Childhood

A considerable amount of research has been done on the impact of a HI on children's overall development. This section of the literature review will summarise some of the key ideas found in this research, focusing on the development of primary-aged children.

2.4.3.1 General

Sensory difficulties will mean it is unlikely that children have had equivalent experiences to those without such problems, which may impact on development (Marschark, 1993). Wood, Wood, Griffiths and Howarth (1986, cited in Lederberg, 1993) suggested deafness can lead to a problem of 'divided attention', where deaf people have to shift their visual attention from the environment to a communicator in order to receive that information, i.e. 'divide' their attention sequentially between the environment and the communication, meaning they are likely to miss something. In comparison, a hearing person can pay attention to both simultaneously.

Schlesinger (1978) questioned whether difficulties occurring as a result were entirely due to within-child factors (e.g. "the absence of early auditory stimulation, feedback and communication" p. 20) or the responses from

parents, teachers, siblings and friends. In a large scale study using students from elementary, secondary and high schools, Polat (2003) found degree of hearing loss, additional handicaps and age at onset of deafness negatively impacted on psychosocial adjustment of students, but use of HAs, speech intelligibility, academic achievement, parent hearing status and communication methods at school had a positive impact. However, the inability to gain inter-rater reliability or to collect data on confounding variables (e.g. aetiology of deafness and parental influences) limit the overall reliability and validity of this study. Nonetheless, Polat (2003) concludes the findings do not support a 'pathological' view of deafness, saying environmental factors influenced the psychosocial development of deaf students. Moreover, Wellman and Peterson (2013) suggested a circular causality of environmental factors that could increase or reduce interaction opportunities and practice of children with HI.

2.4.3.2 Language Development

In their literature summary, Bamford & Saunders (1991) suggest a HI impacts on an individual's auditory processes: detection, frequency discrimination and resolution, temporal discrimination and resolution, intensity coding and pattern recognition. Difficulties in locating a sound may impede listening to an appropriate speaker in a busy environment. Early fluctuating hearing losses can cause delays in acquiring spoken language, although children often 'catch up' if there is no other cause of their difficulties. However, deprivation of language in first 2-3 years of life can lead to more persistent language difficulties (Northern & Downs, 2002).

Liben (1978) suggested that the inability for deaf children to hear sound may lead to less exploration of objects that provide primarily auditory feedback. Lederberg (1993) extended this to the social realm, suggesting it may reduce a child's interest to interact with people who communicate predominantly through sound, so they focus more on the environment. In addition, Davis, Elfenbein, Schum and Bentler (1986) found there was no direct link between

degree of hearing loss and language: there was a lot of variation between the children, meaning they were a heterogeneous group. Children with any degree of hearing loss were at risk of delayed development in verbal skills.

With the development of CIs, Blamey *et al.* (2001) found that six years after CI implantation, speech acquisition was incomplete but still improving in nine deaf children. To compare treatment types, Blamey, Sarant *et al.* (2001) evaluated speech perception, production and language using standardised measures in 87 children with CIs and HAs over three years. Level of performance and trend was similar for CIs and HAs and rates of improvement were not correlated with degree of hearing loss. The authors acknowledge limitations with a linear regression analysis and the variations between participants but nonetheless conclude without language training to support knowledge of language, deaf children would remain at a disadvantage in receptive and expressive language in comparison to their hearing peers when entering secondary school. Other studies have shown similar delays (e.g. Boothroyd & Boothroyd-Turner, 2002; Svirsky, Robbins, Kirk, Pisoni & Miyamoto, 2000).

In contrast, Geers, Nicholas and Sedey (2003) assessed the comprehension and production of English language by children with pre-lingual deafness after 4-7 years of CI use through regression analysis. They found the potential for some CI children to produce and understand English language at a level comparable with their hearing peers. Moreover, Nicholas and Geers (2007) compared language samples of children with CIs to children with normal hearing. They found children with earlier CI implantation and better residual hearing were more likely to achieve age-appropriate spoken language. Finally, in a narrative literature review, Preisler (1999) concludes that language acquisition will affect emotional, social and cognitive development of children with HI, because delays in developing certain communication skills may reduce opportunities for peer interaction and to learn social rules.

2.4.3.3 Academic Progress

In a narrative literature review of the cognition and learning of children with HI, Marschark and Knoors (2012) conclude there is more variation in the cognitive ability and academic outcomes of deaf children than in their hearing peers, and deaf children are more likely to have multiple learning challenges in the classroom. However, average non-verbal scores did not differ significantly between deaf and hearing children. Deaf children had better detection in their periphery vision, which could make them more distractible. On average, they performed worse on memory tasks, although results depended on whether information was coded using phonological or spatial strategies. Studies indicated deaf children tend to have more difficulties with higher-level cognitive tasks, such as executive functioning and metacognition.

2.4.3.4 Social Development

2.4.3.4.1 Social and Communication Skills

Vogel-Walcutt, Schatschneider and Bowers (2011) compared the social-emotional functioning of 20 8-11 year old hearing impaired children (mild-profound, all communicating with Signed English) with matched normal hearing children, using parent, teacher and child self-report measures, and observations. The authors highlight a small sample size, low participation rate, familiarity with deaf peers, and use of self-report measures may have created a comparison bias or desensitisation of differences between the two groups of pupils (i.e. hearing and deaf), which may limit the reliability and validity this study. Nonetheless, they found the children had learned to cope with their hearing loss so they could attend to social cues sufficiently to achieve normal development. The deaf children were found to use

appropriate emotional control during class, although they were reported to be more shy/anxious and lonely.

In an experimental study, Paatsch and Toe (2013) compared the pragmatic language abilities in unstructured conversation of 31 7-12 year old children who had mild-profound hearing loss and used spoken communication to their hearing peers in deaf-hearing and hearing-hearing dyads. The research found deaf children took longer conversation turns than their hearing partners, whereas hearing-hearing dyad conversations were more balanced. The deaf children asked more questions and made more personal comments, although this comparison was not statistically significant. Their hearing partners appeared more passive, using significantly more conversational devices and providing more minimal answers. No difference was found for the two dyads for the total number of turns, mean number of turns per partner, the total number of topics covered, or the length of pauses. However, this was not a naturalistic conversation and observers were present in the room, which could have changed the interaction. There was also a difference in familiarity between the dyads (i.e. the deaf-hearing dyads were less familiar than the hearing-hearing dyads). Nonetheless, the authors conclude children with a profound hearing loss have productive conversational skills and can use a wide range of pragmatic skills. They further hypothesised deaf children may base their conversations on models from the Teachers of the Deaf, using strategies to avoid conversational breakdowns.

Toe and Paatsch (2013) found similar results using children who had relatively good speech intelligibility, concluding the deaf children had a good grasp of basic conversational rules and had infrequent breakdowns in conversation, although the strategies the deaf children use may not be productive for developing strong friendships. In addition, Most, Shina-August and Meilijson (2010) assessed pragmatic language skills of 24 6-9 year old deaf children and their hearing peers, although deaf pupils interacted with an adult rather than a peer. Cross-sectional data limits the generalisability as well. However, they found children with HI can use a variety of pragmatic

skills, but not always as fully or precisely when compared to their hearing peers. Possible explanations offered included less flexible use of language structures, difficulties with ToM, difficulties in auditory perception of spoken language, or less exposure to pragmatic situations and strategies.

2.4.3.4.2 Peer Acceptance and Relationships

Examining peer relationships of children with HI, Cappelli, Daniels, Durieux-Smith, McGrath and Neuss (1995) evaluated the psychosocial functioning of 23 HI children and matched hearing peers. They found deaf pupils were more likely to be rejected and feel isolated, with younger children being less accepted than older children, possibly due to older children having better social skills. Despite the limitations created by the small sample and cross-sectional self-report data, the authors highlight deaf children were more likely to show behavioural problems and low self-esteem.

In a similar study, Nunes, Pretzlik and Olsson (2001) investigated the social inclusion of 9 deaf children in Years 5 and 6 using peer ratings, sociometry and interviews. They found deaf pupils did not tend to encounter strong negative feelings from their hearing peers; they attracted both positive and negative reactions that were most likely related to factors separate from their HI. Deaf pupils were not more rejected than their hearing peers, but tended to be more neglected than them. Deaf pupils were less likely to have a friend in their class and the friendships between hearing and deaf pupils tended to be for pro-social reasons rather than the usual reasons of enjoyment or intimacy. Hearing pupils were found to prefer hearing peers and expressed difficulties with communicating with their deaf peers. While the authors acknowledged the data was not observational, they suggest different data sources indicated that while deaf pupils were not rejected in mainstream schools, they may feel isolated. Therefore, the authors suggested that schools could take a proactive role in reducing communication barriers and improving attitudes towards deaf pupils.

With a focus on friendships, Vogel-Walcutt *et al.* (2011) found deaf children were less likely than their hearing peers to report the same number of friends, although neither group reported difficulties with making or keeping friends and said they preferred playing with others. This suggested that although the deaf children had fewer friends, they had good awareness of their social skills.

Moreover, Kluwin, Stinson and Colarossi (2002) reviewed 33 studies on social skills, interactions, and sociometric status of deaf children, utilising self-reports, teacher ratings and researcher observations. The results were mixed and the studies reviewed were old and had methodological issues, such as sample selection, different outcomes on measures, confounding variables, and ranged in ages (primary and secondary), leading to limited evidence overall. However, they conclude hearing students were more socially mature than their deaf peers and deaf students were 'somewhat' accepted by their hearing classmates, although it was more difficult for deaf children to make close friendships and communicate with hearing peers.

2.4.3.4.3 Development of Emotional Understanding

Peterson (2004) investigated ToM development in 4-12 year old children with either a CI or HA, autism or normal hearing using a match group design, although the sample was small and varied. She found both groups of deaf children were as delayed in ToM development as the children with autism.

In contrast, Sundqvist, Lyxell, Jönsson and Heimann (2014) investigated cognitive and emotional ToM in 16 4-9 year-old children who had either received their CI early (before 27 months) or late, and an age-matched comparison group. They found age of implantation affected the development of ToM, separate to scores on language and non-verbal intelligence tests; the early-CI group performed at a similar level to the comparison group. However, the authors acknowledged that variation in the sample and potential cofounding variables make it difficult to generalise from this study.

Nonetheless, they posit early verbal interactions between a mother and child provide a framework for early social cognitive development.

2.4.3.4.4 Overall Development

In their systematic review of 21 papers, Xie, Potmesil and Peters (2014) suggest fewer communication interactions happened between deaf children and their hearing peers, even when the deaf child had a CI in primary school. By secondary school similar levels of communication abilities were found, possibly due to increased maturity and experience. However, Ridsdale and Thompson (2002) in a study using sociometric data and interviews found deaf students in Years 8 and 9 in a secondary school appeared 'socially marginalised', had more limited access to the curriculum content and lower self-esteem than their hearing peers. However, the authors caution that their findings may have been affected by the small sample used. Ridsdale and Thompson (2002) suggest possible ways forward for practice, including the use of CoF, social skills training and speech therapy. Moreover, Xie *et al.* (2014) highlight "a lack of research concerning the types of interventions that promote social interactions between children who are [deaf] and their hearing peers in inclusive education" (p. 433), because most of the studies identified focused on social interactions in pre-school.

2.4.3.5 Summary

The research reviewed suggests there is a risk of children with a HI having difficulties with language, learning and social skills, although this varies between children. Some skill strengths have been found, such as awareness of conversational rules, turn taking and topic initiation, but the skills are not always as well-developed as those of the normal hearing peers.

As previously mentioned, most of the research around interventions to support deaf children's social development has focused on pre-school children rather than primary-aged children or secondary school students (Xie *et al.,* 2014). This study therefore seeks to build on, and add to, this small evidence base. It was also felt that focusing on primary school-aged children rather than secondary school students supported a focus on intervening at an earlier age, so that any intervention would have the possibility of improved longer-term impact and outcomes (e.g. Williams & Daniels, 2000).

The next section will therefore investigate systematically and in more detail studies that have evaluated the effectiveness of social support interventions aimed at primary-school aged children with HI (the focus of the present research).

2.5 Systematic Literature Review: What is the Effectiveness of Interventions Aimed at Supporting the Social Inclusion of Primary-Aged Children with a HI who are Socially Neglected/Rejected/Isolated?

2.5.1 Introduction

A systematic literature review aims to find and review all the available research relevant to a particular research question (Andrews, 2005). These reviews can inform policy, practice and further research (Gough & Elbourne, 2002) by evaluating the evidence (Gough, 2007). One must be comprehensive, unbiased, transparent and replicable through the use of explicit inclusion and exclusion criteria. However, it can only review searchable studies and depends on the research/review question posed, as well as the quality of the abstracts used while screening (Andrews, 2005).

2.5.1.1 Objectives and Rationale

The question “what is the effectiveness of interventions aimed at supporting the social inclusion of primary-aged children with a HI who are socially neglected/rejected/isolated?” was chosen for this systematic literature review, in order to encompass all possible types of interventions used with children with HI to improve their social inclusion.

2.5.2 Methodology

The methodology followed the procedures described by the Evidence for Policy and Practice Information and Coordinating Centre (EPPI-Centre, http://eppi.ioe.ac.uk/cms/). In order to make the method in this search clear and replicable, it is described below.

Three databases were included in the search: PsychInfo, ISI Web of Knowledge and ERIC. Synonyms were used in the search terms (i.e. ‘effect’ ‘social inclusion’, ‘intervention’ and ‘deaf’) to try to capture all relevant research; Boolean search terms were used to include American spellings and different word endings. See Appendix 8.1 for variations of search terms.

After the terms had been integrated, the titles and abstracts were screened using the inclusion and exclusion criteria in Table 2-1. Appendix 8.2 shows the outcome of the search, including the reasons papers were included or excluded.

Inclusion	Exclusion
Studying the effectiveness of programmes aimed at improving social inclusion of pupils.	Not studying the effectiveness of programmes aimed at improving social inclusion of pupils (e.g. other type of intervention, looking at improvement with CI implantation, or summary article).
Studying the impact on aspects of social inclusion (and other factors)	Studying the impact of other factors, not including social inclusion.
Pupils were 6-11 years old (Key Stage 1/2), or it was possible to isolate outcomes for the pupils within this age range.	Pupils were of pre-school or secondary school age.
Pupils had a diagnosed HI (and no other disabilities), or individual children in a mixed study had an HI diagnosis and their results could be separated.	Pupils did not have a diagnosed HI, or had a diagnosed HI with another disability (e.g. autism).
Published in 1980 or after.	Published before 1980.

Table 2-1 Inclusion and exclusion criteria for systematic literature review

2.5.3 Results

Studies were categorised according to Gough's (2007) weight of evidence model (see Appendix 8.3). Appendix 8.4 shows a summary of each of the included papers.

2.5.3.1 Rejected Papers

One paper (Antia, 1994) was rejected because it was a review of social inclusion interventions in pre-school environments. A further paper (Luckner & Schauermann, 1994) was rejected because the individual pupil used in the

study was too old (12 years old), and although it mentioned ‘Circle of Friends’, the structure of the intervention did not follow the format described by Newton and Wilson (2003). A total of 12 papers were identified in the searches.

2.5.4 Discussion

2.5.4.1 Design

Six out of the 12 papers utilised Single Case Experimental Designs (SCEDs). Two of these were multiple baseline across subjects, two used multiple baselines across target behaviours, one was an ABCD design and one was an AB design. Four of the studies included a follow-up phase (Lemanek, Williamson, Gresham, & Jensen, 1986; Rasing & Duker, 1992; Rasing, 1993; Kreimeyer, Crooke, Drye, Egbert, & Klein, 2000), although Kreimeyer *et al.* (2000) did not include a follow-up phase for the wait-list control. The other two studies did not have a follow-up phase (Avcioglu, 2007; Fisher, Monsen, & Moore, 1989), although in the Fisher *et al.* (1989) study, teacher reports occurred a number of weeks after the intervention ceased.

A further six studies adopted a group design. Three studies by Antia and colleagues (Antia, Kreimeyer, & Eldredge, 1993; Antia & Kreimeyer, 1996; 1997) compared two interventions (social skills and familiarity interventions), and included a follow-up phase. In contrast, Greenberg & Kusche (1993; 1998) used an intervention and a wait-list control group with a follow-up phase. The final two studies did not use a control or comparison group: Suarez (2000) used a one group pre/post-test quasi experimental group and unusually, Kurkjian & Evans (1988) used a two-group pre- mid- and post-test design, although it was the hearing peers who were allocated to groups (signing lessons or no signing lessons), rather than the children with HI, and the measures taken focused on the peers.

2.5.4.2 Participant Characteristics

The SCED designs had small numbers of participants, ranging from 4 to 9 in four of the studies. One study had only one student who was 11 years old (Lemanek *et al.,* 1986) and another had 20 students, but the age range was 7:1 to 13:9 (Rasing, 1993). The other studies had students who were primary school age. The level of detail regarding the hearing impairment varied across studies; one mentioned no participant characteristics (Avcioglu, 2007). Three studies (Lemanek *et al.,* 1986; Rasing & Duker, 1992; Rasing, 1993) included children with severe-profound hearing loss, although two did not mention the form of aid or communication method used. For the other study (Rasing, 1993), oral communication was supplemented with finger spelling and written language. Language was mentioned in two of the studies (Rasing & Duker, 1992; Rasing, 1993) indicating the children had language disabilities. For one study (Fisher *et al.,* 1989), communication method was mentioned, although this varied from little communication to effective signing and/or intelligible speech. One study (Kreimeyer *et al.,* 2000) included children with moderate-profound hearing loss, with HAs and CIs and a mixture of speech and signed communication.

For the group designs, the number of hearing impaired participants sampled was between 18 and 45, with the exception of Kurkjian and Evans (1988), who had 6 HI children but took sociometric and acceptance measures with the hearing peers only. Three studies (Antia *et al.,* 1993; 1996; 1997) included pre-school children as well as primary-aged children, and one (Suarez, 2000) included primary and secondary-aged children. The other two studies (Kurkjian & Evans, 1988; Greenberg & Kusche 1993; 1998) only included primary-aged children. For two studies (Suarez, 2000; Greenberg & Kusche 1993; 1998), the children had a severe-profound hearing loss, and in the Suarez (2000) study the children generally had low levels of oral and signing skills. For three of the studies (Antia and colleagues, 1993; 1996; 1997), information was only given on the communication methods, with a mixture of oral and total communication used. The children were reported to

be of average or above-average intelligence and had no additional disabilities. Kurkjian and Evans (1988) provided no other information about the hearing impaired children.

2.5.4.3 Situational Contexts

The settings the children attended varied across studies. Three studies (Avcioglu, 2007; Fisher *et al.,* 1989; Greenberg & Kusche 1993; 1998) mentioned the children attended a special class in a primary school, but did not mention any mainstreaming. A further three studies (Antia and colleagues, 1993; 1996; 1997) reported the children attended public or private kindergarten or elementary schools and were mainstreamed for part of the day, but did not specify this further.

Another three studies mentioned that the children attended a regular public or private school, but did not mention the extent of mainstreaming (Lemanek *et al.,* 1986; Kurkjian & Evans, 1988; Suarez, 2000). One school had the HI children mainstreamed full-time, in a multi-age classroom with specialist staff (Kreimeyer *et al.,* 2000). Therefore, 10 studies occurred in mainstream schools, although the extent and detail of mainstreaming varied.

In two studies (Rasing & Duker, 1992; Rasing, 1993), the children attended a residential school for deaf children.

2.5.4.4 Intervention Characteristics

The interventions used varied across studies, although the details were described to support replication in the majority of studies. The length and duration of the intervention varied across studies.

Six studies examined social skills training only (e.g. Lemanek *et al.,* 1986; Rasing & Duker, 1992; Rasing, 1993; Suarez, 2000). One study used a Promoting Alternative Thinking Strategies (PATHS) curriculum (Greenberg &

Kusche, 1993; 1998), and another used cooperative learning (Avcioglu, 2007), which incorporates social skills as well as relationship-building lessons. Three other studies (Antia and colleagues 1993; 1996; 1997) compared two interventions, a social skills intervention to build specific skills, and a familiarity intervention using integrated activities.

The social skills were taught through a mixture of modelling, prompting, role-play and discussion across studies where details were described. Two studies specified generalisation procedures through use of contingent reinforcement and correction (Rasing & Duker, 1992; Rasing, 1993), and for PATHS (Greenberg & Kusche, 1993; 1998) and the Antia and colleagues studies (1993; 1996; 1997) skills were generalised throughout the school day.

Antia *et al.*'s (1993; 1996; 1997) studies used a 20-minute intervention two-three times a week, with a mean of around 37 sessions for both the social skills and familiarity interventions. The social skills intervention in Lemanek *et al.* (1986) consisted of two 45-minute sessions a week for approximately four weeks. The cooperative learning intervention in Avcioglu (2007) lasted 30 sessions. Two studies (Rasing & Duker, 1992; Rasing, 1993) included nine 30-minute lessons for social skills, and each skill was taught separately over a five-week period. The PATHS study (Greenberg & Kusche, 1993; 1998) involved a daily programme consisting of 57 lessons. The intervention in Suarez (2000) included 21 lessons, split into interpersonal problem-solving and social skills training.

Three studies used peer-support interventions only. One study (Kurkjian & Evans, 1988) taught sign language to the hearing pupils for an hour twice a week (29 sessions over 5 months), as well as teaching the pupils about deafness. Kreimeyer *et al.* (2000) also taught hearing peers signing in daily 10-15 minute sessions, as well as teaching appropriate attention-gaining behaviours. Another study (Fisher *et al.,* 1989) used three interventions sequentially: a signing class (10 minutes a day), new play equipment and a 'buddy' system with hearing peers, although it did not specify how long each intervention lasted.

2.5.4.5 Measures

The SCED designs used observational measures, although Avcioglu (2007) did not mention any details about the observation contexts or focus. Lemanek *et al.* (1986) was the only study to observe during role-play sessions, and looked at frequency of behaviours, including communication, open-ended questions, smiling, eye contact and gestures. Two studies observed the different behaviours in different contexts chosen by staff. Fisher *et al.* (1989) and Kreimeyer *et al.* (2000) observed participants during lunchtime, although Fisher *et al.* (1989) looked at who the child associated with, the type of social play and use of signing, and Kreimeyer *et al.* (2000) looked at frequency of peer interactions only. Fisher *et al.* (1989) also collected information from teachers and children about their views of the programmes and Kreimeyer *et al.* (2000) conducted interviews with staff and looked at academic achievement of the pupils with HI.

There was a range of data collection methods used in the group designs. Three studies (Antia & colleagues, 1993; 1996; 1997) took observational data regarding positive/negative and verbal/non-verbal interactions. Three studies used sociometric measures (Antia & Kreimeyer, 1996; Suarez, 2000; Kurkjian & Evans, 1998). Three studies (Greenberg & Kusche, 1993; 1998; Suarez, 1998) used behavioural scales with participants and teachers. Greenberg and Kusche (1993; 1998) also used cognitive, social and affect measures from the participants, staff and parents. Kurkjian and Evans (1988) used a standardised Acceptance Scale with the hearing peers.

2.5.4.6 Findings

The results varied across studies, with most studies reporting partially positive findings. Avcioglu (2007) found all children learnt the target behaviours and generalised these to new situations, and students socialised more as a result of the cooperative learning intervention. Lemanek *et al.*

(1986) found substantial increases in social skill performance across all subjects, although there was individual variability. The 11-year old used in this study showed the largest mean score change and improvement at follow-up. Rasing and Duker (1992) and Rasing (1993) found increases in, and generalisation of, the target behaviours, which were largely maintained at follow-up. In addition, Greenberg and Kusche (1993; 1998) found some cognitive and social skills improvements in comparison to the wait-list control. Teacher and parent reports for non-clinical behaviours showed improvement, except where children performed well in the pre-test, and these improvements were maintained at follow-up and in some cases showed further improvement. Suarez (2000) found improvements in emotional and social adjustment and self-image, although there was individual variation between participants.

Antia *et al.* (1993; 1996; 1997) found mixed results. In the 1993 study, total positive peer interaction and interaction with hearing peers increased as a result of both interventions, with greater gains in the integrated-activities group. In the 1996 study, Antia *et al.* found positive interactions with deaf peers increased as part of social skills group, and there was no change with the integrated activities group. Both interventions improved recognition but not social acceptance scores. In the 1997 study, the social skills intervention engaged in significantly more associative/cooperative play, but not peer social interactions.

For the peer support interventions, results were mixed. Kurkjian and Evans (1988) found no difference between signing peers and control on acceptance and sociometric responses, although there were increases for both groups over time. Kreimeyer *et al.* (2000) found increases in interactions between deaf and hearing peers in the classroom as part of the intervention, while gains at lunchtime were smaller. Fisher *et al.* (1989) found time spent alone decreased across the interventions and a slight increase in cooperative play and time spent with hearing peers. Children and teachers were generally positive about the interventions, although not all children liked the ‘buddy’ system.

2.5.4.7 Reliability and Validity

All studies using observations gained inter-rater reliability, with the exception of Avcioglu (2007), who also did not describe the structure and content of the intervention and give details about the participants. In Rasing and Duker (1992), the observers were also unaware of the hypotheses and when the experimental phase had been implemented. Seven out of the 12 studies did not mention treatment fidelity checks for the intervention.

Lemanek *et al.* (1986) described the principles of the intervention, but not the skills taught. Greenberg and Kusche (1993; 1998) also identified teachers varied in their ability to teach the curriculum and motivation. The Kreimeyer *et al.* (2000) study used an unusual school set-up, as the class was multi-age (3 year groups) and supported by two teachers and a speech and language pathologist making it difficult to replicate and generalise from this study.

Avcioglu's (2007) study lacked detailed information regarding the participants and the quantitative data. A number of studies ranged in age of participants, the nature of the hearing impairment and communication (Antia *et al.,* 1993; 1996; 1997; Lemanek *et al.,* 1986; Fisher *et al.,* 1989; Rasing, 1993; Greenberg & Kusche, 1993; 1998; Suarez, 2000; Kreimeyer *et al.,* 2000).

In the six group designs, there were small numbers of participants, children were not randomly assigned to groups and settings varied. However, generally the groups were approximately equivalent. Suarez (2000) study used no control or comparison group, whereas Greenberg and Kusche (1993; 1998) had a control but not comparison group. In the Fisher *et al.* (1989) study, there were possible order effects due to the ABCD SCED design used, which reduces the study's validity. The AB design and the short baseline used in Kreimeyer *et al.* (2000) also reduces validity and makes it more difficult to ascertain whether any differences between the baseline and intervention phases are due to the intervention. However, both studies gained additional data from teachers in an attempt to triangulate findings and therefore potentially increasing the validity.

For four studies, the observations only looked at frequency and not quality of interactions. Lemanek *et al.* (1986) also used role-plays, which limits the predictive validity of this study. Antia *et al*. studies (1993; 1997) only used observational data, with Antia and Kreimeyer (1996) using sociometric data too. Rasing and Duker (1992) and Rasing (1993) had clear behaviour descriptions but acknowledge possible diffusion effects across the behaviours. Rasing (1993) increased social validity by asking staff about the effectiveness of the intervention. Three studies used standardised measures, with known reliability and validity, although not all of them were standardised for a deaf population. There is the possibility the self-report measures used created respondent bias. However, Greenberg and Kusche (1993; 1998) chose measures based on validity for a deaf population. For the Kurkjian and Evans (1988) study, the peers were not aware of the study, but there could have been diffusion of treatment. No measures were used for the HI children, which reduces the validity.

2.5.5 Conclusion

A mixture of SCED and group designs, sampling primary-aged pupils with a variety of HIs and communication methods were used in studies seeking to evaluate the impact of a range of different social support interventions. School settings varied across studies, from special schools to full mainstreaming of pupils. Although the ways that the social skills were taught overlapped, there was variation in what skills were taught. There was also some variation in the peer support systems used, although all included an element of teaching hearing peers to use sign language.

A number of studies used observational measures, although the contexts and focus of the observation varied, and some studies included additional data to triangulate findings. Only three studies used sociometric data (Kurkjian & Evans, 1988; Suarez, 2000; Antia & Kreimeyer, 1996).

This review suggests both social skills interventions and peer support interventions supported some improvement in the social outcomes/inclusion of children with HI, although results across studies were mixed. Some studies showed little or no positive effect, while others showed moderate to good effects.

There were, however, significant limitations with a number of the studies, including lack of treatment fidelity checks, heterogeneous participants and small sample sizes. Due to lack of control and other methodological limitations, there are likely to be extraneous variables in the studies that may account for the results and therefore conclusions drawn. This suggests more research is needed to extend the existing evidence-base for the impact of social interventions on primary aged children with HI.

2.5.5.1 Limitations of the Review

This review only focused on interventions aimed at primary-age pupils, rather than the impact of earlier or later interventions, or interventions involving parents. Only three of the papers had 'high' weight of evidence, according to Gough's (2007) weight of evidence model, with the other eight studies having 'medium' applicability to the question (see Appendix 8.3), meaning the relevance was not always high.

2.6 Summary of Chapter

Previous literature suggests HI children are at risk of delayed development of social skills (e.g. Kluwin *et al.,* 2002; Xie *et al.,* 2014) and peer neglect/rejection can have long-term negative effects (e.g. Dodge, 2003; Bagwell *et al.,* 1998; 2001). However, theory suggests the causes and outcomes of social inclusion and exclusion are complicated and inter-related, which links with the notion of circular causality suggested within systems

theory (Dowling & Osborne, 1994; Miller, 1994) as the problems are exacerbated and perpetuated.

Research around social support interventions in primary school-aged HI children is sparse and has methodological limitations. The evidence suggests that more systematic, experimental and robust research is needed, which seeks to examine the impact of social interventions on particular children with HI in schools. CoF is one such peer support intervention, which aims to support a child in developing his or her social skills.

2.6.1 Rationale for Present Research

The systematic review highlighted that little research has previously been done examining the impact of social support interventions on primary-aged children with an HI. No evidence was found for research applying CoF to children with HI. This research therefore aims to add to the evidence-base for social interventions in primary schools for children with a HI. It further aims to specify the context, sample and intervention characteristics more precisely, as most previous research on CoF have included narrative case studies (e.g. Taylor (1996) and Whitaker *et al.* (1998)). It is hoped that the rigour of the methodology used in the present research can improve the reliability and validity of the evidence presented.

2.6.2 Research Questions and Hypotheses

The principal research question this study seeks to address is:

Does the CoF intervention have a positive impact on social inclusion of primary-age children with a hearing impairment?

This is broken down into three subsidiary research questions, which are detailed below. For experimental and null hypotheses related to each, please see Appendix 8.5:

a) Does CoF improve peer acceptance of primary-aged children with a hearing impairment?

b) Does CoF reduce peer rejection of primary-aged children with a hearing impairment?

c) Does CoF improve happiness of children with a hearing impairment?

3 Methodology

3.1 Introduction

This chapter considers the methodology utilised in the study, including the rationale for the particular approach used. It begins by outlining research paradigms commonly used in psychological and educational research, before looking at the epistemological viewpoint adopted in this study. The study design and procedure are then discussed, along with methodological issues, including ethics, reliability and validity.

3.2 Real World Research

This research took place in the 'real world', i.e. in applied contexts rather than in a laboratory. Therefore, there were different issues to consider in relation to design, ethics and practical limitations (Robson, 2011). It was an evaluation study, as it aimed to assess effectiveness or the impact of an intervention, i.e. CoF (Robson, 2011).

3.2.1 Ontology, Epistemology and Methodology

Ontology refers to the "nature of the subject matter", whereas epistemology relates to the "source of knowledge" (Hitchcock & Hughes, 2002, p. 19). Methodology relates to "the form knowledge should take [and] the ways in which knowledge can be attained and communicated to others" (p. 20). Ontology therefore impacts on the epistemological assumptions, which in turn has implications for the methodology utilised for data collection.

3.2.1.1 The Positivist and Post-Positivist Paradigms

The ontology for positivism is ‘realism’ (Burrell & Morgan, 1979). It is based on the assumption that “the social world can be studied in the same way as the natural world, that there is a method for studying the social world that is value-free, and that explanations of a causal nature can be provided”; it can be studied in an objective manner and there is one definitive reality (Mertens, 2015, p. 11).

However, it was heavily criticised, because of its focus on observable phenomena (rather than more abstract ideas) and the lack of direct correspondence between theory and reality (Robson, 2011).

Post-positivists believe objectivity and generalisability are important, but accept understanding of the truth is “based on probability rather than certainty” (Mertens, 2015, p. 12) and that there may be some biases from the researchers (Robson, 2011).

The epistemology used in post-positivism relies on objectivity and neutrality of the experimenter to manipulate variables and observe using experimental and quasi-experimental methods, such as randomised controlled trials (RCTs), collecting primarily quantitative data (Mertens, 2015). However, post-positivists acknowledge the researcher’s limitations, believing the reality can only be known ‘imperfectly’ and theories can be disproven by new research. Therefore, multiple studies with carefully described procedures and precise hypotheses are required to improve confidence in a theory (Robson, 2011).

3.2.1.2 The Constructivist Paradigm

The ontology for constructivism is ‘normalistic’ (Burrell & Morgan, 1979). It is based on the premise that there are multiple, socially constructed realities,

suggesting meanings are interpreted by researchers and participants and can be changed throughout a study (Mertens, 2015).

A constructivist epistemology acknowledges that the researcher impacts on the outcome; and the researcher and participants influence each other through interactions (Mertens, 2015). Researchers adopting a constructivist paradigm predominantly use qualitative methods such as interviews, observations and document reviews, and acknowledge the importance of understanding the context participants are in and their perceptions.

3.2.1.3 The Pragmatic Paradigm

According to the pragmatic paradigm, there is both a single 'real world' and individual interpretations of the world; inter-subjectivity is important (Mertens, 2015; Robson, 2011; Cohen, Manion & Morrison, 2011). It also endorses fallibilism, understanding theories should inform practice and research conclusions are not definitive and can change over time (Robson, 2011); it is an "'anti-philosophical' philosophy" (p. 30).

Pragmatic researchers use practical thinking rather than theory to decide on the most important and appropriate methodology to answer the research question, which may be quantitative or qualitative in nature (Mertens, 2015; Robson, 2011). The pragmatic paradigm provides a rationale for studies using both quantitative and qualitative research (i.e. mixed methods) (Mertens, 2015). Quantitative methods may be used to assess the impact of an intervention, whereas qualitative methods could be used to conceptualise and monitor a programme (Donaldson, 2007).

3.2.1.4 The Researcher's Ontology and Epistemology

The researcher adopts a post-positivist approach in this research. The researcher is interested in investigating a causal relationship between the

intervention (CoF) and the focus children's peer acceptance, peer rejection and happiness. In doing so, the researcher also attempts to be objective and neutral by acknowledging any limitations in the study, and taking these into account when drawing conclusions (Mertens, 2015; Robson, 2011). The present study therefore utilises quantitative data to measure the impact of CoF on the areas of acceptance, rejection and happiness. The researcher considered a post-positivist stance would best support them in gaining as objective understanding of the impact of COF on measures of peer acceptance, rejection and happiness, but at the same time recognised that this could only ever be imperfectly understood (Mertens, 2015; Robson, 2011). Section 3.3 will provide an overview of designs typically used in post-positivist research.

3.3 Design

3.3.1 Group Designs

There are several different experimental and quasi-experimental group designs, whereby the experimenter manipulates the independent variable and compares the impact of this on the dependent variable(s) (i.e. measure) for the different groups: experimental and control (Mertens, 2015). RCTs are seen as the 'gold standard' of fixed designs, but these are not always practical in applied settings. Other group designs include post-test only treatment comparisons, pre-test post-test controlled trials comparing different treatments (often including a control group with no treatment), factorial designs and matched pairs designs (Robson, 2011). In quasi-experimental designs, participants are not randomly assigned to groups, which may be for practical reasons or based on fixed characteristics such as gender (Mertens, 2015).

Due to the low incidence rates of children with HI in the field of study, group designs were rejected for this research. Therefore, alternative designs that fit with the post-positivist paradigm were considered.

3.3.2 Single Case Experimental Designs (SCED)

"Single subject research is a rigorous, scientific methodology used to define basic principles of behavior and establish evidence-based practices" (Horner *et al.*, 2005, p. 165), because it is possible to determine causal relationships between independent and dependent variables in an experimental way. Therefore, SCEDs are within the post-positivist paradigm (Robson, 2011). They are among "the most effective and powerful" non-randomised experimental designs (Shadish, Cook, & Campbell, 2002, p. 171). SCEDs are representative of 'real life', because they can be used in professional practice and outside of a laboratory. Therefore, they allow a link to be made between research and practice and show individual improvement in participants (Neef, 2009).

SCEDs achieve this because participants act as their own controls (i.e. within-subjects design, Horner *et al.,* 2005), and comparisons are made across experimental conditions (i.e. compared to a baseline), rather than a group average (Morgan & Morgan, 2003). This means all participants can access an intervention and it allows researchers to use a smaller number of participants (Neef, 2009).

"Single-participant research uses frequent and continuous measurement of the dependent variable from individual participants", which shows variability across days (Barlow, Nock & Hersen, 2009). This means the data is more likely to be representative of that participant (Morgan & Morgan, 2003). SCED designs are typically used when observing behaviour, and can be used when there are likely to be idiosyncrasies between participants (Morgan & Morgan, 2003), such as different case histories. A stable baseline phase compared to the intervention phase strengthens the internal validity (Kazdin,

2003; Horner *et al.,* 2005), although repeated measures can be prone to practice effects (Barlow *et al.,* 2009).

There are a number of different SCED designs researchers can adopt. An AB SCED design involves a baseline phase (A) and an intervention phase (B), and an ABA SCED design additionally involves withdrawing the intervention, in order to increase internal validity. However, it is not always possible to change learned behaviours by repeating a baseline phase, or it may not be ethical to remove a helpful intervention (Morgan & Morgan, 2003). Some SCEDs utilise a follow-up phase, such as ABAB or introduce another type of treatment, separately or combined with the first treatment, such as an ABC design (Barlow *et al.,* 2009).

Internal validity is increased by using several cases that demonstrate a change, although this may create issues when the participant histories are different (Kazdin, 2003). Multiple-baseline designs (within-participant or between-participants) where the treatment is implemented across several participants, but also after different baseline durations can be used to enhance replication and therefore internal validity of SCED research (Morgan & Morgan, 2003; Barlow *et al*., 2009).

3.3.2.1 Design of the Current Research

This research adopts an AB SCED design, with multiple baseline across participants as it was not considered ethical to remove the CoF intervention. The limits this design choice creates for the present research are discussed later in Section 3.11.

3.3.3 Variables

The independent variable chosen for this research was the intervention, CoF, previously discussed in Chapter 2 and outlined in more detail in Section 3.5.

The dependent variables were three measures:

- Social Inclusion Survey;
- School Children's Happiness Inventory;
- Strengths and Difficulties Questionnaire.

These will be discussed in more detail in Section 3.6.

3.4 Participants

3.4.1 Inclusion Criteria

It was decided to recruit pupils based on set inclusion criteria.

Inclusion Criteria	Exclusion Criteria	Rationale
Pupils in Key Stage 2.	Pupils in Foundation Stage, Key Stage 1, or attending secondary school.	• To narrow the age range of participants; • To increase likelihood that pupils in the class would be able to understand and empathise with the focus pupil and problem-solve in the Circle meetings.
Pupils attending a mainstream primary school.	Pupils attending a special school or accessing a specialist unit in a primary school.	• To focus on pupils with a HI included with hearing pupils; • To focus on the difficulties that some pupils with a HI may have in this environment.
Pupils with any level of HI.	Pupils with no HI.	• HI has low incidence rate; • Because “hearing loss appears to affect children regardless of severity”, although the authors mention that “the effects are more pronounced with increased severity, delays in identification and intervention, and poor speech and language outcomes” (Taha *et al.*, 2010, p. 47).
Pupils identified as having some social and friendship difficulties.	Pupils where no social or friendship difficulties were identified.	• To increase the likelihood of seeing a difference in the measures used; • To avoid pupils doing an intervention unnecessarily.

Table 3-1 Inclusion and exclusion criteria for participants

It was anticipated the researcher would recruit one participant per school, because HIs are relatively uncommon; however, if two or more suitable cases were identified in the same school (but not the same year group) this would have been acceptable. If two or more children in the same year group at the same school were identified and the intervention was seen as beneficial, these children would be placed on a waiting list and offered the treatment once the research was complete.

In the researcher's local authority, all children with a HI attend mainstream schools and there are only two units for deaf Key Stage 2 children across the county, so the participants were likely to attend a mainstream school full-time with extra support as required.

3.4.2 Study Participant: Focus Pupils

The participants were selected using a 'convenience sample' (Cohen *et al.*, 2011) from within the Local Authority, as the pupils were available at the time of the research implementation. Therefore, it cannot be assumed that a representative sample of the target population was gathered. More detailed information about participants will be outlined at the beginning of the Results chapter.

3.4.3 Study Participants: Context and Other Participants

3.4.3.1 Child A

Child A was a Year 4 girl who has a bilateral sensorineural hearing loss, wore HAs and used oral communication as her main form of communication. The school she attended was a two-form entry religious primary school, located in a town. There were 18 girls and 13 boys in the class.

The CoF was facilitated by the Learning Support Assistant who works with Child A, who had worked with her since Year 2.

3.4.3.2 Child B

Child B was a Year 3 girl who had a bilateral sensorineural hearing loss with a conductive element, wore HAs and used oral communication as her main form of communication.

The school she attended was a three-form entry junior school, next to the infant school. The school was located in a village. There were 11 boys and 14 girls in the class.

The CoF was facilitated by the Parent Link Worker at the school who runs social interventions within the school.

3.4.3.3 Child C

Child C was a Year 4 boy who had a unilateral sensorineural hearing loss. He did not currently use technology to support his hearing and used oral communication as his main form of communication.

The school Child C attended was a two-form entry junior school, located in a town. There were 14 boys and 13 girls in his class.

The CoF was facilitated by a Teaching Assistant who works in Child C's class in the mornings and another class in the afternoons. She had worked in Child C's class since the beginning of the academic year (i.e. 4 months prior to the intervention commencing).

3.4.3.4 Child D

Child D was a Year 6 boy who has a bilateral hearing loss. He used a CI to support his hearing and used oral communication as his main form of communication.

The primary school Child D attended had four classes across the 7 years and was located in a village. There were 12 boys and 11 girls in his class.

The CoF was facilitated by a Teaching Assistant who leads intervention groups across the school, including social interventions.

3.5 Independent Variable: CoF Intervention

CoF has five stages of implementation. A broad overview of the whole process was included in Section 2.3.3, which this section will expand upon and outline the CoF procedure adopted in the current research. Information is taken from Newton and Wilson (2003), unless otherwise stated. Further information can be found in the training materials provided to school staff (see Appendix 8.20).

3.5.1 First Stage: Establishing Pre-Requisites

Before beginning the CoF, the researcher gained commitment from senior management to use the approach, to ensure sufficient time was given to implement it.

The researcher also explained the approach to the parents/carers of the focus child and gained their consent.

Finally, a member of staff familiar to the focus child explained the approach to them and gained their consent.

3.5.2 Second Stage: Initial Meeting with the Focus Child's Class

The researcher led the whole-class meeting, which lasted approximately an hour. The focus child was not present at the meeting, although they were aware it was happening and feedback was provided. The structure outlined in Newton and Wilson (2003) has several stages, which were followed by the researcher:

1. Introduction and aims: discuss behaviour of focus child and think of ways to help him/her;
2. Establish ground rules, including confidentiality;
3. Discuss positive things about focus child;
4. Discuss things that the children find difficult about the focus child;
5. Discuss relationships present in children's lives;
6. Discuss how someone would feel if they had no friends;
7. Discuss how someone would act if they had no friends;
8. Discuss possible solutions to help focus child, which the authors say that this is "an important and therapeutic part of the process" (p. 27);
9. Explain CoF and ask for volunteers

3.5.3 Third Stage: Initial Meeting of the Circle of Friends

This 45-60 minute long meeting took place shortly after the whole-class meeting and was led by a trained CoF facilitator, who took notes. The volunteers and the focus child were present, and the meetings followed the prescribed stages:

1. Introduce self;
2. Agree ground rules, including confidentiality and listening;
3. Agree aims of the group;
4. Invite group members to explain why they volunteered to be part of the Circle;
5. Elicit positives about the focus child and areas that s/he needs to work on;
6. Brainstorm strategies;
7. Agree which strategies can be tried to gain commitment from the group, as well as clarity on responsibilities, disclosures and

boundaries. The group needs to be clear on the expectations and limitations;
8. Agree name of the group, which does not include the focus child's name (e.g. 'listening group');
9. Describe arrangements for follow-up and encourage mutual support in the group.

3.5.4 Fourth Stage: Subsequent Meetings of the Circle of Friends

The follow-up meetings of the Circles lasted approximately 20-40 minutes. They started with a warm-up exercise, before reviewing progress by reflecting on the successes and problems experienced by the CoF in relation to the identified targets and discussing solutions. The groups then decided on new targets and planned details and responsibilities for actions.

3.5.5 Fifth Stage: Ending the Formalised Circle of Friends

The fifth and final stage involved negotiating an ending with the Circle and through a gradual reduction in the frequency of meetings (Taylor, 1997).

3.6 Dependent Variables

3.6.1 Social Inclusion Survey (SIS)

3.6.1.1 Description of the measure

SIS is a sociometric survey created by Frederickson and Graham (1999), used with 7 year-old children and above. It has two forms: Like to Work (LITOW) and Like to Play (LITOP). The names of all the pupils are written down the side and the pupils choose a happy (like to work/play with), sad (prefer not to work/play with) or neutral face (don't mind whether they

work/play with), or a question mark if they do not know the child well enough to make a decision. A script is read out to the pupils before administering the questionnaire, which used is included in Appendix 8.22, along with the rest of the measure.

3.6.1.2 Rationale for using the measure in the study

Several authors (e.g. Nunes *et al.,* 2001; Coie, Dodge & Kupersmidt, 1990; Hymel & Rubin, 1985) highlight the importance of taking peers' perspectives into account, because of their unique perspective on and ideas about social relationships, and because their perceptions impact on the social inclusion of other children. Hymel and Rubin (1985) added that peer assessments provide information from a number of pupils who have varying relationships, and extended and varied experiences with the child. They have better predictive validity for later mental health problems than adult-determined adjustment measures.

Coie *et al.* (1990) and Hymel and Rubin (1985) suggested adults were better at observation, but this can be biased due to emphasising interactions with adults and the limited access to observe outside of the classroom.

The authors of the measure acknowledge it is quick and easy to administer. It has known reliability and validity: test-retest reliability over a 5-week period was 0.70-0.78 and the percentage agreement was 68% (kappa = 0.43), which the authors described as one of the highest for sociometric measures (see Frederickson & Furnham (1998) for more details).

For these reasons, the researcher decided to adopt SIS as a peer rating measure used in this study. Because the focus of this study was on the pupils' social inclusion, the Like to Play questionnaire was be used.

Self-ratings were taken to triangulate the data to gain different perspectives and to see if the focus child's attitudes changed over the course of the

intervention. Wigelsworth, Humphrey, Kalambouka and Lendrum (2010) suggest information from different sources can be complementary.

The data will be used to answer Research Questions (1a) and (1b), related to changes in peer acceptance and peer rejection.

3.6.1.3 Administering the measure

The measure was taken on a weekly basis throughout the baseline and intervention phases from all pupils, including the focus child. Teachers were asked to read the script to the class before the pupils completed the measure. The first measure taken in the intervention phase was taken after the whole class meeting but before the first Circle. To improve reliability and validity, the questionnaire was administered on the same day at the same time. Although data for all the children was gathered, the researcher only analysed data related to the focus child.

The frequency of each rating was counted and recorded/graphed as a percentage. Percentages were chosen as the fairest way to present the data, as it was not possible to guarantee that all the children would be present when data was collected, and therefore variations in the total number of children completing the measure each week. This would have potentially lead to variations in the total raw score and therefore the reliability of the analysis (please see raw frequency data is included in Appendices 8.27-8.30.) Use of percentages meant that each week could be compared, as the scores represented the proportion(s) of the overall score of those present. Proportions also correspond with sociometric definitions used within social inclusion literature, which often uses proportions of like and dislike nominations (see for example, Coie *et al.* (1982) and Newcomb and Bukowski (1983) in Section 2.2.1.1) However, the researcher acknowledges that this could lead to instances where the actual number of acceptance increases (i.e. number of children choosing the ‘happy face’ for the focus

child), but the percentage decreases, due to more children being present to complete the measure that week.

The researcher scored the SIS using the same procedure as Frederickson *et al.* (2005) and Frederickson and Fernham (1998), where the indices of acceptance, rejection and toleration were calculated by dividing the number of happy faces, sad faces and neutral faces respectively by the total number of choices received in all categories except “don’t know”. These will be referred to as ‘composite scores’ in the Results and Discussion sections (i.e. an acceptance composite score, a rejection composite score, and a toleration composite score).

3.6.2 School Children’s Happiness Inventory (SCHI)

3.6.2.1 Description of the measure

This measure was developed by Ivens (2007) and asks children to respond based on how they have been feeling at school in the previous week. It contains 30 items (15 positive and 15 negative), and pupils are asked to choose whether they ‘agree a lot’, ‘agree a little’, ‘disagree a lot’ or ‘disagree a little’ for each statement. Ivens (2007) notes that the SCHI is useful for measuring changes in environmental variables. See Appendix 8.23 for a copy of the measure.

3.6.2.2 Rationale for using the measure in the study

The measure was chosen because it specifically focuses on happiness in a school setting, where the CoF intervention is implemented. Ivens (2007) further suggests it is useful for measuring changes occurring as a result of manipulating environmental variables, which happened in this study with the

introduction of the intervention. It had good reliability with other measures, as well as good concurrent validity and modest predictive validity.

The data will be used to answer Research Question (1c), related to changes in the focus children's happiness in school as a result of the intervention.

3.6.2.3 Administering the measure

The measure was administered to the focus child on two occasions, a week before starting the intervention and at the end of the intervention phase. A member of school staff read the recommended script and supported the focus child in completing the measure. It was then scored as per the instructions in the measure.

3.6.3 Strengths and Difficulties Questionnaire (SDQ)

3.6.3.1 Description of the measure

This is a behavioural screening questionnaire developed by Goodman (1997). There are several different versions, with two age ranges (2-4 year olds and 4-17 year olds), separate questionnaires for parents and teachers, and a self-report questionnaire for students aged 11-17 years. For this study, due to the age of the participants, the parent and teacher questionnaires for 4-17 year olds was used, to allow triangulation between these two perspectives.

Each version contains 25 items the adult is asked to rate as 'not true', 'somewhat true' or 'certainly true' in relation to the child's behaviour. The items relate to psychological attributes on five subscales: pro-social behaviour, conduct problems, hyperactivity, social difficulties and emotional problems. See Appendix 8.24 for the measure.

3.6.3.2 Rationale for using the measure in the study

The measure gathers information on a variety of behaviours (see previous section), which are not covered in the sociometric data (Hymel & Rubin, 1985). It is simple and quick to administer. The SDQ has been standardised, meaning it has known reliability and validity (Goodman, 1997).

The SDQ will be used to answer Research Questions (1a), (1b) and (1c). Scales related to prosocial behaviour and social difficulties will be used to answer Question (1a), scales related to hyperactivity and conduct problems will be used to answer Question (1b), and the emotional problems scale will be used to answer Question (1c).

3.6.3.3 Administering the measure

Parents and teachers were asked to complete the questionnaire on two occasions, a week before starting the intervention and at the end of the intervention phase. It was scored as per the instructions in the measure, using the online scoring tool (www.sdqscore.org/).

3.7 Data Analysis

3.7.1 Statistical Analysis

Several statistical tests can be utilised in experiments, depending on the design. Parametric tests require: data that has been collected using an interval or ratio scale; data that is normally distributed; and samples with equal variance. Non-parametric tests are less powerful, but can be used without making assumptions about the data (Brace, Kemp & Snelgar, 2006). Nominal and ordinal data are typically non-parametric (Cohen *et al.,* 2011).

3.7.1.1 Strengths of Statistical Analysis

Statistical analyses allows a researcher to consider and report effect size, which is not based on the dichotomous decisions of statistical significance (i.e. it is continuous), and is less affected by sample size (Mertens, 2015). Mitchell and Hartmann (1981) suggested it can indicate the strength of association between intervention and outcome, allowing for prediction.

Kazdin (1982) states statistical procedures can be helpful in SCEDs when (a) there is no stable baseline; (b) treatment effects cannot be well predicted, such as with a new intervention; and (c) to control statistically for extraneous factors in applied settings.

3.7.1.2 Limitations of Statistical Analysis

Statistical power is influenced by several factors, including sample size and effect size (Brace *et al.,* 2006). Moreover, statistical analyses can only be used when the data fulfils pre-requisite criteria discussed earlier (Brace *et al.,* 2006).

With regards to SCED designs, there is no consensus on which statistical analysis approach to take (Lundervold & Belowood, 2000), and there are concerns that it reduces the measuring of an impact of an intervention to a single score, thus removing the consideration of the individual.

3.7.2 Visual Analysis

Visual analysis is typically used in SCEDs to assess the relative behaviour change between the baseline phase and the intervention phase, including replication and consistency (Morgan & Morgan, 2003; Brossart, Vannest, Davis, & Patience, 2014). Repeated measures and visual analysis allow judgments to be made on the immediacy and the magnitude of the change

observed in the dependent variable to improve the likelihood that the intervention is the cause of the change, rather than outside influences (Kazdin, 2003).

There are several ways that graphs can be analysed visually (Gibson & Ottenbacher, 1988, p. 302-304; Horner *et al.*, 2005, p. 171):

- Mean shift: the percentage of mean change from the A phase to the B phase, through subtracting the mean in the A phase from the mean of the B phase;
- Variability: amount of fluctuation occurring within or across phases, e.g. through computing standard deviation;
- Level: comparing the last data point in the A phase to the first data point in the B phase, e.g. by dividing the larger number by the smaller number;
- Trend/slope: rate of increase or decrease of the best fit line within a phase and between phases;
- Immediacy: of effect when the intervention is put in place, or withdrawn;
- Magnitude: of changes in the dependent variable;
- Overlap: percentage of overlap between phases, by determining the number of data points for the B phase that fall within the spread of the A phase, then dividing this by the total number of data points in the B phase, and multiplying by 100 to achieve a percentage;

Based on these factors, the visual analysis can show ‘strong’, ‘moderate’ or ‘no evidence’ of effect (Kratochwill *et al.*, 2010). For ‘strong evidence’, there needs to be at least three demonstrations of effect with no non-effects. If three demonstrations are not apparent, there is ‘no evidence’. If there are three demonstrations of an effect and at least one non-effect, then there is ‘moderate evidence’ for the intervention.

3.7.2.1 Strengths of Visual Analysis

Visual analysis allows for variability, and monitoring of change over time during an intervention (Morgan & Morgan, 2003). Tawney and Gast (1984, cited in Gibson & Ottenbacher, 1988) suggest that it provides a comprehensive overview of an individual’s performance, showing the

relationship between the treatment and outcomes measured. If the treatment effect is obviously apparent and consistently identified through visual analysis, this suggests that it may be of clinical significance (Gibson & Ottenbacher, 1988).

3.7.2.2 Limitations of Visual Analysis

However, visual analysis is less reliable than statistical methods, because it is open to interpretation and therefore there may be disagreements among raters about whether there is an observed effect or not (Harbst, Ottenbacher & Harris, 1991). Brossart, Parker, Olson and Mahadevan (2006) suggest raters are provided with contextual information along with the graph data, and asked to analyse the graph using set criteria for the degree of importance, effect or impact helps to make their ratings more reliable. In their study, the authors used a five-point Likert scale to indicate effectiveness of the treatment.

Time-series data is prone to autocorrelation, because the data points are dependent on each other (Barlow *et al*., 2009), which can lead to an increased likelihood of Type I errors, i.e. false positives (Matyas & Greenwood, 1990). However, the present study allowed a week between each data collection point to reduce this possibility.

3.7.3 Data Analysis Approach Used in Study

Visual analysis will be used for the graphs, focusing on level, trend, immediacy, variability and magnitude (Gibson & Ottenbacher, 1988; Horner *et al.,* 2005). Inter-rater reliability was used on a 3-5 point scale as recommended by Brossart *et al.* (2006) (see Appendix 8.31).

Authors recommend the use of both statistical and visual analysis methods (Brossart et al., 2006; Franklin, Allison, & Gorman, 1996). However,

statistical analysis could not be used on the graphs, as there were not enough data points.

3.8 Procedure

The researcher, in conjunction with link EPs and Teachers of the Deaf in the local authority, identified possible pupils who fulfilled the inclusion criteria (Table 3-1). Initial letters were sent to the Head Teachers at these schools, explaining the purpose of the study, the rationale behind the study and intervention, and what participating in the study would entail (see Appendix 8.6). Contact details for the researcher and the researcher's supervisor were provided to allow staff the opportunity to ask for further information and/or express an interest in participating in the research. These letters were followed up by telephone discussions and visits to interested schools to explain the study in more detail to school staff.

Consent was gained from the parents of identified children and children themselves (see 3.10.1 for more information on consent gained). School staff were asked to identify suitable Circle facilitators. The researcher then trained them in the intervention and administering the measures, providing them with resources in order to undertake these tasks (see Appendix 8.20).

The baseline phase was 5 weeks long, and in accordance with the multiple-baseline across participants design. During this phase, school staff administered the SIS measure on a weekly basis, on the same day and at the same time. The SDQ and SCHI were completed the week before the intervention (i.e. pre-test).

After the baseline phase, the researcher returned to the school to lead a whole class CoF meeting, supported by a member of school staff, as outlined in Section 3.5. Circle members were then chosen by school staff, based on which children had parental consent and had expressed an interest in being involved within the whole class meeting. The following week, the trained member of school staff began holding the Circle meetings and gained

consent from the Circle members. The intervention phase lasted 6 weeks, with the SIS being taken weekly and the SDQ and SCHI both being repeated at the end of the intervention phase (i.e. post-test).

During both phases, the researcher was in regular contact with school staff to ensure the data collection and intervention were being undertaken according to the training. Contact details for the researcher were provided to the Circle facilitators so they could access supervision via email, telephone or in person as appropriate to the staff member's needs. A resource pack was given to schools to support implementing the intervention, including a fidelity checklist for each session (see Appendix 8.20-8.21). The researcher made one visit to each school for each member of staff, to undertake treatment integrity checks, in addition to reviewing completed checklists completed by facilitators.

At the end of the study, the researcher provided school staff, participants and parents/carers with information about the outcome of the intervention, as well as contact details should any party have further queries (see Appendices 8.13-8.17).

3.9 Pilot Study

3.9.1 Procedure

In order to ensure the SIS was sensitive enough to be used on a weekly basis, a pilot study was undertaken. It differed from the main procedure in that there was only one pre-intervention baseline measure taken before the whole class meeting, and the intervention phase ran for 3 weeks, due to the intervention beginning towards the end of the summer term. The school continued the CoF the following academic year.

3.9.2 Lessons Learned from the Pilot Study

For the detailed results and a discussion, see Appendix 8.25. The pilot study confirmed the children were able to complete the SIS and the results collected from 7 pupils were sufficiently sensitive to detect changes in peer acceptance and rejection over time. This confirmed the SIS as a suitable measure for this study.

The researcher decided as a result of the pilot to provide the staff with a more organised resource pack for collecting the measures, as a result of comments from the facilitator about difficulties storing materials. Staff were given folders split into sections for each week to put the SIS in. These folders also contained the fidelity checklists and the SCHI and SDQs in the appropriate week sections. The training materials were thought to be sufficient, so were not changed.

3.10 Ethics

When planning this study, the researcher considered the following ethical standards and professional codes of conduct:

- British Psychological Society (2009; 2010; 2014);
- Health and Care Professionals Council (2009);
- University of Nottingham (2013).

Ethical approval was obtained from the University of Nottingham School of Psychology Ethics Committee prior to undertaking any research (see Appendix 8.18). The following ethical considerations were pertinent to this study:

3.10.1 Informed Consent

3.10.1.1 Consent from the Focus Child's Parents

Consent was gained from the parents of the focus child, for both the intervention and research purposes. The letter explained the nature of the study, the intervention and the measures to be taken, including the purpose of the baseline phase. Consent was gained from parents for the researcher to access relevant information about the child's HI and any other identified special needs, academic abilities, eligibility for Free School Meals, ethnicity and first language, and any treatment/remediation received or currently being received, so the researcher could consider any extraneous variables when drawing conclusions. Consent was gained for the nature of the focus pupil's HI to be discussed with the class, but all other information disclosed remained confidential. Contact details for the researcher were provided (see Appendices 8.7 and 8.8).

3.10.1.2 Consent from the Focus Pupil

Consent was gained from the focus pupil to participate in the intervention and complete the measures (see Appendix 8.9). Consent was not gained to use the results for research. This was in order to prevent the results from being influenced by demand characteristics (i.e. participants adapting their answers to suit what they believe the researcher wants).

Consent was gained on a 1:1 basis, with an adult reading and then talking the letter through with the focus pupil. This was done to ensure that they understood and to provide the pupil with an opportunity to ask questions. Information was provided regarding the intervention and the measures, using language that was easy to follow. If the member of staff felt the pupil did not understand, they were instructed to terminate the research.

3.10.1.3 Consent from the Class's Parents

Consent was gained from the parents of the other members of the class to complete the SIS measures and to be part of the Circle, should their child express an interest (see Appendices 8.10 and 8.8). The letter outlined the purpose of the intervention and what the measures and intervention would involve. Contact details for the researcher were provided.

3.10.1.4 Consent from the Pupils in the Class

Like the consent for the focus child, consent was gained from the rest of the class to complete the SIS measures (see Appendix 8.11). The pupils were not aware the results would be used for research, in order to prevent demand characteristics. Further consent to participate in the intervention was gained from the chosen Circle volunteers at the beginning of the first Circle meeting (see Appendix 8.17).

Consent from the children was gained orally, with a script containing information about the measures being read to the class before they filled in the consent form. The pupils were given the opportunity to ask questions.

3.10.1.5 Consent from School Staff

Staff willingness to participate in the research was checked and their verbal consent obtained as part of the training.

3.10.2 Right to Withdraw

Parents were informed they had the right to withdraw their child from the study at any point without explanation. Pupils were told of their right to

withdraw from the intervention and/or completing the measures at any time without explanation. Children were reminded of this right at the beginning of each session. Any parent or pupil withdrawing was informed that they could request that any information/data collected be destroyed following their withdrawal.

3.10.3 Confidentiality

Pupils and schools were not referred to by name on any measure taken, so they were not identifiable. All data was kept anonymously and confidentially. Sessions were not recorded, and fidelity checks focused on the intervention process and characteristics. It was explained that only the researcher and their supervisor would view the data collected.

All information collected as part of the research was retained securely and confidentially and only used for the purposes of this research. It was explained the information would be retained confidentially and anonymously for a period of up to 2 years after the research and then confidentially destroyed.

During the whole class meeting and the CoF meetings, ground rules were discussed and decided upon to ensure safe boundaries were kept for all children participating. Confidentiality was emphasised, i.e. children were reminded information discussed in the Circle should not be shared with other pupils. Pupils were reminded of the ground rules for discussions when necessary.

3.10.4 Honesty and Integrity

The teachers, parents and pupils were informed about the rationale behind the intervention as part of the process gaining consent (see Appendices 8.6,

8.7 and 8.9-8.12). The teachers and parents were informed about the data being used for research purposes.

Although the focus child was not present for the whole class meeting, the discussion was fed back to the focus child privately. Consent was gained from the focus child for this (see Appendix 8.9).

After the study, the school, parents and children were debriefed about the outcomes and given the opportunity to ask questions (see Appendices 8.13-8.17).

3.10.5 Minimising Harm

3.10.5.1 Related to the Intervention

The researcher recognises this research examines a sensitive topic (the impact of HI on social inclusion and peer acceptance/rejection). As part of gaining consent from the focus pupil, consent was gained to hold the whole class meeting without the focus child present. The discussion was then fed back to the focus child in a sensitive and private way. It was expected the adult facilitator would guide the conversations during the Circle meetings so that sensitive topics were covered in an appropriate manner, or, if necessary, the conversation stopped.

The pupils involved in the Circle were carefully selected by school staff, so their contribution was of benefit to the well-being of the focus child. To minimise any negative impact of the intervention or measures, activities took place in a familiar environment, with a familiar adult facilitating.

The intervention was not removed for ethical reasons.

3.10.5.2 Related to the Measures

The research looks at a sensitive topic (social inclusion), so pupils were told to keep their answers confidential. This is highlighted in the scripted instructions for the SIS (see Appendix 8.22). Previous research by Mayeux, Underwood and Risser (2007) found children were not upset when completing sociometric questionnaires; most children enjoyed it, and did not feel their peers treated them differently at follow-up. Nonetheless, pupils were told they should talk to an adult if they felt uncomfortable in any way about the completion of the questionnaire and/or any of their responses. Staff were asked to monitor the class, and if they had any concerns with regards to conflict between pupils or pupils becoming upset (including the focus child), to contact the researcher for support and guidance.

3.11 Reliability and Validity

Reliability refers to the “dependability, consistency and replicability over time, measures and groups of respondents, whereas validity refers to the accuracy of a result” (Cohen *et al.,* 2011, p. 199).

An AB SCED design (as opposed to an ABA or ABC) means the results are less conclusive, as the changes may have occurred without the intervention. This makes the results less reliable and valid (Barlow *et al.*, 2009), as only “*with some major reservations*” can changes be “attributed to the effects of treatment” (p. 137). However, using a multiple-baseline design enhances the validity of the research, as the changes in outcomes can be better attributed to the effects of the intervention. This is because the intervention starts at different times, which reduces the likelihood of the possibility that changes observed would have happened by chance and without intervention.

The standardised measures used in this study have known reliability and validity, as identified in Section 3.6. Using multiple measures allows the researcher to triangulate the data to potentially increase validity and reliability

of the conclusions. Training was provided to ensure the measures were taken in a reliable and valid way. However, all the measures are liable to potential bias (e.g. from mood) or demand characteristics.

3.11.1 Issues with Reliability

In order to minimise the impact of repeated testing, the conditions for administering the measures were kept as similar as possible. Replication of the intervention across participants ensured any changes observed were not due to idiosyncrasies with any individual participants (Barlow *et al.,* 2009). However, unsystematic errors related to participant factors (e.g. mood) are possible, due to the measures involving self-report.

To enhance reliability of the conclusions drawn, it is important for the baseline phase measures to be stable and for measures to be taken in the same conditions, such as the same day and time (Barlow *et al.,* 2009). The staff were asked to do this during the training. However, time constraints limited opportunities to ensure a stable baseline in some cases. This will be taken into account when analysing the data.

Inter-rater reliability was established by the use of another Trainee EP, who was blind to the nature of the study, but had experience with visual analysis. It is acknowledged this process is still open to disagreements and different interpretations of results (Harbst, Ottenbacher & Harris, 1991).

3.11.2 Issues with Validity

The present study has good ecological validity as it involves ‘real world’ research into pupils with HI with identified difficulties with social inclusion in schools.

The intervention followed a manualised procedure for CoF, increasing the treatment integrity of the study. Treatment fidelity checks were undertaken,

both by the researcher and in the form of a checklist for facilitators, to further ensure fidelity to the CoF principles.

3.11.2.1 Issues with Internal Validity

Robson (2011) and Cohen *et al.* (2011) suggest the following aspects of internal validity need to be considered:

Issue	**Attempts to Maximise**	**Remaining Issues**
History Events other than the intervention impacting on the outcome.	Background data was collected to use when drawing conclusions regarding the effectiveness of the intervention.	Cannot not be controlled.
Maturation Change in the participants that is unrelated to the intervention.	The participants acted as their own control and were compared to themselves. A stable baseline reduces the effect of maturation. Five data points were taken for most participants. The pupils were identified due to their persistent difficulties with friendships or social situations, which was unlikely to change without intervention.	Short baseline phase for Child D.
Testing Changes in the results occur as a result of practice and experience of the test	Standardised tests were used, with known reliability and validity. Tests measured opinions rather than learning.	Measures were repeated. The self-report measures mean that demand characteristics could

		possibly have been a threat to validity.
Mortality Participants dropping out of the study	Plan to recruit more participants was devised.	Small number of participants recruited. No participants who began data collection dropped out of study.
Compensatory equalisation of treatment Pressure for the control group to receive improved treatment	Each participant attended different schools.	

Table 3-2 Table to show consideration of internal validity issues

Other threats to internal validity such as time, measurement effects and extraneous variables are reduced in SCEDs, because the repeated measures used show the impact of the independent variable compared to the baseline phase (Neef, 2009). Internal validity was increased by taking five data points for the baseline phase (Barlow *et al*., 2009).

3.11.2.2 Issues with External Validity (Generalisability)

This study did not aim to achieve external validity; instead, the researcher focused on getting in-depth information on the impact of the interventions on the specific case studies identified. The small scale of this research (including the number of participants and the location of the research) and the lack of randomisation, mean the findings cannot be generalised to the wider population (Robson, 2011). External validity would be enhanced by systematic replication across several studies, to reduce the impact of contextual factors. This is done by careful descriptions of the participants, setting and variables involved (Horner *et al.,* 2005).

4 Results

4.1 Introduction

This chapter outlines the analysis of the data collected in this research from three measures: a weekly repeated measure using the SIS and the pre-and post-test data from parent and teacher versions of the SDQ and SCHI for all four participants. Findings are presented for each individual participant, in an attempt to answer the research questions posed in Section 2.6.2

For the SIS, whole class data will be analysed in detail, with a table describing the visual analysis for each rating in the SIS ('happy' – acceptance; 'sad' – rejection; 'neutral'; and 'unsure'). The visual analysis will focus on: level, variability, trend, overlap and immediacy of effect. A summary of the data for the Circle volunteers and the focus child will be presented. This was examined separately to investigate whether changes in the overall class SIS ratings could be attributed solely to changes in the ratings of Circle volunteers. The data for the focus child is also examined to investigate whether the focus child changed his/her view of class members.

The data for the SDQs and SCHI will be compared pre- and post-intervention, and views of children, parents and teachers contrasted.

4.2 Child A

4.2.1 Participant Information

Child A is a girl in Year 4. She has a bilateral sensorineural hearing loss with a conductive element and has worn HAs since September 2010. She had glue ear and previously had grommets fitted in 2010 and 2014. Her hearing loss is greater in the right (77dB – severe) than the left (45dB – moderate)

ear. She has a diagnosis of branochio-oto-renal syndrome, which means it is likely her fluctuating hearing loss has been present from birth, although it was only identified in August 2010.

She is of white British origin and is eligible for free school meals. She is reported to be working below age-related expectations. In April 2011 she received a Statement of Special Educational Needs relating to her hearing loss and language delay and receives 20 hours a week support from a Learning Support Assistant (LSA).

Staff described her as spending most of her time with two other girls, with whom there had been disputes. During the whole class meeting, her peers showed awareness of her hearing difficulties. The pupils identified she may not hear or understand everything that had been said and may not realise that she has interrupted someone (Appendix 8.26).

She was not accessing any other interventions aimed at developing her social skills or social inclusion at the time of this study, although the LSA supports her with any issues as and when they arise.

4.2.2 Social Inclusion Survey

The data for the whole class, CoF volunteers and Child A are presented separately below. The dashed line on the graphs indicates the change in phase between the baseline and intervention. Each line represents the percentage of the class giving a ‘happy’ – acceptance (blue); ‘sad’ – rejection (green); ‘neutral’ (yellow); and ‘unsure’ (red) rating toward the focus child.

4.2.2.1 SIS Findings for the Whole Class

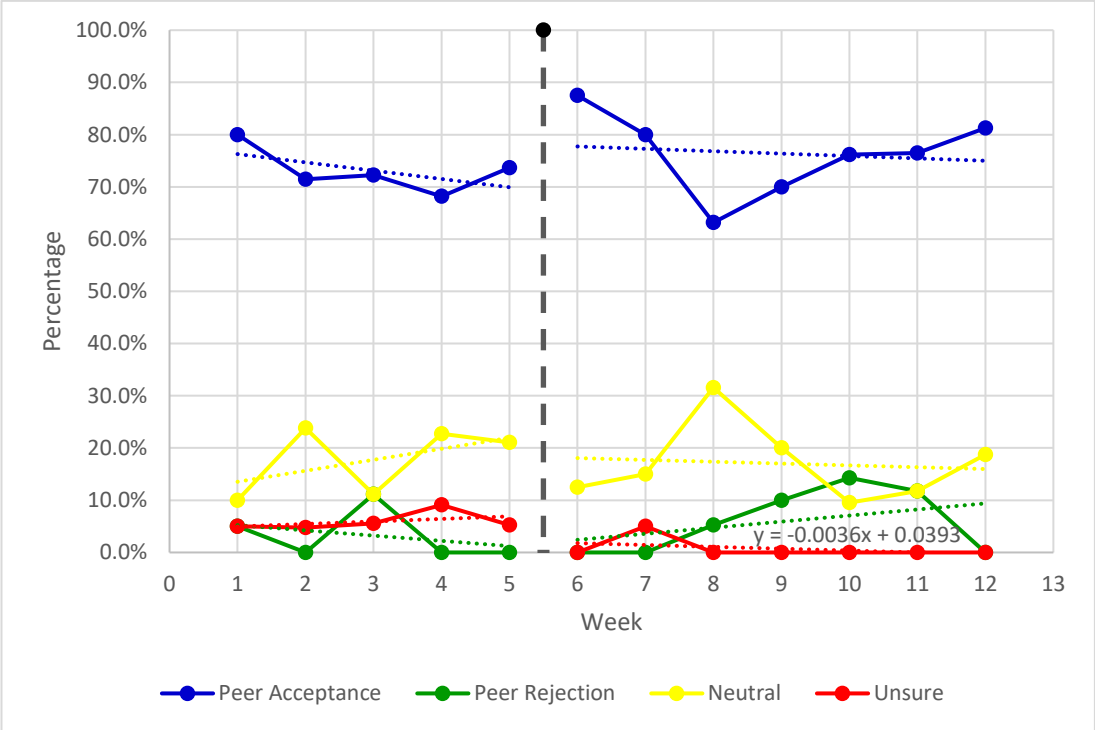

Figure 4-1 A line graph to show the percentage of Social Inclusion Survey ratings given for Child A by peers over time (by week)

The following tables will explore each rating separately for undertaking the visual analysis.

4.2.2.1.1 Visual Analysis of Peer Acceptance ('Happy' Face)

Visual Analysis Feature	Description
Level	Baseline mean: 73.1% Intervention mean: 76.4%
Variability	Baseline range: 68.2-80.0% Baseline standard deviation: 4.4% Intervention range: 63.2-87.5% Intervention standard deviation: 7.9%
Trend	Baseline: negative trend Baseline gradient: -0.0159 Intervention: neutral Intervention gradient: -0.0046
Overlap	66% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 71.4% Average first 3 intervention data points: 76.9%

Table 4-1 Summary of visual analysis of social inclusion scores for Child A: Peer acceptance ('happy' face)

The findings presented in Table 4.1 and Figure 4.1 indicate the level of peer acceptance increases slightly from the baseline to the intervention phase. There is little variability in the baseline phase, meaning it is relatively stable; the intervention phase has slightly more variability. There is a negative trend in the baseline phase in contrast to the neutral trend shown in the intervention phase. There is also a high amount of overlap between the data points in the baseline and intervention phases. Finally, there is an increase of 5.5% peer acceptance in the first three intervention data points when compared with the last three data points in the baseline phase, suggesting an immediacy effect.

From the visual analysis, there is moderate evidence to show Child A's peer acceptance increased as a result of the intervention. The inter-rater reliability data supported this conclusion. The change in level and the immediacy of the effect both support this conclusion. The baseline is relatively stable, although with a negative trend, suggesting the level of peer acceptance was declining through this period. The intervention appears to initially reduce this negative trend. However, the variability in the intervention phase and the overlap of data points make it more difficult to conclude the intervention has had an impact.

Average overall composite peer acceptance score (as discussed in Section 3.6.1) was 0.78 in the baseline phase and 0.76 in the intervention phase, which shows a small decrease and therefore contradicts the visual analysis, although the change is minimal.

4.2.2.1.2 Visual Analysis of Peer Rejection ('Sad' Face)

Visual Analysis Feature	Description
Level	Baseline mean: 3.2% Intervention mean: 5.9%
Variability	Baseline range: 0.0-11.1% Baseline standard deviation: 4.9% Intervention range: 0.0-14.3% Intervention standard deviation: 6.1%
Trend	Baseline: negative trend Baseline gradient: -0.010 Intervention: positive trend Intervention gradient: 0.016
Overlap	71% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 3.7% Average first 3 intervention data points: 1.8%

Table 4-2 Summary of visual analysis of social inclusion scores for Child A: Peer rejection ('sad' face)

For peer rejection, there is a slight increase in level in the intervention phase in comparison to the baseline, suggesting the intervention had a small negative effect. There is a small amount of variability in the baseline phase, meaning that it is relatively stable, although the intervention phase has slightly more variability. The baseline has a negative trend, while the intervention appears to have a positive trend overall, suggesting a small negative impact of the intervention. There appears to be a small immediacy effect, with a reduction in the first three intervention data points. However, there is significant overlap between the data points in the intervention phase.

From the visual analysis, there is no evidence the intervention had an impact on her overall peer rejection, because of the small increase in level, positive

intervention trend, and significant overlap between the data points. However, there appears to be a small immediate effect and the baseline is relatively stable. This was corroborated by the inter-rater reliability data.

Average overall level of peer rejection was 0.03 in the baseline phase and 0.07 in the intervention phase, although the change is minimal. This matches the conclusion from the visual analysis.

4.2.2.1.3 Visual Analysis of 'Neutral' Ratings

Visual Analysis Feature	**Description**
Level	Baseline mean: 17.7% Intervention mean: 17.0%
Variability	Baseline range: 10.0-23.8% Baseline standard deviation: 6.6% Intervention range: 9.5-31.6% Intervention standard deviation: 7.4%
Trend	Baseline: positive trend Baseline gradient: 0.0210 Intervention: slight negative trend Intervention gradient: -0.0035
Overlap	86% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 18.3% Average first 3 intervention data points: 19.7%

Table 4-3 Summary of visual analysis of social inclusion scores for Child A: 'neutral' face

There is a very slight decrease in the level in the intervention phase, which suggests any effect of the intervention was minimal. There is some variability in both the baseline and intervention phases, meaning the baseline phase is

not stable. This, along with slightly more variability in the intervention phase is a limitation. The baseline phase has a positive trend and the intervention phase has a slight negative one, indicating there was a small improvement from the intervention. However, a significant proportion of the data points in the intervention phase overlaps with the baseline phase, meaning that the data has limitations. There is a small increase in the percentage of pupils giving neutral ratings immediately after the intervention commences, suggesting a small negative impact.

From the visual analysis there appears to be no evidence for a clear impact for the intervention on the 'neutral' rating of Child A from peers. There are small positive changes in level and trend, but the variability, unstable baseline, overlap and immediate increase limit this conclusion. The inter-rater reliability data supported this conclusion.

Toleration showed a small decrease from 0.19 to 0.17, which does not indicate sufficient change, corroborating the conclusion from the visual analysis.

4.2.2.1.4 Visual Analysis of 'Unsure' Ratings

Visual Analysis Feature	Description
Level	Baseline mean: 5.9% Intervention mean: 0.7%
Variability	Baseline range: 4.8-9.1% Baseline standard deviation: 1.8% Intervention range: 0.0-5.0% Intervention standard deviation: 1.9%
Trend	Baseline: slight positive trend Baseline gradient: 0.0049 Intervention: slight negative trend Intervention gradient: -0.0036
Overlap	14% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 6.6% Average first 3 intervention data points: 1.7%

Table 4-4 Summary of visual analysis of social inclusion scores for Child A: 'unsure' ratings

The level of 'unsure' ratings shows a reduction from the baseline to the intervention phase, although the baseline level was low to begin with, which suggests there is a very small effect. Both the baseline and intervention phases show only a small amount of variability, although ratings reached 0% level (floor) level, which limits the usefulness of this observation. However, this suggests peers did know her well enough to make a decision. The baseline shows a slight positive trend, which changes to a slight negative trend in the intervention phase, suggesting a small impact of the intervention. Only one data point in the intervention phase overlaps with the baseline phase, again giving support to the idea of an effect. There is some evidence of an immediate effect when comparing the means of baseline and intervention phase.

From the visual analysis, there appears to no evidence for a reduction in percentage of peers being 'unsure' about her during the intervention phase, due to the floor effect and unstable baseline. However, there is a small change in level, change in trend, small variability, lack of overlap and immediacy of the effect. The inter-rater reliability data supported this conclusion.

4.2.2.2 SIS Findings for Circle Volunteers Only

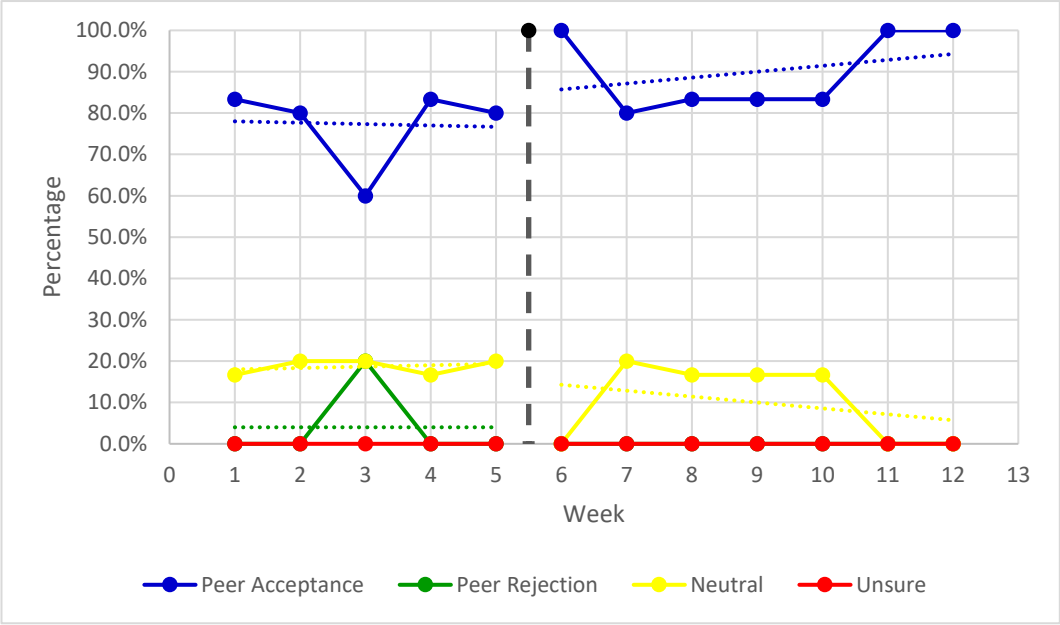

Figure 4-2 A line graph to show the percentage of Social Inclusion Survey ratings given for Child A by Circle volunteers over time (by week)

There is a change in level of peer acceptance of Child A for Circle volunteers in the intervention phase, suggesting an effect of the intervention. The baseline phase is not stable due to an outlying data point, and has a slightly negative trend. In comparison, the trend in the intervention phase is positive, which supports a positive effect. There is an immediate increase after the first week of the intervention, which shows a positive impact. However, there is significant overlap between the two phases and variability in both phases, which limits these findings. Overall, this suggests moderate evidence for the

intervention, due to the change in level, trend and immediate effect, while taking into account the overlap and variability.

Peer rejection is mostly at 0% throughout the baseline and intervention phases, except for Week 3, where one child chose the 'sad' face and therefore it is not possible to analyse this data for evidence of an effect.

The 'neutral' rating data has a stable baseline phase and immediately drops following the introduction of the Circle, but returns to a similar level to baseline in Weeks 7-10, before reducing again in Weeks 11 and 12, suggesting no evidence of impact.

There is no change in the 'unsure' rating, which stays at 0% throughout the baseline and intervention phases, suggesting no evidence of impact.

4.2.2.2.1 Summary of Child A's Circle Findings

Overall, the pattern of peer acceptance in the Circle seems to follow a similar pattern to the whole class data. There is, however, less variability in the 'neutral' ratings made by Circle volunteers compared to the whole class. In the intervention phase, the percentage of 'neutral' ratings from the whole class is generally higher than for the Circle volunteers. Overall, this suggests changes in the intervention phase for the whole class data were due to reductions in the Circle volunteers choosing the 'neutral' rating, and instead choosing the 'happy' face. The rejection and 'unsure' ratings data for the Circle volunteers did not significantly impact on the whole class ratings, as they are mostly at 0%.

4.2.2.3 SIS Findings for Focus Child

Data was only taken for the intervention phase for Child A, so this indicative data will be analysed descriptively, due to its significant limitations. For the full results, please refer to Appendix 8.27.

From the beginning of the intervention, the number of children who she likes to play with decreases from 6 to 2, which suggests a negative effect. However, the number of children she does not like to play with decreases from 13 to 9, which is a positive impact. The number of children who she does not mind whether she plays with or not increases. This is partly positive and partly negative, as it is associated with the decrease in the number of children she likes to play with (negative effect) and a decrease in the number of children she does not like to play with (positive effect). The number of 'unsure' ratings remains at 0, showing no change.

4.2.3 School Children's Happiness Inventory

Child A's SCHI score pre-intervention was 85, which is in the 'low average' range. Post-intervention, this decreased to 64, which is in the 'very low' range, suggesting her happiness decreased significantly during the course of the intervention.

4.2.4 Strengths and Difficulties Questionnaire

Child A's parents and class teacher completed an SDQ pre- and post- the CoF intervention. Results are given below.

4.2.4.1 Parent SDQ

	Pre-Intervention		Intervention		Difference
	Score	**Description**	**Score**	**Description**	
Overall stress	13	Average	13	Average	0
Emotional distress	7	Very High	8	Very High	+1
Behavioural difficulties	0	Average	0	Average	0
Hyperactivity/ concentration	3	Average	2	Average	-1
Difficulties getting on	3	Slightly Raised	3	Slightly Raised	0
Kind and helpful	10	Average	10	Average	0
Impact of difficulties	4	Very High	4	Very High	0

Table 4-5 Table to show the scores for Child A on the Parent SDQ before and after the intervention

The parent SDQ shows a mixed profile at pre-test. The 'overall stress' is in the 'average' range, although the impact of difficulties is 'very high'. There are three scales in the 'average' range: 'behavioural difficulties', 'hyperactivity/concentration' and 'kind and helpful'. The 'difficulties getting on' scale is 'slightly raised', while 'emotional distress' is 'very high'. Overall, this suggests there appears to be no concern about Child A's behaviour, but there are some concerns regarding her social skills and significant concerns regarding her emotional adjustment.

Post-intervention, there is very little change in the parent's perception of her strengths and difficulties, with only two scales showing changes in score.

‘Hyperactivity/concentration’ reduces by one point, but still within the ‘average’ range and ‘emotional distress’ increases by one point, although is still within the ‘very high’ range. This suggests that there was little effect on the parents’ perception of Child A’s strengths and difficulties as a result of the intervention.

4.2.4.2 Teacher SDQ

	Pre-Intervention		Intervention		Difference
	Score	**Description**	**Score**	**Description**	
Overall stress	11	Average	15	Slightly Raised	+4
Emotional distress	7	Very High	10	Very High	+3
Behavioural difficulties	0	Average	0	Average	0
Hyperactivity/ concentration	1	Average	4	Average	+3
Difficulties getting on	3	Slightly Raised	1	Average	-3
Kind and helpful	10	Average	10	Average	0
Impact of difficulties	2	High	2	High	0

Table 4-6 Table to show the scores for Child A on the Teacher SDQ before and after the intervention

The pre-intervention teacher SDQ indicates that ‘overall stress’ is in the ‘average’ range, although the ‘impact of difficulties’ is ‘high’. Three sub-scales are within the ‘average’ range: ‘behavioural difficulties’, ‘hyperactivity/concentration’ and ‘kind and helpful’. However, ‘difficulties getting on’ is ‘slightly raised’ and ‘emotional distress’ is ‘very high’. Overall, this suggests that there appears to be no concern about Child A’s behaviour, but there are some concerns regarding her social skills and significant concerns regarding her emotional adjustment.

Post-intervention, there appears to be some change in the teacher's perception of her strengths and difficulties, although not always in a positive direction. Positively, the score for 'difficulties getting on' reduces by 3 points to be within the 'average' range. However, 'overall stress', 'emotional distress' and 'hyperactivity/concentration' all increase, although the qualitative description only changes for 'overall stress', from 'average' to 'slightly raised'. This suggests there was some change on the teacher's perception of Child A's strengths and difficulties as a result of the intervention.

4.2.4.3 Summary of Parent and Teacher SDQs

The pre-intervention measures show an almost identical pattern for the parent and teacher views. The post-intervention measures show some more differences. There was little change in the parent ratings of strengths and difficulties. In contrast, the teacher SDQ shows more changes, although not all changes are significant. There is a reduction in 'difficulties getting on' to within the 'average' range. Other changes are less positive, with 'overall stress', 'emotional' distress' and 'hyperactivity/concentration' increasing. 'Emotional distress' shows a small increase in the parent SDQ, whereas 'hyperactivity/concentration' shows a small decrease.

4.3 Child B

4.3.1 Participant Information

Child B is a girl in Year 3 with a severe bilateral sensorineural hearing loss diagnosed in May 2010, although the exact cause of this has not been identified. Her hearing is better in the left ear (52dB – moderate) than the

right (81dB – severe) ear. She wears two HAs and uses a microphone system in school.

She is of white British origin and does not qualify for free school meals. She received a Statement of Special Educational Needs in February 2011 and has 25 hours of support from a Learning Support Assistant each week. The areas of need identified on the Statement include: her hearing impairment; language; literacy and numeracy skills; confidence in initiating interactions with adults and peers; and listening and auditory discrimination. Academically, she was reported to be working slightly below age-related expectations in literacy and numeracy, although her class teacher identified no other special educational needs.

Staff indicated her social difficulties were minimal, although she can have difficulty if the conversation topic changes. Her Statement highlights that she finds big social gatherings and initiating social interactions without adult support difficult. Her teacher reported her turn taking had improved and that she will extend conversations with the support of guided questions. During the whole class meeting, her peers mentioned she could find it difficult to speak sometimes and talks in a quiet voice, she can be shy and get upset, and sometimes walked away from other children when they were talking. The children were aware of her hearing difficulties (Appendix 8.26).

She had not accessed any interventions aimed at developing her social skills or social inclusion since starting in the junior school.

4.3.2 Social Inclusion Survey

The data for the whole class, CoF volunteers and Child B are presented separately below.

4.3.2.1 SIS Findings for the Whole Class

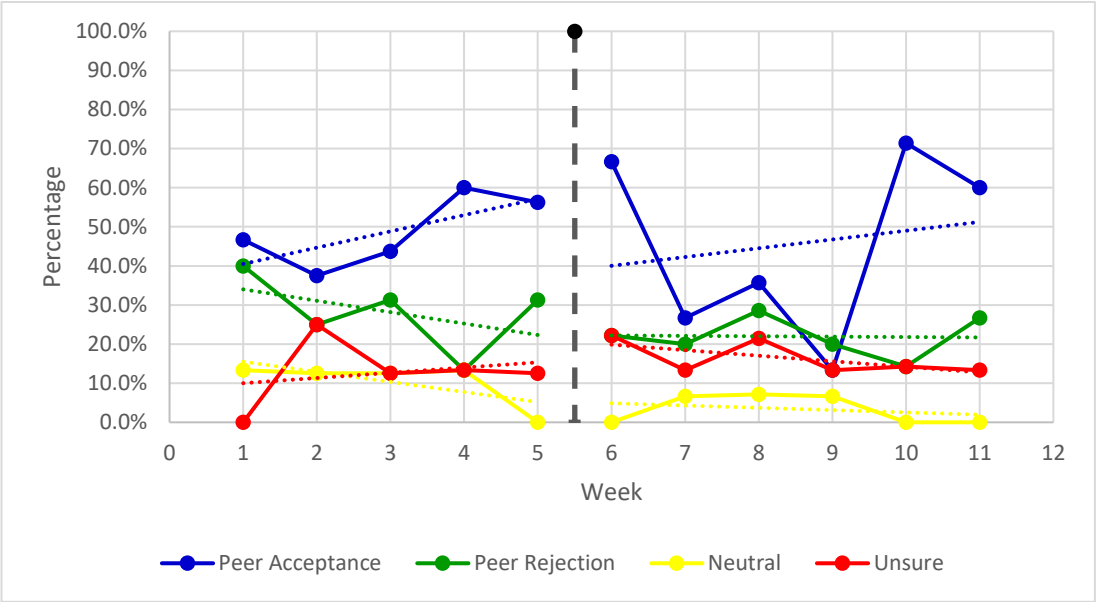

Figure 4-3 A line graph to show the percentage of Social Inclusion Survey ratings given for Child B by peers over time (by week)

The following tables will explore each rating separately for undertaking the visual analysis.

It is worth noting in Weeks 6 and 10 there were fewer children completing the measure. For the raw frequency data, please refer to Appendix 8.28. The limitations this creates in the data set will be discussed in Section 5.11.

4.3.2.1.1 Visual Analysis of Peer Acceptance ('Happy' Face)

Visual Analysis Feature	Description
Level	Baseline mean: 48.8% Intervention mean: 45.6%
Variability	Baseline range: 37.5-60.0% Baseline standard deviation: 9.2% Intervention range: 13.3-71.4% Intervention standard deviation: 23.7%
Trend	Baseline: positive trend. Baseline gradient: 0.0417 Intervention: positive trend. Intervention gradient: 0.0224
Overlap	50% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 53.3% Average first 3 intervention data points: 43.0%

Table 4-7 Summary of visual analysis of social inclusion scores for Child B: Peer acceptance ('happy' face)

The findings presented in Table 4-7 and Figure 4-3 indicate a slight decrease in the level of peer acceptance in the intervention phase. Weeks 1-3 show relatively little variability (37% to 46%) but then in Week 4 there is an increase to 60%, which stays similar in Week 5 (56%). This indicates the baseline is not stable. There is more variability during the intervention phase, with a significant drop across Weeks 7-9. Both the baseline and intervention phases show an overall positive trend, although the intervention trend is less accelerated than the baseline phase. There is a significant proportion of overlapping data points between the baseline and intervention phase (50%). The averages for the last three data points of the baseline phase and the first three data points in the intervention phase show a reduction in peer

acceptance, although it should be noted there is an immediate improvement in Week 6 that reduces in the following two weeks.

From the visual analysis there is no evidence for an impact on the peer acceptance of Child B, while the inter-rater reliability data indicated moderate evidence for an increase in peer acceptance. This is because there is a slight decrease, unstable baseline, variability in the intervention phase, positive trend in both phases, immediate reduction of peer acceptance and overlap of data points.

The peer acceptance composite score increased from 0.56 in the baseline phase to 0.69 in the intervention phase, which shows an improvement in contrast with the visual analysis.

4.3.2.1.2 Visual Analysis of Peer Rejection ('Sad' Face)

Visual Analysis Feature	Description
Level	Baseline mean: 28.2% Intervention mean: 22.0%
Variability	Baseline range: 13.0-40.0% Baseline standard deviation: 9.9% Intervention range: 14.3-28.6% Intervention standard deviation: 5.2%
Trend	Baseline: negative trend. Baseline gradient: -0.0292 Intervention: neutral trend. Intervention gradient: -0.001
Overlap	100% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 25.3% Average first 3 intervention data points: 23.6%

Table 4-8 Summary of visual analysis of social inclusion scores for Child B: Peer rejection ('sad' face)

The level of rejection decreases in the intervention. The baseline shows a negative trend with significant variability, meaning it is not stable. The trend is neutral in the intervention phase, although there is some variability. Due to an outlying data point in the baseline phase, all of the data points overlap between the baseline phase and the intervention phase. The averages for the last three data points in the baseline phase and the first three data points in the intervention phase shows a decrease in rejection, although this increases slightly in Week 8.

From the visual analysis, it appears there is moderate evidence to suggest an improvement in Child B's rejection due to the intervention. The inter-rater reliability data corroborated this conclusion. This is because the level of

rejection decreased, and there was an immediate effect, although it remained relatively stable over the intervention phase. Removing the outlying data point in the baseline phase means only two data points in the intervention phase overlap with the baseline phase. However, the negative trend and variability in the baseline makes it more difficult to conclude the intervention had an impact.

Average composite peer rejection decreased from 0.32 in the baseline phase and 0.26 in the intervention phase, which shows an improvement, similar to the visual analysis.

4.3.2.1.3 Visual Analysis of 'Neutral' Ratings

Visual Analysis Feature	Description
Level	Baseline mean: 10.3% Intervention mean: 3.4%
Variability	Baseline range: 0.0-13.3% Baseline standard deviation: 5.8% Intervention range: 0.0-7.1% Intervention standard deviation: 3.7%
Trend	Baseline: negative trend. Baseline gradient: -0.0258 Intervention: slight negative trend. Intervention gradient: -0.0059
Overlap	100% of the data points in the intervention phase overlap with data points in the baseline phase. If the 0% data point in the baseline phase is discounted, 0% of the data points in the intervention phase overlap.
Immediacy of effect	Average last 3 baseline data points: 8.6% Average first 3 intervention data points: 4.6% There does not appear to be a clear immediacy of effect.

Table 4-9 Summary of visual analysis of social inclusion scores for Child B: 'neutral' face

The intervention shows a reduction in level for 'neutral' ratings. In the baseline phase there is little variability until Week 5, when it drops to 0%, meaning it is relatively stable. There is less variability in the intervention phase, although all of the data points overlap with the baseline phase. Both phases show a negative trend, although the intervention phase shows less of an acceleration. Due to an outlying data point in the baseline phase, all of the data points overlap between the baseline phase and the intervention phase. There is a slight immediate decrease in the intervention phase.

From the visual analysis, there is moderate evidence of a reduction in 'neutral' ratings in the intervention phase. The inter-rater reliability data confirmed this conclusion. This is because of a reduction in level, a slight immediacy of effect, and stable baseline and minimal overlap when the outlying data point is discounted. However, the overall variability and trend make it more difficult to conclude there is an impact.

Toleration shows a drop from 0.12 to 0.04, along with the reduction in peer rejection, suggesting a positive impact, similar to the visual analysis.

4.3.2.1.4 Visual Analysis of 'Unsure' Ratings

Visual Analysis Feature	**Description**
Level	Baseline mean: 12.7% Intervention mean: 16.3%
Variability	Baseline range: 0.0-25.0% Baseline standard deviation: 8.9% Intervention range: 13.3-22.2% Intervention standard deviation: 4.3%
Trend	Baseline: slight positive trend. Baseline gradient: 0.0133 Intervention: slight negative trend. Intervention gradient: -0.0142
Overlap	100% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 12.8% Average first 3 intervention data points: 19.0%

Table 4-10 Summary of visual analysis of social inclusion scores for Child B: 'unsure' ratings

The level shows a slight increase in the intervention phase. There is variability between Weeks 1 and 3 in the baseline phase (0% to 25%), but little variability in Weeks 3 to 5. There is less variability in the intervention phase. The trend shows a reverse pattern: the baseline shows a slightly positive trend, whereas the intervention has a slight negative trend. All of the data points overlap. For the immediacy effect, the average shows an increase in the intervention phase. There is a slight increase in Week 6, although it returns to a similar level to the baseline phase for Weeks 7 and Weeks 9-11.

From the visual analysis, there is no evidence to conclude the intervention had an impact on 'unsure' ratings. The inter-rater reliability data agreed with this conclusion. There is a slight increase overall and immediately after the intervention phase (i.e. not the hoped for direction), although the trend in the intervention suggests the pattern of ‘unsure’ ratings is reducing. However, there is variability and significant overlap.

4.3.2.2 SIS Findings for Circle Volunteers Only

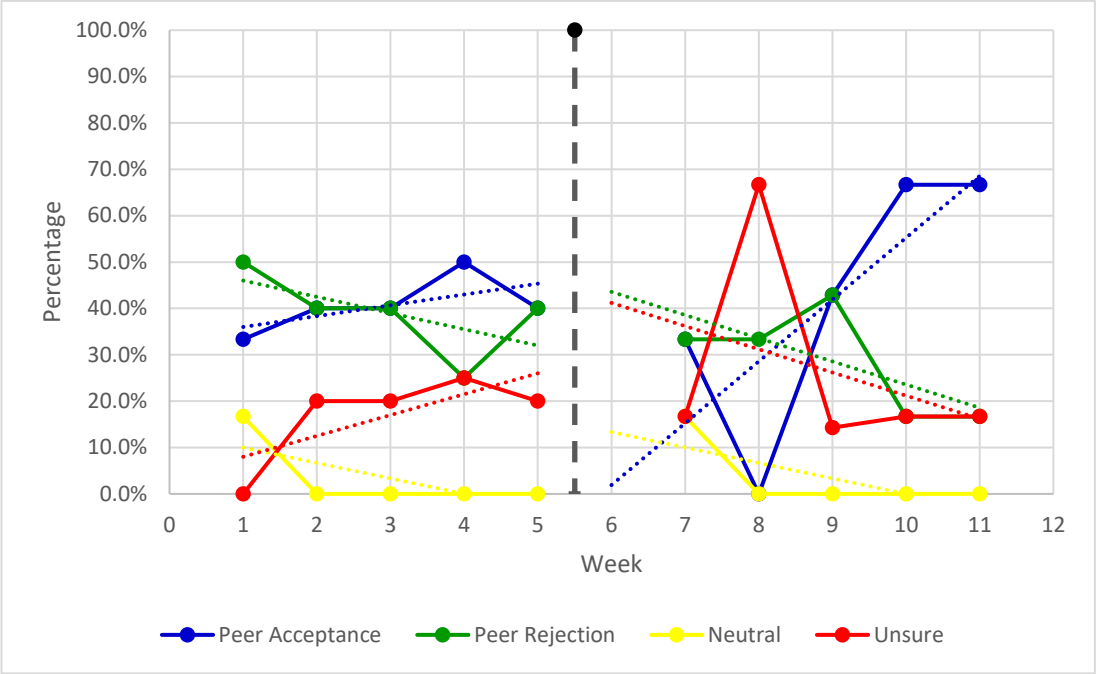

Figure 4-4 A line graph to show the percentage of Social Inclusion Survey ratings given for Child B by Circle volunteers over time (by week)

There is a slight increase in level of acceptance during the baseline phase, and a further increase by the end of the intervention phase. There is a slight positive trend in the baseline phase, meaning the baseline is not that stable. This trend is more accelerated in the intervention phase. However, part of this increase is due to the lower acceptance levels immediately after the intervention begins; there is an immediate reduction. There is some variability in the baseline phase, but more in the intervention phase. Two of the data points overlap, although one data point in the intervention phase is lower than the baseline. This provides moderate evidence for improvements in peer acceptance.

The percentage of rejection shows a slight overall decrease during the baseline phase, and shows another slight decrease at the end of the intervention phase. However, there is variability across both phases, and both show a negative trend, although the baseline trend is more accelerated

and therefore not stable. Over half of the data points overlap and there is no clear immediate effect. Therefore, there is no evidence for an impact of the intervention.

'Neutral' ratings show no overall change, as it remains at floor for most of the baseline and intervention phase. Therefore, there is no evidence for an impact of the intervention.

'Unsure' ratings show no clear change in level. The baseline has a positive trend and is not stable, and the intervention has a negative trend due to a high outlying data point. There is variability in the baseline phase, and significant variability in the intervention with the outlying data point. The final 3 data points are lower than the baseline and do not overlap. There is no clear immediate effect. Therefore, there is no evidence for an impact of the intervention.

4.3.2.2.1 Summary of Child B's Circle Findings

Overall, some of the changes in peer acceptance and rejection can be attributed to the Circle volunteers. The patterns of all ratings appear similar to the whole class in the baseline phase. In the final weeks of the intervention phase, there appears to be a proportionally higher increase in peer acceptance in comparison to the whole class data. Peer rejection decreases more for Circle volunteers than the whole class towards the end of the intervention. 'Neutral' ratings are at a low level throughout the intervention phase for both the data for the Circle volunteers and for the whole class. The 'unsure' data for the Circle volunteers shows some more variability for one week, but overall follows a similar pattern to the whole class data.

4.3.2.3 SIS Findings for Focus Child

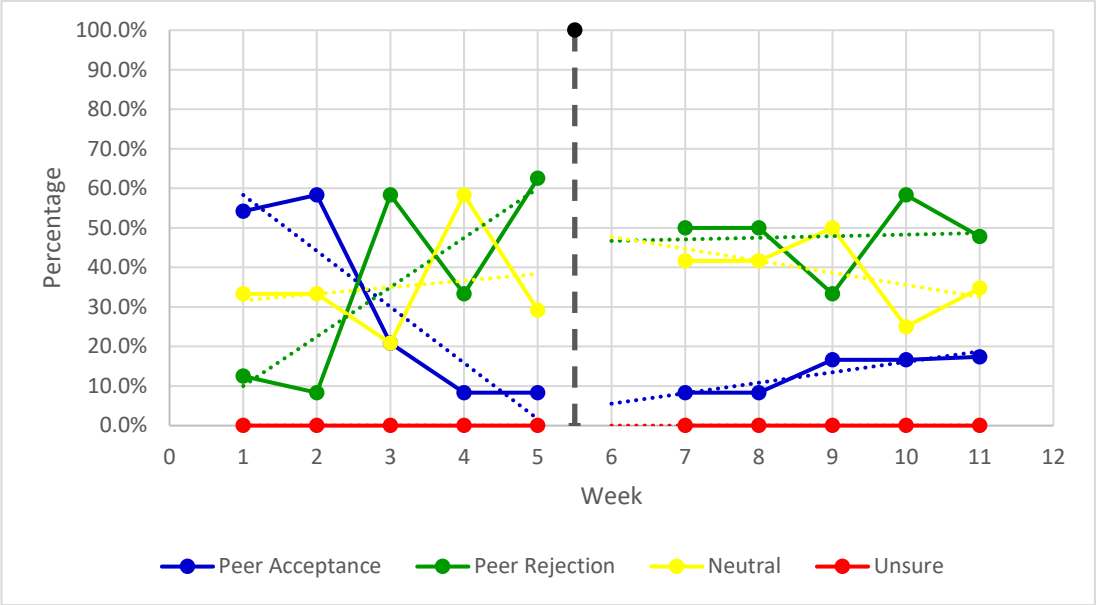

Figure 4-5 A line graph to show the percentage of Social Inclusion Survey ratings of Child B towards class peers over time (by week)

Figure 4-5 suggests number of children who Child B likes to play with initially starts high, but then reduces considerably during the baseline, meaning the baseline is not stable, because there is significant variability and a negative trend in the baseline phase. However, during the intervention phase it shows a very slight increase from the beginning, with a slight positive trend and little variability. There is significant overlap and no clear immediacy effect, meaning there is no evidence for impact, except the increase during the intervention phase.

The number of children who Child B does not like to play with initially starts off low, but then increases substantially during the baseline phase, meaning the baseline is not stable, because there is a positive trend and high variability in the baseline phase. In the intervention phase, all of the data points overlap with the baseline phase data, although there is less variability than the baseline phase, with a neutral trend. This means there is no overall evidence of impact.

The number of children whom she does not mind whether she plays with or not (i.e. ‘neutral’) shows a variation, so it is not stable. It remains at a similar level across the baseline and intervention phases (i.e. all data points in the intervention phase overlap with the baseline phase data). There is a slight positive trend in the baseline phase and a negative trend in the intervention phase. Overall, there is no evidence to suggest the intervention had an impact.

The number of children that Child B is ‘unsure’ about remains at 0 throughout the baseline and intervention phase. This means there is no evidence to suggest that the intervention had an impact.

4.3.3 School Children’s Happiness Inventory

The pre-intervention score was 100 and the post-intervention score was 98. This shows a slight decrease post-intervention, although both scores are within the ‘average’ range. This suggests she is generally happy at school, and the change post-intervention is not significant.

4.3.4 Strengths and Difficulties Questionnaire

Child B's parents and class teacher completed an SDQ pre- and post- the CoF intervention. Results are given below.

4.3.4.1 Parent SDQ

	Pre-Intervention		Intervention		Difference
	Score	**Description**	**Score**	**Description**	
Overall stress	23	Very High	22	Very High	-1
Emotional distress	6	High	5	High	-1
Behavioural difficulties	4	High	4	High	0
Hyperactivity/ concentration	8	High	8	High	0
Difficulties getting on	5	Very High	5	Very High	0
Kind and helpful	5	Very Low	6	Low	+1
Impact of difficulties	5	Very High	5	Very High	0

Table 4-11 Table to show the scores for Child B on the Parent SDQ before and after the intervention

The Parent SDQ indicates significant difficulties across all areas at pre-intervention. One of the behavioural scales ('difficulties getting on') is 'very high', and three are 'high': 'emotional distress', 'behavioural difficulties' and 'hyperactivity/concentration'. 'Kind and helpful' is 'very low'. The SDQ indicates 'overall stress' and the 'impact of difficulties' are 'very high'. Overall, this suggests there are concerns about Child B's social, emotional and behavioural adjustment.

The post-intervention SDQ indicates very little change. Three of the scales show a change of 1 point in the hoped for direction, although only one of these leads to a change in category: 'kind and helpful behaviour' increased from 'very low' to 'low'. This suggests there was limited effect on the parents'

perception of Child B's strengths and difficulties as a result of the intervention.

4.3.4.2 Teacher SDQ

	Pre-Intervention		Intervention		Difference
	Score	**Description**	**Score**	**Description**	
Overall stress	2	Average	1	Average	-1
Emotional distress	0	Average	0	Average	0
Behavioural difficulties	0	Average	0	Average	0
Hyperactivity/ concentration	2	Average	1	Average	-1
Difficulties getting on	0	Average	0	Average	0
Kind and helpful	10	Average	9	Average	-1
Impact of difficulties	0	Average	0	Average	0

Table 4-12 Table to show the scores for Child B on the Teacher SDQ before and after the intervention

The Teacher SDQ scores were all within the 'average' range pre-intervention, indicating according to the teacher's report Child B had no significant social, emotional or behavioural difficulties at school. Post-intervention scores show little change, with three scales reducing by 1 point each. Two of these reductions are in the hoped for direction, but 'kind and helpful' shows a decrease, where a high score is better. This suggests there was little effect on the teacher's perception of her strengths and difficulties as a result of the intervention.

4.3.4.3 Summary of Parent and Teacher SDQs

There was a difference between the parent and teacher SDQs at pre- and post-test, with the parent SDQ suggesting more significant difficulties. The parent SDQ at pre-test suggests the difficulties were having a 'very high' impact, whereas the teacher said the impact of the difficulties is 'average'. At post-test, there is no significant change in either the parent or the teacher SDQ.

4.4 Child C

4.4.1 Participant Information

Child C is a boy in Year 4. He was diagnosed with unilateral sensorineural hearing loss in his left ear (31dB – mild) that particularly affects the speech frequency zones of 250Hz and 500Hz in 2014. He does not wear any hearing aids or use other technology to support his hearing loss. Child C is of white British origin and does not qualify for free school meals. Academically he was working at age-related expectations in literacy, but slightly below age-related expectations in numeracy. There were no other identified special educational needs.

The Teacher of the Deaf suggested Child C as a participant because, at the time, he was having difficulties settling in class and experiencing some emotional issues. At the time of commencing the intervention, staff described Child C as being shy and reluctant to answer questions, and said he does not speak highly of himself. During the whole class meeting, the pupils did not identify any social difficulties that Child C has, although they showed awareness of his hearing difficulties (Appendix 8.26).

Child C had not previously accessed any interventions aimed at supporting the development of his social skills or social inclusion.

4.4.2 Social Inclusion Survey

The data for the whole class, CoF volunteers and Child C are presented separately below.

4.4.2.1 SIS Findings for the Whole Class

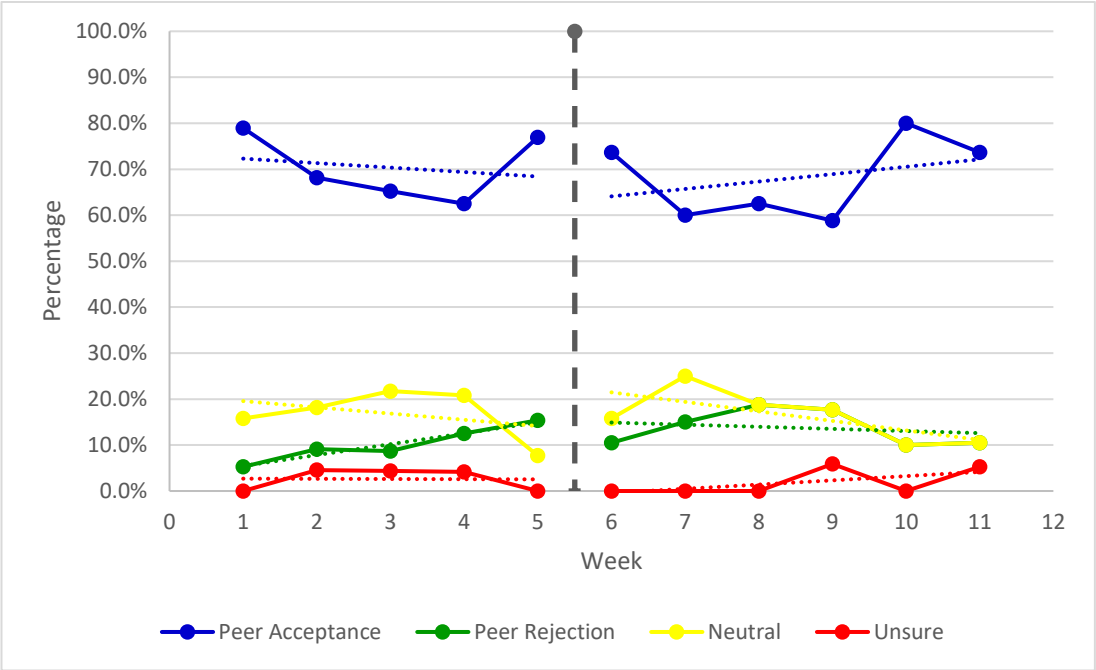

Figure 4-6 A line graph to show the percentage of Social Inclusion Survey ratings given for Child C by peers over time (by week)

The following tables visually analyse and examine each SIS rating separately.

4.4.2.1.1 Visual Analysis of Peer Acceptance ('Happy' Face)

Visual Analysis Feature	Description
Level	Baseline mean: 70.4% Intervention mean: 68.1%
Variability	Baseline range: 62.5-78.9% Baseline standard deviation: 7.2% Intervention range: 58.8-80.0% Intervention standard deviation: 8.8%
Trend	Baseline: slight negative trend Baseline gradient: -0.0097 Intervention: positive trend Intervention gradient: 0.0161
Overlap	50% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 68.2% Average first 3 intervention data points: 65.4%

Table 4-13 Summary of visual analysis of social inclusion scores for Child C: Peer acceptance ('happy' face)

The findings presented in Table 4-13 and Figure 4-6 indicate a slight decrease in level of peer acceptance in the intervention phase, which suggests a slight deterioration. There is variability in both the baseline and the intervention phases, meaning the baseline is not that stable, which limits the conclusions that can be drawn. The baseline phase has a slightly negative trend, although this is reversed to a more positive trend in the intervention phase, which shows some impact. However, half of the data points in the intervention phase overlap with the baseline phase, which is a limitation. The first three data points in the intervention phase show a small decrease in comparison to the last three data points in the baseline phase, suggesting no immediate effect on peer acceptance following the introduction of the intervention.

From the visual analysis, there is no evidence to suggest his peer acceptance increased as a result of the intervention. The inter-rater reliability data supports this conclusion. The only supporting factor is the change in trend direction in the intervention phase. However, the trend is not steep, the decrease in level, variability, unstable baseline, data overlap and lack of immediate effect limits this conclusion.

Average overall level of peer acceptance was 0.72 in the baseline phase and 0.69 in the intervention phase, which supports the conclusion from the visual analysis.

4.4.2.1.2 Visual Analysis of Peer Rejection ('Sad' Face)

Visual Analysis Feature	**Description**
Level	Baseline mean: 10.2% Intervention mean: 13.7%
Variability	Baseline range: 5.3-15.4% Baseline standard deviation: 3.9% Intervention range: 10.0-18.8% Intervention standard deviation: 3.9%
Trend	Baseline: positive trend Baseline gradient: 0.0237 Intervention: slight negative trend Intervention gradient: -0.0046
Overlap	66% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 12.2% Average first 3 intervention data points: 14.8%

Table 4-14 Summary of visual analysis of social inclusion scores for Child C: Peer rejection ('sad' face)

The level of peer rejection shows a small increase in the intervention phase, suggesting a small effect of the intervention in the wrong direction. The baseline and intervention phases both show some variability, meaning the baseline is not that stable, which limits the conclusions that can be drawn. There is a slow steady increase (i.e. positive trend) in the baseline phase, which is then reversed into a slight negative trend in the intervention phase, supporting the idea the intervention had a small effect on Child C's peer rejection level. However, most of the data points in the intervention phase overlap with the baseline phase, which doesn't support the notion of an effect. The immediacy effect shows a similar pattern to the overall level, which suggests limited impact of the intervention.

From the visual analysis, there is no evidence to suggest the intervention has a positive impact on reducing peer rejection. This conclusion is supported by the inter-rater reliability data. While the change in trend direction suggests an impact of the intervention, the trend itself is not steep and change in level suggests a small increase in peer rejection. There is some variability in both phases, unstable baseline, significant overlap between the two phases and there is no immediate positive effect of the intervention.

Average overall level of peer rejection was 0.10 in the baseline phase and 0.14 in the intervention phase, which corroborates this conclusion.

4.4.2.1.3 Visual Analysis of 'Neutral' Ratings

Visual Analysis Feature	Description
Level	Baseline mean: 16.8% Intervention mean: 16.3%
Variability	Baseline range: 7.7-21.7% Baseline standard deviation: 5.6% Intervention range: 10.0-25.0% Intervention standard deviation: 5.6%
Trend	Baseline: negative trend Baseline gradient: -0.0135 Intervention: negative trend Intervention gradient: -0.0207
Overlap	83% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 16.8% Average first 3 intervention data points: 19.8%

Table 4-15 Summary of visual analysis of social inclusion scores for Child C: 'neutral' face

There is a very slight reduction in level of 'neutral' ratings in the intervention phase, which suggests a small positive impact. There is some variability in the baseline and intervention phases, meaning the baseline is not that stable, which limits the conclusions that can be drawn. Both the baseline and intervention phases show negative trends, although the slope shows a slightly steeper reduction in the intervention phase. There is significant overlap between the baseline and intervention phases, which does not provide support for the idea that there is an effect. However, the first three data points in the intervention phase show a small increase in comparison to the last three data points from the baseline suggesting a small immediacy effect.

From the visual analysis, there is no evidence to suggest an impact of the intervention on ‘neutral’ ratings. This was the conclusion reached by the inter-rater. Whilst there is a very small change in level, including a small immediacy effect, and the trend shows increased deceleration in the intervention phase, it is not possible to say this was as a result of the intervention as a decelerating trend was observed in the baseline, meaning it was unstable. There is significant overlap between the data points.

Toleration does not change from 0.17 in the baseline phase, which matches the visual analysis.

4.4.2.1.4 Visual Analysis of ‘Unsure’ Ratings

Visual Analysis Feature	**Description**
Level	Baseline mean: 2.6% Intervention mean: 1.9%
Variability	Baseline range: 0.0-4.5% Baseline standard deviation: 2.4% Intervention range: 0.0-5.9% Intervention standard deviation: 2.9%
Trend	Baseline: neutral trend Baseline gradient: -0.0040 Intervention: slight positive trend Intervention gradient: 0.0092
Overlap	66% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 2.8% Average first 3 intervention data points: 0.0%

Table 4-16 Summary of visual analysis of social inclusion scores for Child A: 'unsure' ratings

There is a small reduction in level for 'unsure' ratings in the intervention phase. In addition, the variability is small in both the baseline and intervention phases. The baseline shows a stable and level trend and the intervention shows a slightly positive trend. There is significant overlap between the baseline and intervention phases. There is an immediate reduction in 'unsure' ratings in comparison to the last three points in the baseline phase. However, as the data is at floor levels it is difficult to draw any firm conclusions from this or any of the criteria applied to the data.

From the visual analysis, there is no evidence to suggest an impact of the intervention on the 'unsure' ratings, because floor effects make it very difficult to draw any firm conclusions from the data. This was supported by the inter-rater reliability data. However, the immediate effect and small reduction in overall level and small variability are positive. The overlap and the slight positive trend in the intervention phase limit the conclusions that can be drawn from the data.

4.4.2.2 SIS Findings for Circle Volunteers Only

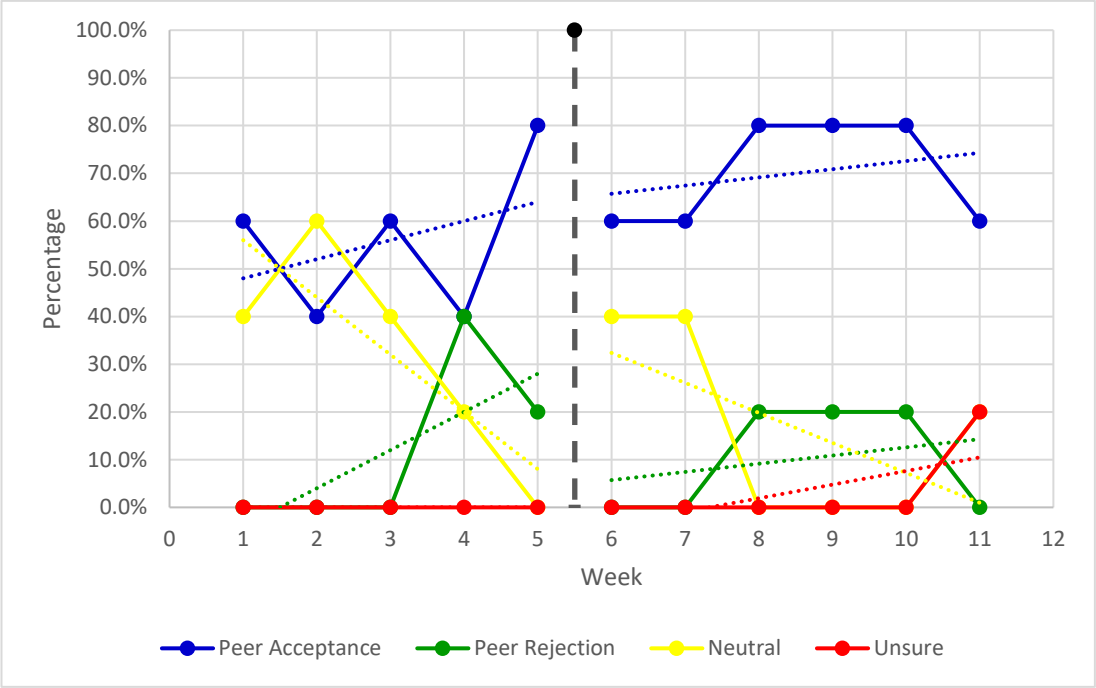

Figure 4-7 A line graph to show the percentage of Social Inclusion Survey ratings given for Child C by Circle volunteers over time (by week)

Figure 4-7 shows peer acceptance shown by Circle volunteers shows large variability and a positive trend, meaning the baseline is not stable. The amount of variability is reduced in the baseline phase. The baseline phase show an accelerating trend, which makes it difficult to conclude the continued positive trend shown in the intervention phase was due to the intervention. Therefore, there is no evidence of a clear impact of the intervention.

For peer rejection, the level is initially 0% in the baseline phase, but then it increases in Week 4. It shows an immediate reduction in Week 6, but then increases in Week 8, although it returns to 0% in Week 11. There is variability in the baseline phase, meaning the baseline is not stable, and less in the intervention phase and all the data points overlap. Therefore, there is no evidence of a clear impact of the intervention.

Both the baseline and intervention phases show a similar pattern for 'neutral' ratings, with initially high ratings that reduce to 0%, although this reduction is

quicker in the intervention phase and both phases show variability, so the baseline is not stable. All the data points overlap and both phases show a negative trend. Therefore, there is no evidence of a clear impact of the intervention.

For the 'unsure' rating, this remains unchanged at 0% until Week 11, where it increases to 20% (i.e. one child). This floor effect limits the conclusions that can be drawn from the data.

4.4.2.2.1 Summary of Child C's Circle Findings

In comparison with the whole class data, peer acceptance appears to show more of an increase in the Circle volunteers in comparison to the whole class, meaning some of the small changes in the whole class data can be attributed to the Circle volunteers. The pattern for peer rejection seems similar to the whole class. For 'neutral' ratings, the pattern is similar to that shown by the whole class, but it shows a steeper reduction in both phases for the Circle volunteers, meaning some of the changes in the whole class data can be attributed to the Circle volunteers. 'Unsure' ratings are low for both the Circle volunteers and the whole class. However, the variability and overlap with all ratings mean there are limitations to the conclusions that can be drawn from the data.

4.4.2.3 SIS Findings for the Focus Child

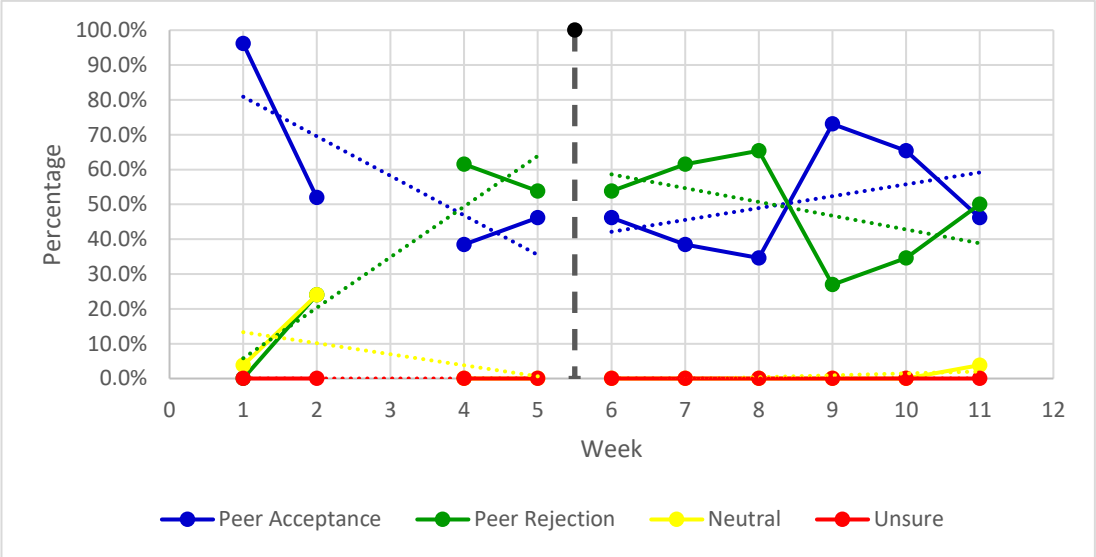

Figure 4-8 A line graph to show the percentage of Social Inclusion Survey ratings of Child C towards class peers over time (by week)

The number of children Child C liked to play with was initially high, although this reduces significantly by the end of the baseline phase. It starts at the same level in the intervention phase, then decreases slightly. In the middle of the intervention phase, there is a steep increase and then it reduces again. Therefore, the variability is high in both phases, so the baseline is not stable, and there is a lot of overlap between the two phases. The trend lines reverse from a negative trend to a positive trend, which is promising. However, there is no evidence to suggest an impact of the intervention, due to the variability, overlap and lack of immediacy effect.

The number of children he does not like to play with shows the opposite profile to the number of children that he likes to play with. The baseline is not stable. The trend lines reverse from a positive trend to a negative trend, which is promising. However, there is no evidence to suggest an impact of the intervention, due to the variability, overlap and lack of immediacy effect.

His ‘neutral’ ratings are at 0% except for Weeks 2 and 11, so stay low throughout. The 'unsure' ratings stay at 0% throughout. It is therefore not

possible to draw any conclusions about changes in ‘neutral’ and ‘unsure’ ratings as a result of the intervention.

Overall, there is no evidence to show changes in the number of children who Child C does and does not like to play with, or in the ‘neutral’ or ‘unsure’ ratings.

4.4.3 School Children’s Happiness Inventory

The pre-intervention score was 107 (‘high average’) and the post-intervention score was 103 (‘average’). This shows a small decrease post-intervention, although both scores indicate he is happy at school.

4.4.4 Strengths and Difficulties Questionnaire

Child C's parents and class teacher completed an SDQ pre- and post- the CoF intervention. Results are given below.

4.4.4.1 Parent SDQ

	Pre-Intervention		Intervention		Difference
	Score	**Description**	**Score**	**Description**	
Overall stress	8	Average	16	Slightly Raised	+8
Emotional distress	0	Average	3	Average	+3
Behavioural difficulties	2	Average	3	Slightly Raised	+1
Hyperactivity/ concentration	4	Average	7	Slightly Raised	+3
Difficulties getting on	2	Average	3	Slightly Raised	+1
Kind and helpful	6	Low	5	Very Low	-1
Impact of difficulties	0	Average	0	Average	0

Table 4-17 Table to show the scores for Child C on the Parent SDQ before and after the intervention

The pre-intervention data for the parent SDQ shows very few difficulties, as most scales are in the 'average' range. Only 'kind and helpful' is outside of the 'average' range, scoring in the 'low' range. This suggests there are no concerns regarding Child C's emotional and behavioural difficulties, but some concerns regarding social difficulties.

Post-intervention, the parent SDQ indicates some more difficulties, although the 'impact of difficulties' score remains unchanged in the 'average' range. 'Overall stress' increases by 8, into the 'slightly raised' range. 'Emotional distress' increases, but remains within the 'average' range. 'Behavioural difficulties' and 'difficulties getting on' both increase by 1 into the 'slightly

raised' range. 'Hyperactivity/concentration' increases by 3, and changes to 'slightly raised', and 'kind and helpful' decreases by 1, into the 'very low' range. This suggests there are some concerns regarding Child C's social, emotional and behavioural adjustment.

4.4.4.2 Teacher SDQ

	Pre-Intervention		Intervention		Difference
	Score	**Description**	**Score**	**Description**	
Overall stress	3	Average	2	Average	-1
Emotional distress	1	Average	0	Average	-1
Behavioural difficulties	0	Average	0	Average	0
Hyperactivity/ concentration	0	Average	2	Average	+2
Difficulties getting on	2	Average	0	Average	-2
Kind and helpful	7	Average	8	Average	+1
Impact of difficulties	0	Average	0	Average	0

Table 4-18 Table to show the scores for Child C on the Teacher SDQ before and after the intervention

All of the scales in the teacher SDQ are in the 'average' range, which suggest there are no significant social, emotional or behavioural difficulties identified at school. There are some changes post-intervention, although all scores are still within the 'average' range; all but one of these is in the positive direction. 'Overall stress' and 'emotional distress' both decrease by 1, 'difficulties getting on' decreased by 2 and 'kind and helpful' increased by 1. 'Hyperactivity/ concentration' increased by 2, which was in the negative direction. This suggests there was little effect on the teacher's perception of Child C's strengths and difficulties as a result of the intervention.

4.4.4.3 Summary of Parent and Teacher SDQs

For the pre-intervention data, the data for both the parent and the teacher SDQ scores are very similar, and indicate no significant difficulties with Child C, as all but one of the areas fall within the 'average' range. The parent SDQ suggests that 'kind and helpful' is 'low', whereas the teacher SDQ identifies this as 'average'.

Post-intervention, the teacher SDQ indicates limited change. In contrast, the parent SDQ indicates changes in most scales, in a negative direction. However, the 'impact of difficulties' scale remains unchanged.

4.5 Child D

4.5.1 Participant Information

Child D is a boy in Year 6. He was diagnosed with a hearing impairment at 2 years old and had cleft palate when he was born. Child D has severe-profound (80dB) sensorineural hearing loss in his right ear and a fluctuating but likely permanent mild-moderate (45-50dB) conductive loss in his left ear, as well as sensory processing difficulties. He uses a CI in his right ear, which was fitted in 2014. At 6 months old he had grommets that fell out and in 2008 he was fitted with a bone conduction aid and used a sound field system at school. Child D is of white British origin and does not qualify for free school meals. Academically he is working below age-related expectations.

Staff described him as being withdraw and with difficulties making friends, with limited facial expressions and eye contact. They said he could dominate conversations. A diagnosis of autistic spectrum disorder was considered but not found. During the whole class meeting, pupils said he can be forgetful and has difficulties with hearing. They also described him as shy, anxious

and sad, saying that he steps back, spends time alone and is afraid to ask for help (Appendix 8.26).

School previously implemented a 'buddy' system for Child D, but there are no other interventions being implemented aimed at developing his social skills or social inclusion.

4.5.2 Social Inclusion Survey

The data for the whole class, CoF volunteers and Child D are presented separately below.

4.5.2.1 SIS Findings for the Whole Class

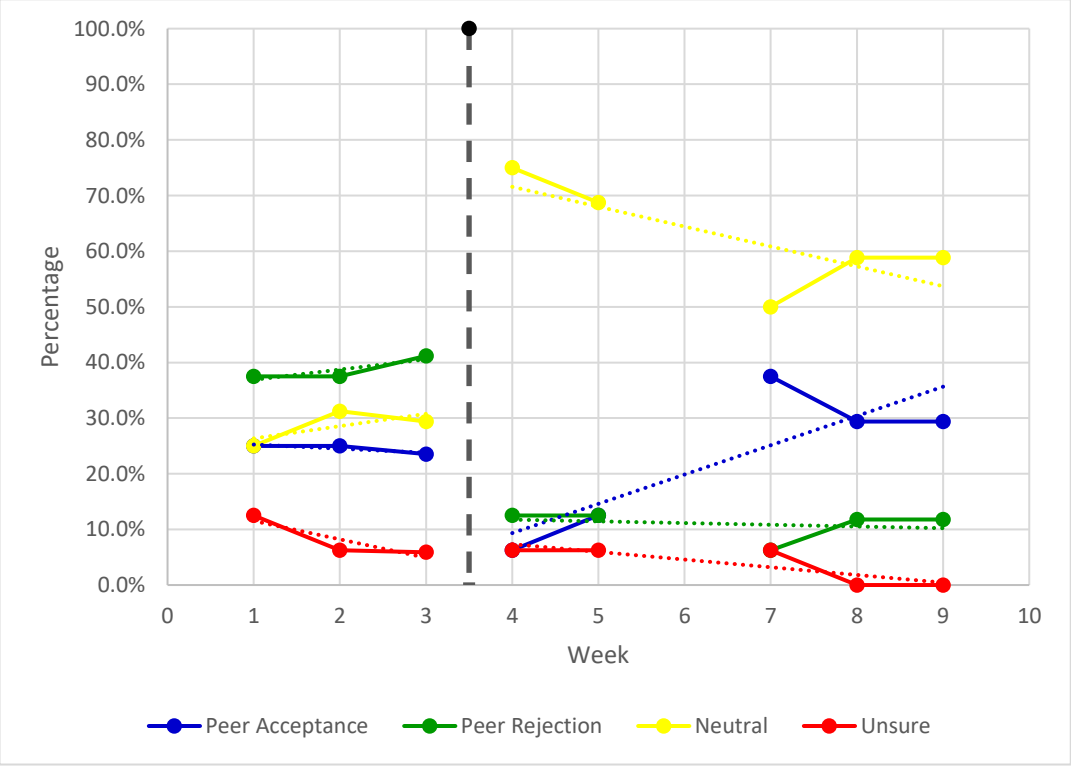

Figure 4-9 A line graph to show the percentage of Social Inclusion Survey ratings given for Child D by peers over time (by week)

The following tables visually analyse and examine each SIS rating separately.

4.5.2.1.1 Visual Analysis of Peer Acceptance ('happy' face)

Visual Analysis Feature	Description
Level	Baseline mean: 25.5% Intervention mean: 21.4%
Variability	Baseline range: 23.5-25.0% Baseline standard deviation: 0.85% Intervention range: 6.3-37.5% Intervention standard deviation: 14.52%
Trend	Baseline: slight negative trend Baseline gradient: -0.0074 Intervention: positive Intervention gradient: 0.0526
Overlap	40% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 24.5% Average first 3 intervention data points: 9.4%

Table 4-19 Summary of visual analysis of social inclusion scores for Child D: Peer acceptance ('happy' face)

The findings presented in Figure 4-9 and Table 4-19 indicate the level of peer acceptance reduced overall in the intervention period, although this is due to the immediate reduction. The final three data points indicate an improvement in peer acceptance at the end of the intervention period. There is little variability and only a slight negative trend in the baseline phase, meaning it is stable. The trend in the intervention phase is positive, but there is more variability and some overlap.

From the visual analysis, there is no evidence to show his peer acceptance increased as a result of the intervention. Inter-rater reliability data indicated moderate evidence of an impact. This is due to reduced level, lack of immediacy effect and overlap in data points. However, the baseline is stable and there is a positive trend in the intervention, with a higher level of peer acceptance in the final three data points.

Average overall composite peer acceptance score was 0.27 in the baseline phase and 0.29 in the intervention phase, which shows only a small increase and therefore corroborates the visual analysis findings.

4.5.2.1.2 Visual Analysis of Peer Rejection ('sad' face)

Visual Analysis Feature	**Description**
Level	Baseline mean: 38.7% Intervention mean: 10.8%
Variability	Baseline range: 37.5-41.2% Baseline standard deviation: 2.12% Intervention range: 6.3-12.5% Intervention standard deviation: 3.02%
Trend	Baseline: slight positive trend Baseline gradient: 0.0184 Intervention: slight negative trend Intervention gradient: -0.0031
Overlap	0 of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 24.5% Average first 3 intervention data points: 9.4%

Table 4-20 Summary of visual analysis of social inclusion scores for Child D: Peer rejection ('sad' face)

The level of peer rejection shows a significant reduction in the intervention phase, with an immediate reduction. There is little variability in the baseline and a slight positive trend, meaning it is stable. There is slightly more variability in the intervention phase and a negative trend. None of the data points overlap.

From the visual analysis, there is strong evidence to show his peer rejection reduced as a result of the intervention. This was corroborated by inter-rater data. This is because of the stable baseline, the reduction in level and immediate effect, the negative trend in the baseline and the lack of overlapping data points.

Average overall composite peer rejection score reduces from 0.42 in the baseline phase to 0.12 in the intervention phase, which corroborates the visual analysis findings.

4.5.2.1.3 Visual Analysis of 'Neutral' Ratings

Visual Analysis Feature	Description
Level	Baseline mean: 28.6% Intervention mean: 63.1%
Variability	Baseline range: 25.0-31.3% Baseline standard deviation: 3.21% Intervention range: 50.0-75.0% Intervention standard deviation: 11.01%
Trend	Baseline: positive Baseline gradient: 0.0221 Intervention: negative Intervention gradient: -0.0357
Overlap	0 of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 28.6% Average first 3 intervention data points: 71.9%

Table 4-21 Summary of visual analysis of social inclusion scores for Child D: 'Neutral' ratings

The level of 'neutral' ratings increased as a result of the intervention, with an immediate increase as well. The baseline phase is relatively stable, with some variability and a slight positive trend. The intervention phase shows some more variability, with a negative trend. There is no overlap between data points.

From the visual analysis, there is moderate evidence to show there was an increase in 'neutral' ratings for Child D as a result of the intervention, which was agreed by the inter-rater. This is due to the increase in level, immediate effect, relatively stable baseline and lack of overlapping data points. However, the intervention phase shows more variability and a negative trend.

The average toleration composite score shows an increase as well, with an average score of 0.31 in the baseline and 0.59 in the intervention, which corroborates the conclusion from the visual analysis.

4.5.2.1.4 Visual Analysis of 'Unsure' Ratings

Visual Analysis Feature	**Description**
Level	Baseline mean: 8.2% Intervention mean: 4.7%
Variability	Baseline range: 5.9-12.5% Baseline standard deviation: 3.72% Intervention range: 0.0-6.3% Intervention standard deviation: 3.13%
Trend	Baseline: slight negative trend Baseline gradient: -0.0331 Intervention: slight negative trend Intervention gradient: -0.0138
Overlap	60% of the data points in the intervention phase overlap with data points in the baseline phase.
Immediacy of effect	Average last 3 baseline data points: 8.2% Average first 3 intervention data points: 6.3%

Table 4-22 Summary of visual analysis of social inclusion scores for Child D: 'Unsure' ratings

The level shows a small reduction in 'unsure' ratings as a result of the intervention, along with a small immediate reduction. There is some variability and negative trend in the baseline phase, which indicates the baseline is not that stable. There is a negative trend in the intervention phase as well, although the baseline trend shows more deceleration. There is significant overlap in the data points.

From the visual analysis, there is no evidence to suggest a change in 'unsure' ratings as a result of the intervention. The inter-rater reliability data agreed. This is because there is a negative trend in both the baseline and intervention phases, there is significant overlap between the data points and the baseline is not that stable. However, there is a reduction in level and an immediacy effect.

4.5.2.2 SIS Findings for the Circle Volunteers Only

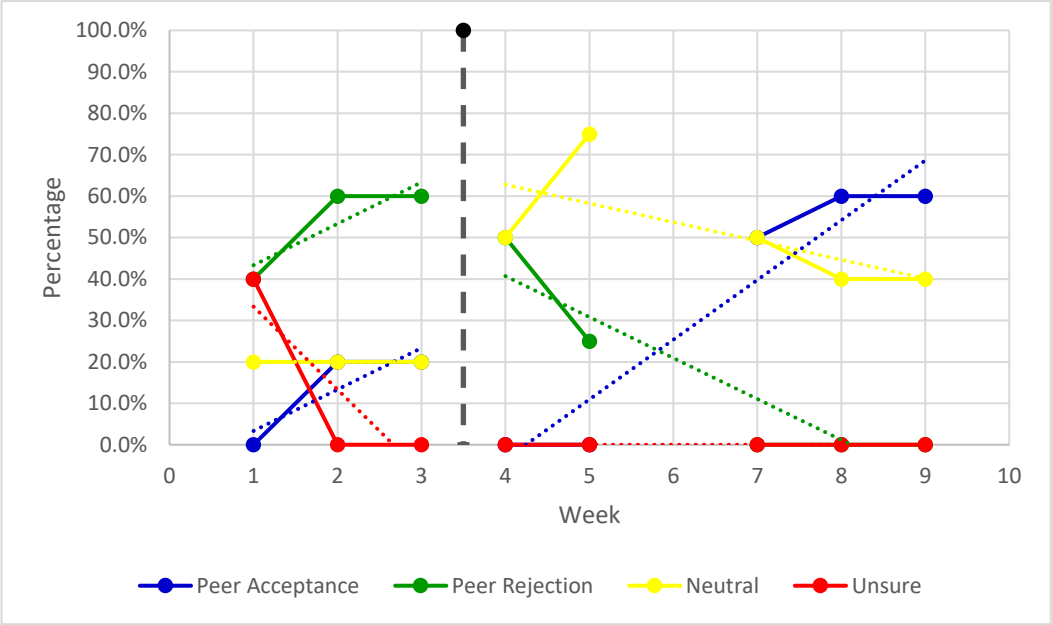

Figure 4-10 A line graph to show the percentage of Social Inclusion Survey ratings given for Child D by Circle volunteers over time (by week)

There is a change in level of peer acceptance towards the end of the intervention phase, although the first two data points show a reduction, down to 0 (from 1 Circle volunteer). The baseline is not stable, and has a positive trend line similar to the intervention phase. There is some overlap between the data points. Overall, this suggests moderate evidence of an increase in peer acceptance in the intervention phase.

Peer rejection shows a change in level, down to 0% at the end of the intervention. There is a small immediate reduction, with only the first intervention data point overlapping with the baseline phase. The trend changes from a positive to a negative trend. The baseline phase is not stable. Overall, this suggests moderate evidence of a decrease in peer rejection in the intervention phase.

'Neutral' ratings remain stable throughout the baseline phase (i.e. neutral trend) and show an increase during the intervention phase, with an immediate increase after the intervention phase is introduced. The intervention phase shows a negative trend, and no data points overlap between the phases. Overall, this suggests moderate evidence of an increase in 'neutral' ratings in the intervention phase.

There is no change in the 'unsure' ratings, as only Week 1 of the baseline phase is above 0.

4.5.2.2.1 Summary of Child D's Circle Findings

The pattern of peer acceptance in the Circle seems to follow a similar pattern to the whole class data, with the exception of a slight increase towards the end of the baseline phase. The pattern of peer rejection in the Circle follows a similar pattern to the whole class data. The pattern of Circle volunteers' 'neutral' ratings of Child D is similar to the whole class data in the baseline phase, and shows an increase in level in the intervention phase like the whole class data. However, when there are small changes in the whole class data, the data for the Circle volunteers shows the opposite effect (i.e. increasing when the whole class data shows a decrease). It is not possible to compare the data for 'unsure' ratings, due to the floor effects.

Overall, this suggests the changes in the whole class data can be attributed to both the Circle volunteers and the other peers.

4.5.2.3 SIS Findings for the Focus Child

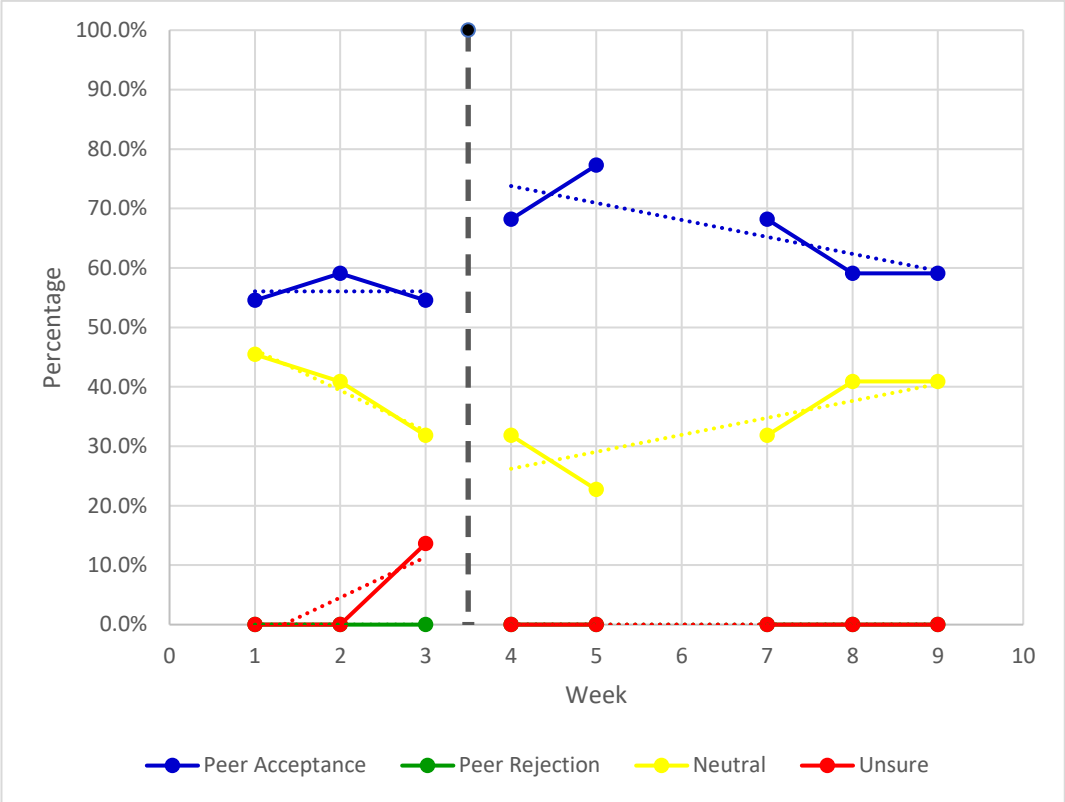

Figure 4-11 A line graph to show the percentage of Social Inclusion Survey ratings of Child D towards class peers over time (by week)

The number of children Child D liked to play with was initially high, and shows a very small increase in the intervention, with an immediate increase. The baseline is stable, with a neutral trend, although the intervention phase has a negative trend and shows some more variability. There is some overlap between the data points.

The number of children he does not like to play with remains at floor level throughout the baseline and intervention phases.

His 'neutral' ratings show no clear change in level, due to the significant overlap between data points. However, there is a small immediate reduction that is not sustained. The baseline is not stable and there is variability in the intervention phase, and the trend changes from negative to positive.

His ‘unsure’ ratings remain close to floor levels, so it is not possible to compare the baseline and intervention phases.

Overall, there is no evidence to show changes in the number of children who Child D does and does not like to play with, or in the ‘neutral’ or ‘unsure’ ratings.

4.5.3 School Children’s Happiness Inventory

Pre-intervention, Child D’s score is 116, which is in the ‘high’ range and indicates he is happy at school. Post-intervention, his score was 111, which is slightly below his pre-intervention score, but still in the ‘high average’ range. This indicates he was still happy at school.

4.5.4 Strengths and Difficulties Questionnaire

Child D's parents and class teacher completed an SDQ pre- and post- the CoF intervention. Results are given below.

4.5.4.1 Parent SDQ

	Pre-Intervention		Intervention		Difference
	Score	**Description**	**Score**	**Description**	
Overall stress	25	Very High	14	Slightly Raised	-11
Emotional distress	9	Very High	4	Slightly Raised	-5
Behavioural difficulties	0	Average	0	Average	0
Hyperactivity/ concentration	9	Very High	6	Slightly Raised	-3
Difficulties getting on	7	Very High	4	High	-3
Kind and helpful	4	Very Low	8	Average	+4
Impact of difficulties	9	Very High	1	Slightly Raised	-8

Table 4-23 Table to show the scores for Child D on the Parent SDQ before and after the intervention

The parent SDQ suggests significant difficulties in all areas except 'behavioural difficulties' pre-intervention. The 'overall stress' and 'impact of difficulties' are both 'very high', as are the scales concerning 'emotional distress', 'hyperactivity/concentration' and 'difficulties getting on'. 'Kind and helpful' is 'very low'. Overall, this suggests there appears to be significant concerns about Child D's social and emotional adjustment, and some concerns regarding behavioural adjustment.

Post-intervention, there are significant changes. Both the 'overall stress' and 'impact of difficulties' have reduced from 'very high' into the 'slightly raised' range. This pattern is also found for 'emotional distress' and

'hyperactivity/concentration'. 'Difficulties getting on' reduced by 3 to be in the 'high range'. There was an increase of 4 in the 'kind and helpful', which was in the 'average' range post-intervention. The only scale that remained unchanged was 'behavioural difficulties', which was in the 'average' range pre-intervention.

4.5.4.2 Teacher SDQ

	Pre-Intervention		Intervention		Difference
	Score	**Description**	**Score**	**Description**	
Overall stress	18	High	16	High	-2
Emotional distress	4	Slightly Raised	3	Average	-1
Behavioural difficulties	0	Average	0	Average	0
Hyperactivity/ concentration	8	High	7	Slightly Raised	-1
Difficulties getting on	6	Very High	6	Very High	0
Kind and helpful	8	Average	7	Average	-1
Impact of difficulties	2	High	1	Slightly Raised	-1

Table 4-24 Table to show the scores for Child D on the Teacher SDQ before and after the intervention

The teacher SDQ suggests difficulties pre-intervention. Both the 'overall stress' and 'impact of difficulties' are 'high'. 'Difficulties getting on' is 'very high', and 'hyperactivity/concentration' is 'high'. 'Emotional distress' is 'slightly raised', while 'behavioural difficulties' and 'kind and helpful' are both within the 'average' range. Overall, this suggests there some concerns regarding Child D's social, emotional and behavioural adjustment.

Post-intervention there are some small, positive changes. 'Overall stress' reduces by 2, although is still in the 'high' range. 'Emotional distress' reduces by 1 into the 'average' range. 'Hyperactivity/concentration' and 'impact of

difficulties' both reduce by 1 into the 'slightly raised' range. There are no changes to 'behavioural difficulties' or 'difficulties getting on'. The only negative change is 'kind and helpful' reduces by 1, although is still in the 'average' range post-intervention. This suggests there was some change in the teacher's perception of his strengths and difficulties as a result of the intervention.

4.5.4.3 Summary of Parent and Teacher SDQs

Pre-intervention, both the parent and teacher SDQs suggest difficulties in the same areas, with the exception of 'kind and helpful', although the magnitude of difficulties is reported differently. For most scales, the parent SDQ indicates more significant difficulties, with the exception of 'difficulties getting on', which are both in the 'very high' range. Neither SDQ indicates he has behavioural difficulties.

Post-intervention, there are more significant changes in the parent SDQ. Both SDQs show a decrease in 'overall stress' and 'impact of difficulties', although the level of change is more significant for the parent SDQ. Post-intervention, 'overall stress' is lower in the parent SDQ and the 'impact of difficulties' is at the same level for both SDQs. 'Emotional distress' shows more of a decrease in the parent SDQ, but is higher than the teacher SDQ post-intervention. 'Hyperactivity/concentration' reduce in both, but with more of a drop in the parent SDQ, which both SDQs in the 'slightly raised' range post-intervention. 'Difficulties getting on' remains unchanged in the teacher SDQ, in the 'very high' range, but reduces to the 'high' range in the parent SDQ. In the teacher SDQ, 'kind and helpful' reduces, whereas in the parent SDQ it increases, with both SDQs showing scores in the 'average' range post-intervention. Neither SDQ shows a change in 'behavioural difficulties' post-intervention, although both are in the 'average' range pre-intervention.

5 Discussion

5.1 Introduction

This chapter considers the results of the present study in relation to previous research outlined in the Literature Review (Chapter 2), as well as in relation to the design, procedure, measures and data analysis outlined in the Methodology (Chapter 3). It will start by summarising the findings for each participant, before presenting the overall findings in relation to the research questions. Strengths and limitations of the study will then be described, as well as implications for future research and professional EP practice.

This study aimed to evaluate the effectiveness of CoF on the social inclusion of children with a HI and to answer the following research questions:

1) Does the CoF intervention have a positive impact on social inclusion of primary-age children with a hearing impairment?
    a) Does CoF improve peer acceptance of primary-aged children with a hearing impairment?
    b) Does CoF reduce peer rejection of primary-aged children with a hearing impairment?
    c) Does CoF improve the happiness of children with a hearing impairment?

5.2 Summary of Child A

5.2.1 Social Inclusion Survey

5.2.1.1 Whole Class SIS

Whole class data indicates moderate evidence for a slight improvement in peer acceptance of Child A, including an immediate increase after the intervention begins, although there are limitations for drawing this conclusion. The composite score suggests a very small reduction in peer acceptance, which does not match the visual analysis. However, this is due to this score not including ‘unsure’ ratings, which were higher in the baseline phase.

There is no evidence of an impact of CoF on the level of her peer rejection, with a small increase in level and composite score in the intervention phase. However, there is a small immediacy effect (reduction).

There is no evidence of an impact on the ‘neutral’ ratings from the visual analysis, the composite score shows a small reduction in toleration related to the small increase in peer rejection.

It is not possible to analyse the impact of the intervention on ‘unsure’ ratings, due to the floor effect, although there were some promising changes in level and trend.

5.2.1.2 Circle Volunteers’ SIS

The data for the Circle volunteers shows a similar pattern for Child A’s peer acceptance to the whole class data. The percentage of 'neutral' ratings for Circle volunteers is lower in the intervention phase, which suggest the change observed in ‘neutral’ rating in whole class data could be linked to reductions in the Circle volunteers choosing the 'neutral' rating following the

introduction of the intervention. The rejection and the 'unsure' rating data for the Circle volunteers were close to at 0% level.

5.2.1.3 Child A's SIS

There was limited data for Child A's ratings for the whole class, which cannot be compared to the baseline.

5.2.2 School Children's Happiness Inventory

The happiness score reduced from 'low average' to 'very low' post-intervention, although feedback from the CoF facilitator indicated Child A had experienced a family bereavement during the intervention, which is likely to have impacted on this score.

5.2.3 Strengths and Difficulties Questionnaire

The pre-intervention parent and teacher SDQs show similar levels of difficulty. There were no concerns about Child A's behaviour, but there are some concerns regarding her social skills and significant concerns regarding her emotional adjustment.

Both SDQs show some change post-intervention, although the change is more pronounced in the teacher SDQ. There was an increase in 'emotional distress' on both SDQs, which remained 'very high'. The teacher SDQ shows an increase in 'overall stress' and 'hyperactivity/concentration', although the changes are not clinically significant, whereas the parent SDQ shows a reduction in 'hyperactivity/concentration'. The teacher SDQ shows a decrease in the 'difficulties getting on' scale, reducing it to the 'average' range, although the score in the parent SDQ does not change.

5.3 Summary of Child B

5.3.1 Social Inclusion Survey

5.3.1.1 Whole Class SIS

The visual analysis of sociometric data gathered via the SIS provides no evidence for an increase in peer acceptance of Child B by the whole class. There was a small reduction in the peer acceptance, although there was variability in the middle of the intervention phase, which may have had a significant impact on the level and trend. However, the composite scores show an increase in peer acceptance, partially due to initial low scores in the baseline phase and higher acceptance levels in weeks with fewer responses.

There was moderate evidence of a slight reduction in the level of rejection, which was corroborated by a reduction in the composite score.

In addition, the intervention had a small impact on ‘neutral’ ratings, which is shown in a small immediacy effect and the reduced toleration composite score, linked to the increased peer acceptance score.

There is no evidence for an impact on ‘unsure’ ratings.

5.3.1.2 Circle Volunteers’ SIS

For the Circle volunteers, the patterns of acceptance, rejection, 'neutral' and 'unsure' ratings appear similar to the data for the whole class in the baseline phase. Peer acceptance in the intervention phase shows a higher percentage increase in comparison to the whole class data. The other ratings show similar patterns in the intervention phase to the whole class data, although peer rejection decreases more at the end of the intervention. Therefore, some of the changes in whole class peer acceptance and rejection may be attributed to changes in the Circle volunteers’ ratings.

5.3.1.3 Child B's SIS

There is no evidence of an effect of the intervention for Child B's views of her peers. There is an increasing the number of children she likes to play with on the introduction of the intervention, although it is unclear why there is a steep decrease in the baseline phase. The other data is inconclusive.

5.3.2 School Children's Happiness Inventory

Child B's happiness decreases slightly post-intervention, although both scores are in the 'average' range, suggesting she is generally happy at school.

5.3.3 Strengths and Difficulties Questionnaire

The parent SDQ suggests significant difficulties with social, emotional and behavioural adjustment both at pre-test and post-test, as all scores are either 'very low', 'high' or 'very high'. In contrast, the teacher SDQ indicates all scales are in the 'average' range pre- and post-test, indicating no significant difficulties in these areas.

There are minimal changes at post-test for both the parent and teacher SDQs. Both the parent and teacher SDQs indicate a small decrease in 'overall stress', the parent SDQ shows a small decrease in 'emotional distress', the teacher SDQ shows a decrease in 'hyperactivity/concentration', and the parent SDQ shows an increase in 'kind and helpful', whereas the teacher SDQ shows a decrease in this scale. All changes are only plus or minus one and do not change the qualitative score.

5.4 Summary of Child C

5.4.1 Social Inclusion Survey

5.4.1.1 Whole Class SIS

Visual analysis of whole class ratings indicates a slight improvement in peer acceptance, as the trend line switches from a negative to a positive trend following the introduction of the CoF intervention. However, all other indicators: level, variability, overlap and immediacy indicate no effect. Therefore it is not possible to conclusively say peer acceptance levels have changed as a result of intervention, although the changes are promising. The composite score shows a small reduction in peer acceptance.

Overall, the visual analysis indicates no evidence for a reduction in peer rejection, because the changes observed suggest a small increase in peer rejection, and there is some variability in both phases. The composite scores confirm a small increase in the peer rejection. However, the trend line changes from a positive to a negative trend on the introduction of the intervention, which is positive.

There does not appear to be a clear impact on the ‘neutral’ ratings, and this is supported by the fact there is no change in the toleration composite score.

There is no evidence to suggest a positive impact of the CoF intervention on ‘unsure’ ratings, as all scores are close to or at floor level.

5.4.1.2 Circle Volunteers’ SIS

The peer acceptance appears to show more of an increase in the Circle volunteers in comparison to the whole class, meaning some of the small changes in the whole class data can be attributed to the Circle volunteers. However, the pattern of peer rejection seems similar to the whole class.

'Neutral' ratings show a similar pattern but steeper reduction in the Circle volunteers in comparison to the whole class, meaning that some of the changes in the whole class data can be attributed to the Circle volunteers.

5.4.1.3 Child C's SIS

The children whom Child C likes to play with and does not like to play with show some promising improvements as a result of the intervention, although there is high acceptance and low rejection in Week 1, which then changes during the baseline phase. There is no clear change in either 'neutral' or 'unsure' ratings, as these stay low throughout.

5.4.2 School Children's Happiness Inventory

The pre-intervention SCHI data is in the 'high average' range. At post-intervention there is a small decrease, with Child C's happiness in the 'average' range. Both scores indicate he is happy at school.

5.4.3 Strengths and Difficulties Questionnaire

The pre-intervention SDQ data is very similar for the parent and teacher SDQs and indicate no significant social, emotional or behavioural difficulties with Child C, as all but one of the areas fall within the 'average' range.

Post-intervention, the teacher SDQ scores are all still within the 'average' range. However, there were some positive changes for 'overall stress', 'emotional distress', 'difficulties getting on' and 'kind and helpful'. 'Hyperactivity/concentration' showed a slight change in the opposite direction. In contrast, the parent SDQ indicates more concerns regarding Child C's social, emotional and behavioural adjustment post-intervention,

with all but one scale changing in the negative direction. The ‘impact’ score remains unchanged, however.

5.5 Summary of Child D

5.5.1 Social Inclusion Survey

5.5.1.1 Whole Class SIS

There was no evidence Child D’s peer acceptance increased as a result of the intervention from the visual analysis. This was due to a reduced total level, no immediacy effect and overlap of data points. However, the intervention had a positive trend and the final data points showed an increase. The composite score showed only a small increase in peer acceptance.

There was strong evidence to suggest his peer rejection reduced as a result of the intervention. The baseline was stable, there was a reduction in level, an immediate effect, no overlapping data points and a negative trend in the intervention. The composite score corroborated this conclusion.

There was moderate evidence to show whole-class ‘neutral’ ratings increased as a result of the intervention, due to the reduction in peer rejection. There was a reduction towards the end of the intervention, linked with the increase in peer acceptance scores, meaning the trend was negative. The baseline was stable, and there was an increase in level, an immediacy effect, and no overlapping data points. The composite score corroborated this conclusion.

The ‘unsure’ ratings for Child D showed no evidence of change, as both phases had a negative trend, there was significant overlap and the baseline was not stable. However, there was a reduction in level and an immediacy effect.

5.5.1.2 Circle Volunteers' SIS

The pattern of ratings for the Circle volunteers showed a similar pattern to the whole class data, suggesting changes in the whole class data can be attributed to both the Circle volunteers and the other peers.

5.5.1.3 Child D's SIS

There was no clear change in the number of children whom Child D did and did not like to play with. The number of children he liked to play with showed a small increase, but there was significant overlap and a negative trend. The opposite effect was found for his 'neutral' ratings. The number of children who he did not like to play with remained at 0 throughout both phases, and his 'unsure' ratings remained close to floor throughout too.

5.5.2 School Children's Happiness Inventory

The pre-intervention SCHI data is in the 'high' range. At post-intervention there is a small decrease, with Child D's happiness in the 'high average' range. Both scores indicate he is happy at school.

5.5.3 Strengths and Difficulties Questionnaire

The parent SDQ suggests significant difficulties with social, emotional and behavioural adjustment at pre-test, with all scores being 'very high' or 'very low' ('kind and helpful' only), except 'behavioural difficulties'. No post-test data is currently available. The pre-intervention teacher SDQ indicates difficulties in the same areas, except 'kind and helpful', which is in the

‘average’ range. There is one ‘slightly raised’ score, three ‘high’ scores and one ‘very high’ score.

There are some changes at post-test in the teacher SDQ. ‘Emotional distress’ reduces to the ‘average’ range, ‘impact of difficulties’ reduces to the ‘slightly raised’ range, and ‘hyperactivity/concentration’ reduces to the ‘slightly raised’ range. ‘Overall stress’ reduces but stays within the ‘high’ range. ‘Behavioural difficulties’ and ‘difficulties getting on’ remain unchanged. ‘Kind and helpful’ reduces slightly, but stays in the ‘average’ range. This suggests some ongoing social and behavioural difficulties, but no emotional difficulties. The parent SDQ shows more significant changes, with some scales showing greater changes in parent perceptions than the teacher SDQ (‘overall stress’ and ‘difficulties getting on’ at post-test), although both indicate remaining difficulties. ‘Hyperactivity/concentration’ and ‘impact of difficulties’ reduce to the same level as the teacher SDQ post-intervention, with ‘kind and helpful’ increasing to the same level as the teacher SDQ. ‘Emotional distress’ is still higher in the parent SDQ post-intervention, although it decreased. ‘Behavioural difficulties’ remained unchanged in both SDQs, still within the ‘average’ range.

5.6 Research Question 1(a): Does CoF improve peer acceptance of primary-aged children with a hearing impairment?

5.6.1 Peer Perspective

For Child A, visual analysis shows moderate evidence of a slight increase in peer acceptance, including an immediacy effect, although the data has limitations. However, the composite score shows a slight decrease in peer acceptance. There was no evidence of changes in ‘neutral’ or ‘unsure’ ratings, although the intervention trend switched to a slight negative trend for ‘neutral’ ratings.

Visual analysis indicates no overall evidence for an increase in peer acceptance for Child B, while the composite score shows an increase in peer acceptance. There was moderate evidence of a small reduction in ‘neutral’ ratings, in both the visual analysis and toleration score, related to the increased composite acceptance score. There was no evidence of an effect on ‘unsure’ ratings.

For Child C, there was no overall evidence of an increase in peer acceptance, although it began to move in the right direction in the intervention phase. The composite score corroborated this. The impact is greater within the Circle than the whole class. The whole class data and toleration scores show no evidence of an impact on ‘neutral’ ratings, although the reduction is more steep in the data for the Circle volunteers. There was no change in ‘unsure’ ratings.

The visual analysis of Child D’s peer acceptance shows no evidence of change, although it began to increase at the end of the intervention phase. The composite score corroborated this. The whole class data and toleration scores show an increase in ‘neutral’ ratings, linked to the decrease in rejection scores. There was no change in ‘unsure’ ratings.

5.6.2 Self Perspective

Limited data was collected for Child A’s views of her peers, so it is not possible to draw a conclusion from this.

The data for the different ratings for how well Child B likes to play with peers was inconclusive, meaning there was no evidence of change for children she liked to play with, did not mind whether she played with them or not, or did not know them.

The data for Child C’s ratings was inconclusive, due to the variability in the number of children he liked to play with and the low frequency of ‘neutral’ and ‘unsure’ ratings.

Child D's self-report data was inconclusive, although it indicates a possible increase in the number of children he liked to play with. The number of 'neutral' and 'unsure' ratings remained close to floor throughout.

5.6.3 Teacher Perspective

For Child A, the teacher SDQ score for 'difficulties getting on' reduced from 'slightly raised' level pre-intervention to 'average' post-intervention. 'Kind and helpful' behaviours were in the 'average' range pre-test and showed no change post-test, meaning there is some evidence of change due to the intervention.

For Child B, the teacher SDQ scores for 'difficulties getting on' and 'kind and helpful' remain within the 'average' range post-intervention, meaning there is no evidence of change due to the intervention.

For Child C, both 'difficulties getting on' and 'kind and helpful' are in the 'average' range pre-intervention. Both show a small improvement post-intervention, although they are still within the 'average' range. This means there is some limited evidence to indicate change due to the intervention.

Child D's 'difficulties getting on' score was in the 'very high' range pre-intervention and remained unchanged. His 'kind and helpful' score was in the 'average' range pre-intervention and reduced very slightly post-intervention. This means there is no evidence to indicate change due to the intervention.

5.6.4 Parent Perspective

For Child A, the parent SDQ showed that 'difficulties getting on' was 'slightly raised' pre-intervention, and no change was observed post-intervention. 'Kind and helpful' behaviours was in the average range pre-test and showed no change post-test, meaning that there is no evidence of change due to the intervention.

For Child B, ‘difficulties getting on’ shows no change and is still within the ‘very high’ range post-intervention. ‘Kind and helpful’ shows a slight increase, from the ‘very low’ to the ‘low’ range. This means there is some limited evidence to indicate change due to the intervention.

For Child C, ‘difficulties getting on’ is in the ‘average range and ‘kind and helpful’ is in the ‘low’ range pre-intervention. Post-intervention, this has deteriorated slightly, with ‘difficulties getting on’ being in ‘slightly raised’ and ‘kind and helpful’ changing to the ‘very low’ range. This means there is no evidence to indicate change due to the intervention.

Child D’s ‘difficulties getting on’ score is in the ‘very high’ range pre-intervention, and the ‘kind and helpful’ score is ‘very low’. Post-intervention, both scores show an improvement, with ‘difficulties getting on’ reducing to the ‘high’ range and ‘kind and helpful’ increasing to be in the ‘average’ range. This suggests that there is some evidence of change due to the intervention.

5.6.5 Conclusion

From the visual analysis of the whole class data it appears all four pupils showed a small increase in peer acceptance in some way. The visual analysis for Child A showed moderate evidence for an increase, although no clear impact on either ‘neutral’ or ‘unsure’ ratings. Child B had an improved composite score with a reduction in ‘neutral’ ratings. Child C’s acceptance showed a change from a negative to a positive trend, which corresponds to the opposite change in peer rejection, but no changes in ‘neutral’ or ‘unsure’ ratings. Child D’s acceptance score shows a positive trend and higher level at the end of the intervention only.

The visual analysis indicates no evidence of change in who the focus children liked to play with or familiarity scores (i.e. ‘neutral’ or ‘unsure’ ratings) to correspond to the changes in peer acceptance (all pupils) or familiarity (Child B and Child D).

Improvements in peer acceptance is linked to some evidence in teacher ratings of improvements in social skills for Child A and limited improvement in social skills for Child C. Child B's scores showed no change to correspond to her improved composite acceptance score, although both her and Child C's scores were in the 'average' range pre-intervention. There was no improvement in Child D's scores.

For the parent SDQs, there is good evidence to suggest improvements for Child D. There is limited evidence to suggest improvements from Child B and no change in Child A. Child C's scores deteriorate slightly.

Overall, this suggests there is some evidence to show a small increase in peer acceptance, linked to improvements in related behaviours from the teachers' perspective as a result of the CoF intervention for Child A and Child C. Improvements in Child B's peer acceptance were only linked to limited improvements in parent ratings of related behaviours. Child D's improvements were linked to changes in parent ratings only. The strongest evidence is for Child A, with more mixed results for Child B, Child C and Child D.

5.7 Research Question 1(b): Does CoF reduce peer rejection of primary-aged children with a hearing impairment?

5.7.1 Peer Perspective

For Child A, there is no evidence from the visual analysis of composite score to indicate CoF reduces her peer rejection. However, there is a small immediate reduction in whole-class peer rejection, which is positive.

There is a moderate evidence of a small reduction in peer rejection for Child B in the whole class, according to the visual analysis and composite score, which can be partially attributed to the Circle volunteers. There was a small immediacy effect.

The visual analysis and composite score indicate no evidence of a reduction of whole-class peer rejection for Child C. However, it began to move in the right direction in the intervention phase.

There was strong evidence for a reduction in peer rejection as a result of the intervention for Child D, both from the visual analysis and composite score. This was linked to increases in ‘neutral’ ratings.

5.7.2 Self Perspective

Limited data was collected for Child A’s views of her peers, so it is not possible to draw a conclusion from this.

For Child B, Child C and Child D, there is no evidence of an impact of CoF on the number of children whom with they do not like to play.

5.7.3 Teacher Perspective

For Child A and Child C, there is no evidence to suggest improvements in ‘behavioural difficulties’ or ‘hyperactivity/concentration’, although both were in the ‘average’ range pre-intervention.

Child B’s scores were in the ‘average’ range pre-intervention, although there was a very small reduction in ‘hyperactivity/concentration’, suggesting very limited evidence of improvement.

Child D’s ‘behavioural difficulties’ was in the ‘average’ range pre-intervention and remained unchanged. His ‘hyperactivity/concentration’ was ‘high’ and showed a reduction post-intervention.

5.7.4 Parent Perspective

For Child A, ‘behavioural difficulties’ was in the ‘average’ range pre-intervention, and this remained unchanged post-intervention. ‘Hyperactivity/ concentration’ showed a slight decrease post-intervention, but was still within the ‘average’ range. This suggests very limited improvements in behavioural issues.

For Child B, there is no evidence to indicate improvements in ‘behavioural difficulties’ or ‘hyperactivity/concentration’, which were in the ‘high’ range pre-intervention.

Child C’s ‘behavioural difficulties’ and ‘hyperactivity/concentration’ scores are within the ‘average’ range pre-intervention. Post-intervention, both scales are in the ‘slightly raised’ range, indicating some more difficulties than pre-intervention and therefore no evidence of improvement.

Child D’s ‘behavioural difficulties’ score was in the ‘average’ range pre-intervention, whereas the ‘hyperactivity/concentration’ score was in the ‘very high’ range. His ‘behavioural difficulties’ score remained unchanged post-intervention, and the ‘hyperactivity/concentration’ score reduced to the ‘slightly raised’ range. This indicates some evidence of change as a result of the intervention.

5.7.5 Conclusion

Visual analysis and composite score suggests strong evidence of a reduction in whole-class peer rejection for Child D and moderate evidence for Child B. This is parallel to small improvements in teacher ratings of ‘hyperactivity/ concentration’ only for both children and parent ratings of ‘hyperactivity/concentration’ for Child D, although neither had identified ‘behavioural difficulties’ pre-intervention. Parent ‘high’ ratings of behaviour remained unchanged for Child B.

There was no evidence for improvements in peer rejection for Child A or Child C according to the visual analysis or composite score. However, Child C's peer rejection changed from a positive to a negative trend. No improvements in behaviour were found, although all were in the 'average' range pre-intervention except Child B's parent score. Child A's level and composite score showed a small increase, with no changes in teacher behaviour ratings and only small improvements in parent ratings of 'hyperactivity/ concentration'. However, all her ratings were in the 'average' range pre-intervention.

There was no evidence of change in the number of children with whom either Child B, Child C or Child D did not like to play with. However, the direction of change was positive for Child B and Child C, with floor effects for Child D.

Overall, there is limited evidence to suggest a reduction in peer rejection and related behaviours, although there were few behavioural concerns pre-intervention.

5.8 Research Question 1(c): Does CoF improve the happiness of children with a hearing impairment?

5.8.1 Self Perspective

For Child A, the SCHI showed a decrease in happiness, from 'low average' to 'very low' post-intervention, although this was thought to have been due to extraneous variables.

Child B, Child C and Child D's SCHIs showed a slight decrease in happiness post-intervention, although all scores were in the 'high average' or 'average' range pre-intervention, suggesting they were already happy at school and continued to be happy post-intervention.

5.8.2 Teacher Perspective

For Child A, the SDQ showed a slight increase in ‘emotional distress’ post-intervention, which was in the ‘very high’ range. Therefore there is no evidence to suggest an improvement in Child A’s happiness.

Child B B’s ‘emotional distress’ showed no change, although it was in the ‘average’ range pre-intervention, meaning that there is no evidence of change.

Child C’s ‘emotional distress’ was in the ‘average’ range pre-intervention, and showed a slight decrease, suggesting very limited evidence of an improvement in his happiness.

Child D’s ‘emotional distress’ showed a small decrease, from the ‘slightly raised’ to the ‘average’ range, suggesting some evidence of an improvement in his happiness.

5.8.3 Parent Perspective

For Child A, the SDQ showed a slight increase in ‘emotional distress’ post-intervention, still in the ‘very high’ range. This suggests no improvement in her happiness.

For Child B, the SDQ showed a slight decrease in both ‘emotional distress’, although it remained in the ‘high’ range. This suggests very limited improvement in Child B’s happiness.

Child C’s ‘emotional distress’ was in the ‘average’ range pre-intervention, and remained unchanged, suggesting no improvement in his happiness.

Child D’s ‘emotional distress’ was in the ‘very high’ range pre-intervention. Post-intervention, this decreased to the ‘slightly raised range’, suggesting evidence of improvements in his happiness.

5.8.4 Conclusion

There is no evidence from any of the four pupils that their happiness increased, however, three pupils had scores in or above the ‘average’ range pre- and post-intervention.

Child A’s lower happiness scores corresponded to ‘very high’ adult ratings of ‘emotional distress’. Child B and Child C’s ‘average’ happiness scores were linked to ‘average’ teacher ratings of ‘emotional distress’ pre- and post-intervention and showed little change post-intervention. Child D’s ‘very high’ (parent) and ‘slightly raised’ (teacher) ratings contract his high self-reported happiness scores. The teacher SDQ shows a small reduction in ‘emotional distress’ post-intervention and the parent SDQ shows a significant decrease post-intervention, the opposite to the small decrease in his happiness. ‘High’ and ‘very high’ parent ratings of Child B and Child D’s ‘emotional distress’ pre-intervention contradict the ‘average’ happiness score. The improvements in Child B’s score post-intervention do not correspond with small reductions on the SCHI. Child C’s parent ratings are ‘average’ pre-intervention, which corresponds to the ‘high average’ happiness score, and showed a small increase post-intervention, although still in the ‘average’ range. However, anecdotally, staff commented all four pupils had enjoyed the Circle sessions.

Based on the evidence gathered, it is not possible to conclude there was an effect of the CoF on the perceived happiness of any of the children. However, three of the pupils had happiness scores within or above the ‘average’ range that remained there. There was very limited evidence to suggest that ratings of ‘emotional distress’ were reduced.

5.9 Relating Findings to Literature

5.9.1 Social Inclusion Research

The current study investigated the social inclusion of children with HI using the SIS, SDQ and SCHI. The SIS is a sociometric tool that aims to measure how well children like to play with others. The study found that CoF had some impact on increasing peer acceptance of the focus child, but not on reducing peer rejection or improving their happiness.

Nunes *et al.* (2001) found deaf pupils attracted both positive and negative views from peers, and tended to be more neglected than their hearing peers. The current research found evidence for the former finding but not necessarily the latter, as all toleration scores were below 0.20, with the exception of Child D.

The link between the individual and their experiences appeared complex in the current research, which is similar to the theoretical models discussed in Section 2.2.2.1. However, it is not possible to uncover factors that contributed to the child's levels of acceptance, rejection and happiness prior to the research being undertaken. Coie *et al.* (1982) identified a link between social skills and prosocial behaviour, whereas in the current study, adult ratings identified few difficulties in these areas for three of the participants, although some improvements in the behaviours corresponded with improvements in peer acceptance. An alternative explanation is that the pupils' social difficulties were more subtle (e.g. Toe and Paatsch, 2013), and so difficulties and improvements were not captured in the SDQ.

Only one of the children with HI was perceived as having behavioural difficulties by parents, although the literature mentioned that children who were aggressive often had social difficulties and were socially excluded (e.g. Nyberg *et al.,* 2008; Kupersmidt *et al.,* 1995; Hay *et al.,* 2004; Coie *et al.,* 1982). This contrasts with the study by Cappelli *et al* (1995), who found deaf

children were more likely to have behavioural difficulties. There were limited improvements in behaviours and peer rejection in the present study.

Crick and Dodge's model (1994) highlights the complexity and circular causality affecting social competence in children. Wellman & Peterson (2013) suggested that circular causality (Dowling & Osborne, 1994; Miller, 1994) affects deaf children by increasing or reducing their interaction opportunities. Moreover, Frederickson and Cline (2009) indicated these are inherent in peer acceptance, e.g. through the support from other children to develop skills and increased empathy and understanding of the focus child and his/her situation. These cover the within-child and peer reactions in the model. Three of the four CoF facilitators identified an improved understanding and increased empathy in the peers, which could have contributed to the increase in peer acceptance, rather than changes in the focus child's behaviour (Crick & Dodge, 1994). This corresponds to Nyberg *et al.*'s (2008) findings that a child's social competence has less effect on sociometric data than changes in their social skills. Because there were limited social difficulties identified by adults except for Child D, reputational bias (Hymel *et al.,* 1990) prior to the intervention could account for pre-intervention scores, which was then reduced post-intervention.

Participant information indicated Child A had two friendships, suggesting that she was not well-integrated with the other members of the class. Her happiness level pre-intervention was the lowest out of the four participants, although her average acceptance rating was the highest. This contradicts the findings by Nyberg *et al.* (2008) that internalising behaviours relate to low peer acceptance. However, this does not match anecdotal information regarding her friendships. Likewise, increases in peer acceptance did not correspond with improvements in happiness and decreases in internalising behaviours (i.e. 'emotional distress' on the SDQ). In contrast, Child D had the highest pre-intervention happiness, but the lowest average acceptance score.

5.9.2 Comparison to Studies Evaluating Circle of Friends

The present study adopted a SCED methodology in an attempt to build on previous case study research on CoF and make data collection and analysis more rigorous (e.g. Newton *et al.* (1996), Pearpoint and Forest (1992, cited in James & Leyden) and Taylor (1997)). The present research had suggested there was some increase in peer acceptance but no change to peer rejection or focus child happiness, meaning the results in the current study were not as positive. Unlike the findings by Whitaker *et al.* (1998), there did seem to be some indication of the Circle members liking to play with the focus child, although this does not necessarily indicate friendship, which was not investigated. There was limited evidence to suggest it improved pro-social behaviours (i.e. the 'kind and helpful' scale on the SDQ), as evidenced by Taylor and Burden (2000, cited in James & Leyden, 2010).

Frederickson and Turner's study (2003) found a positive impact of CoF on peer acceptance, which the current study replicated in three pupils and to a very limited extent with the fourth. Frederickson and Turner (2003) found limited effects of CoF on teacher and parent ratings of behaviour, which links to the small (if any) effects on teacher or parents' perception of behaviour in the present study, with the exception of large changes in ratings for Child D on the parent SDQ.

In all cases included in the present study, the baseline composite scores for acceptance were higher and rejection scores were lower than in Frederickson *et al.*'s study (2005). This suggests there were fewer issues of social inclusion in children in the present study from the outset. Their study did not investigate the toleration score to compare that to the present research. In the Frederickson *et al.* (2005) study, there was a clear immediate effect on both acceptance and rejection, which then began to return to baseline. In contrast, the present study only showed a small immediate positive effect on one pupil's acceptance and three pupils' rejection. For three pupils' acceptance and one pupil's rejection, the immediacy effect was in the wrong direction, which contradicts the findings

from Frederickson *et al.* (2005). This could be related to the higher acceptance and lower rejection indices found at baseline in the present study. However, like with their study, the present study often found similar patterns in the whole class and the data for the Circle volunteers.

Anecdotally, in the present study, three of the four Circle facilitators noted the other children in the Circle were more empathetic and understanding towards the focus child's difficulties as a result of the intervention (James & Leyden, 2008; 2010; Whitaker *et al,* 1998; Taylor, 1997 Newton *et al,* 1996). This corresponds to the ideas suggested by Schliesinger (1978) and Pollat (2003) regarding the impact of other people (i.e. their opinions) on improving peer acceptance (i.e. the social model of disability). Moreover Newton and Wilson (2003) proposed the whole class CoF meeting involves the peers to break the cycle of circular causality and initiate changes in opinions.

5.9.3 Comparison to Studies Evaluating Interventions for Deaf Pupils

5.9.3.1 Comparison to Social Skills Interventions

Only one study on social skills interventions used sociometric data. The present research identified some limited impact on peer acceptance, although without statistical rigour, and no overall impact on peer rejection. Suarez (2000) found there were no significant differences on sociometric data. Therefore, the outcomes in the present study were similar to the sociometric survey results for social skills interventions.

Teacher ratings for one pupil showed an improvement in scores for 'difficulties getting on' and 'kind and helpful'. Greenberg and Kusche (1993; 1998) found children who accessed the PATHS intervention showed improvements in social skills in comparison to a wait-list control. Suarez (2000) found improvements in social adjustment using a social skills intervention. However, the changes in the present study were not to the same level as social skills interventions. This is understandable, given that

CoF's primary aim is not to improve social skills. For two of the other pupils, the scores were within the 'average' range, and like the Greenberg and Kusche (1993; 1998) studies, these average scores were maintained. Child D showed no improvement according to the teacher ratings post-intervention, despite having identified difficulties pre-intervention.

There were no improvements in happiness for the participants in the current study, and for one of the participants, there was a significant drop in happiness post-intervention. From the SDQ scores, there were mixed results in the current study, with Child B, Child C and Child D mostly showing small improvements in 'emotional distress', and Child A showing small declines. Suarez (2000) found improvements in emotional adjustment.

5.9.3.2 Comparison to Peer Support Interventions

Similar to the Kurkjian and Evans (1988) study, small improvements were found in the overall peer acceptance of all of the children following the intervention in the current study, although the amount of change varied between participants. Kurkjian and Evans (1988) found increases in the acceptance from children not involved in the intervention. Therefore, changes in the whole class data could be due to this natural improvement. Alternatively, changes in the present study could be caused by the other children's involvement in the whole class meeting.

Antia and Kreimeyer (1996) found both social skills interventions and peer support interventions increased pupil recognition but neither intervention changed social acceptance scores. In the current research, there were small changes in the peer acceptance, but there was no clear effect on overall peer rejection, which is a more positive finding than the present research. However, the present study only found a small improvement was found in 'neutral' ratings for two participants, but no improvement was found in 'unsure' ratings, which does not match their findings for improved familiarity scores.

5.10 Strengths of the Research

The multiple baseline design sought to enhance the reliability and validity. This may have been further improved by the use of an ABA/ABAB design, although this was dismissed on ethical grounds. The researcher further enhanced reliability and validity by doing treatment fidelity checks and providing Circle facilitators with a treatment integrity checklist to use for the meetings that were not observed. The researcher provided training and on-going supervision of staff regarding taking the measures and implementing the intervention.

The external validity of the study was enhanced slightly by the use of four SCEDs undertaken in different schools, with different environments and staff. Although it is not possible to generalise from SCED research, the researcher has provided a detailed and full description of each case, school context and CoF intervention and measures taken in order to support replication and application in other settings.

The reliability of the findings were further improved through gaining inter-rater reliability for the visual analyses. In addition, in order to create a full and detailed picture of each child's response to the intervention, data sources (parent, teacher, focus child, peers) were triangulated, which further enhances the reliability of the findings. This is because no single respondent can provide flawless information, meaning each source has limitations (Wiglesworth *et al.,* 2010). Reliability can be increased if the information from the different sources complement each other, which was the aim of this research.

5.10.1 Treatment Fidelity

For Child A and Child C, treatment fidelity checks through the checklists and observations checks indicate 100% adherence to the intervention procedure. However, for Child B only 75% adherence was found in the initial week, but

100% adherence thereafter. Treatment fidelity checks for Child D indicate 85% adherence to the intervention procedure.

The high levels of treatment fidelity observed further support the internal validity and reliability.

5.10.2 Inter-Rater Reliability

Inter-rater reliability was gained for the SIS whole-class data graphs for each child, as detailed visual analysis was completed on these graphs. The rater was provided with the graphs and definitions of the visual analysis factors: level, trend, variability and immediacy, and asked for a judgement on overall impact as well. Using the inter-rater reliability questionnaire (Appendix 8.31), there was good inter-rater reliability on the judgements of effect of the intervention with the researcher. This may have been enhanced with using more inter-raters and using statistical tests such as calculating the Cohen's Kappa to make this more robust.

5.10.3 Unique Contribution

As mentioned in Section 2.6.1, to the researcher's knowledge, this is the first piece of research investigating the use of CoF with children with a hearing impairment. This study added to previous CoF research by investigating the impact of the intervention from the perspectives of range of respondents: the participant, the participants' peers, the class teacher and the parents. It used a more rigorous methodology than many studies investigating the impact of CoF. Therefore, it adds to the intervention's evidence-base.

5.11 Limitations of the Research

The results must be considered in relation to the limitations of the research. Some relate to the issues of validity and reliability highlighted in the Methodology (Section 3.11).

SCED designs lack external validity, meaning they are not generalisable. However, using a multiple baseline design and replicating the SCED in different contexts improves this slightly. In addition, limitations with visual analysis were outlined in Section 3.7.2, including problems of autocorrelation between data points and lack of agreement between raters, even when inter-rater reliability measures were sought. Visual analysis was only completed for the whole class data, as the small number of Circle volunteers makes it less reliable. Floor and ceiling effects reduce reliability. In addition, the baseline measures were not always stable, which is needed to ensure any change between the baseline phase and the intervention phase can be attributed to the intervention. Although it was not possible to extend the baseline phase due to time constraints, this would have been preferable to enhance the validity and reliability of the study's findings.

Internal validity was reduced because there is a variation in numbers of children completing the measure (whole class) and occasionally missing data points for the Circle volunteers and focus children's SIS ratings due to absence. This may have impacted differentially on the percentages reported in this research and therefore the conclusions drawn. One week of data was missing for Child D, which will impact on internal validity.

The sample size was small (four participants) and participants were recruited through a purposive convenience sampling strategy, meaning they may not be representative of children with HI. The source of participant identification is another limitation, as teacher ratings did not always suggest social difficulties. It would have been beneficial to gain more specific information on social skill/social inclusion difficulties from school staff. The sample was heterogeneous, with regards to year group, hearing impairment and

treatment. There was no control group and participants were not randomly allocated to different conditions, which further reduces the validity. Therefore, the study's external validity and generalisability are low.

The research was limited due to practical and time constraints that can occur in 'real-world' research. The intervention only ran for 6 weeks, which is the minimum length recommended (Barrett & Randall, 2004; Frederickson & Turner, 2003; Frederickson *et al.*, 2005; James & Leyden, 2008; James & Leyden, 2010; Taylor, 1997), as "it is not a 'quick fix' technique" (Newton, Taylor & Wilson, 1996, p. 47). While school and researcher time constraints prevented the research from being extended, a longer intervention and post-intervention follow-up would have been preferable to help determine if a longer-term impact was shown.

The different environments used enhanced the ecological validity of this research, but this created variations in the practical arrangements of the Circles (e.g. when and where it was held, and which pupils could volunteer) and the role and level of experience of the different facilitators, which may have been confounding variables. These variables could have impacted on how the Circles were run and therefore how effective they were. Newton *et al.* (1996, p. 44) identified that "group processes and content can vary enormously and are largely affected by the style and strengths of the facilitator and what they feel able to handle or pursue". James and Leyden (2010) recognised the attitudes and behaviours of the class members and focus pupil response may impact on group cohesion.

In addition, all the measures were self-report questionnaires, which have ceiling/floor scores, along with the potential to be influenced by participant bias, demand characteristics or other extraneous variables unrelated to the intervention (Robson, 2011). The results could therefore be due to confounding variables, or issues related to internal validity (Robson, 2011; Cohen *et al.,* 2011), such as history, maturation and testing, particularly in relation to Child C. However, other similar pieces of research (e.g. Frederickson *et al.,* 2005) used similar approaches, suggesting the data collection had face validity. All data in the present study was collected by the

school staff, making it more ecologically valid, but possibly not as consistent across settings. Frederickson and Cline (2009) mention particularly that peer ratings are beneficial, but can be affected by personal factors such as physical attractiveness, intelligence, academic success and by interactive factors, such as the similarities between the child and peer's race and gender. All of these factors could have been influential and are separate from children's HI, the focus of the present study.

In terms of the pre-post measure used, other confounding variables in the school or class could have had an impact on the score, including the context and individual circumstances (e.g. when in the term/year the measure was taken), as well as natural maturation. The parent and teacher SDQs are particularly prone to bias, as the adults have investment in the intervention. A teacher's education and experience can influence their ratings (Denham, 2005).They were repeated after just 6 weeks, instead of the recommended 6 months (Goodman, 1997), potentially reducing the validity of the findings. These factors, along with the lack of control group, make the causal links between the intervention and the outcome less clear. This is particularly relevant for the data collected for Research Question (1c), which relied solely on pre-post test data. Observational data, such as that used by Miller, Cooke, Test and White (2003) might have improved the reliability and validity, because they can be more objective than self-report measures.

5.12 Professional Implications of Research

This study provides evidence that CoF has some impact on peer acceptance of individual children with HI in mainstream primary school settings, but no clear effect on peer rejection or their happiness in school. However, there was tentative evidence in the pilot phase of this study to indicate that CoF may be effective in promoting the social inclusion of pupils with HI, depending on the particular case and setting.

Frederickson (2002) and Fox (2011) highlight the importance of ensuring EPs are aware of evidence-based practice, and recommend evidence-based strategies. It is important to consider this in a more sophisticated manner, i.e. not just ‘what works?’ (different interventions), but ‘what works for whom under what conditions?’ (different participant populations and environmental circumstances - Frederickson, Webster & Wright, 1991).

EP work provides an opportunity to attempt to answer these questions using research. However, they have an ethical obligation (e.g. Health and Care Professionals, 2009; British Psychological Society, 2014) to ensure people involved in the research do not come to any harm. Therefore, clear protocols should be in place (as was the case in the present study) to minimise any ill-effects and support staff and pupils should any issues arise.

Circle facilitators mentioned they felt that it had been helpful for the peers to understand more about HI and the impact it has. The researcher suggests that it may be important for staff to have an improved understanding of HIs, to enable them to adopt more inclusive practices in the classroom to suit these pupils and identify difficulties more easily. This could be facilitated by EPs, either solely or in conjunction with other colleagues, such as Teachers of the Deaf. This improved awareness could support early intervention, enabling quicker and improved benefits.

5.13 Possible Future Research Directions

This was the first evaluation of CoF focused on children with a HI; it would therefore be worthwhile exploring the impact of this intervention on children with HI through further research.

The methodology and findings of the present study would be enhanced by the use of an alternative SCED (such as an ABAB design), ensuring a stable baseline, extending the intervention phase, or repeating the measures in a follow-up period. These improvements would enhance reliability and internal validity in a SCED.

Other research could recruit larger samples and utilise a group design (e.g. a RCT) to enhance the external validity (i.e. generalisability) of any findings. This could either involve a wait-list control group or compare alternative interventions, such as whole class, social skills or peer support ones, to enhance validity of the findings.

The sampling strategy should be changed in future studies of this kind to ensure participants recruited for the study have significant issues that require intervention. This could be done by developing the inclusion criteria further to specify particular social difficulties, and identifying participants through the schools directly.

Other types of research could adopt a more constructivist methodology similar to James and Leyden (2008; 2010), to uncover the individual subjective experiences of different people involved in the CoF (e.g. focus child, Circle volunteers and other peers, facilitator, class teacher, parents).

Future research should carefully consider the measures employed. Alternative self-report measures could be chosen that may be more sensitive to peer interactions and the views of peers concerning particular pupils, for example by examining the feelings of acceptance experienced by the focus child, rather than their acceptance/rejection of peers. It may be helpful to consider measures that investigate the impact of CoF on other theoretical constructs not considered in the present study, such as the areas identified by Koster *et al.* (2009), e.g. reciprocal friendships, bullying and social self-concept. Behavioural observation may offer a more accurate measures than self-report measures used in the present study, although the behaviours observed would have to be carefully considered and specified, along with the observation schedule.

Whilst this study examined the impact of CoF on 4 children with HI, it is important to build on this with further research into how social support interventions such as CoF can support pupils with HI with peer relationships and social inclusion in school. This could include consideration of the suitability of CoF or other interventions for different age groups (e.g. Key

Stage 1, pre-school and secondary-aged pupils), as this study only focused on Key Stage 2 pupils.

It would be beneficial to investigate the impact of CoF on children with different types of HI and levels of social inclusion to examine why interventions appear to be effective with some pupils and not others, and developing an understanding of what processes impact on the effectiveness of the intervention (e.g. focus child, Circle member, Circle facilitator, and meeting characteristics). It may be worth considering making adaptations of the intervention for pupils with HI. This could be done by providing peers with more information regarding hearing impairments as part of the whole-class meeting, or only using elements of the intervention, to increase awareness of difficulties associated with HIs, rather than implementing the whole CoF intervention.

6 Conclusion

This section summarises the research, by considering the originality of the research design, methodology and findings.

The study aimed to investigate the impact of the peer support intervention CoF on the social inclusion and happiness of children with a HI. The research showed a limited impact of the CoF intervention on peer acceptance (i.e. social inclusion), and no impact on rejection or happiness on the four children with HI involved in this study.

While there appeared to be small improvements in the whole-class peer acceptance of three of the four participants (visual analysis or composite score), the change for the fourth participant was due to a change in trend rather than level. There was a small improvement (i.e. reduction) on one of the pupil's 'neutral' ratings, but no change in 'unsure' ratings.

Supplementary evidence was collected in an attempt to further illuminate the focus child's response to the intervention. While it is not possible to attribute any changes observed exclusively to the intervention, teacher SDQs indicated two out of four pupils showed an improvement in the 'difficulties getting on' scale from pre-intervention and one pupil also showed a slight improvement in the 'kind and helpful' scale post-intervention. There was limited change in the parent SDQ scores post-intervention, with the exception of Child D. Overall, there is tentative evidence of some small improvement in behaviours related to peer acceptance in some but not all pupils as a result of the CoF intervention.

Child B and Child D showed a reduction in overall peer rejection following the CoF intervention. Child A showed a small increase in both level and composite score, as did Child C, although Child C's trend reversed to a negative trend in the intervention phase. There was no evidence of changes in peer rejection due to CoF in those pupils according to the visual analysis. Supplementary pre-post SDQ data suggested minimal change in teacher and

parent ratings of ‘behavioural difficulties’ and ‘hyperactivity/concentration’ post-intervention, with the exception of Child D’s ‘hyperactivity/concentration’ score on the parent SDQ. Overall, there was limited evidence to suggest a reduction in peer rejection and related behaviours as a result of CoF intervention.

All pupils showed a decrease in happiness post-intervention, although for three of the pupils this reduction was small and was still within or above the ‘average’ range post-intervention. There were extraneous variables that could account for the dramatic reduction in Child A’s score post-intervention from ‘low average’ to ‘very low’. Supplementary teacher SDQ data for ‘emotional distress’ scale indicates where there were limited concerns regarding emotional adjustment pre-intervention, there was no change, corresponding to ‘average’ happiness scores post-intervention. Child A’s score was in the ‘very high’ range pre-intervention and showed a small increase, corresponding with the ‘low average’ happiness score pre-intervention and lower score post-intervention. Parent SDQs indicated minimal changes post-intervention, except for Child D. The evidence from this study is therefore inconclusive as to the impact of the CoF intervention on happiness of the participants.

The confidence with which these conclusions can be made is limited with regards to the methodological issues related to reliability and validity, which have been outlined in detail in Sections 3.11 and 5.11. This includes the small sample size, issues with the measurements utilised and the length of baseline and intervention phases. Therefore, the conclusions have to be interpreted with caution. Several possible improvements and research directions were suggested to improve and expand on this research and therefore widen the evidence-base for CoF and other related social inclusion interventions with children with hearing impairments. This is an important consideration for EP practice, in relation to future research and recommendations as part of casework.

This study makes a unique contribution to research in a number of ways. Firstly, few research studies have measured the impact of social inclusion

interventions (social skills or peer support intervention) on primary-aged pupils with HIs and more specifically, this is the first study to have investigated the impact of CoF on children with HI. Therefore, this study adds to the evidence both for social interventions for children with HIs generally, and for populations CoF has been used with.

Completing this piece of research has suggested that SCED designs are helpful to utilise as part of 'real-world' research within EP practice. Group designs should not be discounted, but do not show individual changes as clearly and all children do not respond to interventions in the same way. There are practical difficulties for implementing research in schools, based on availability and mechanisms to support staff implementing the research. Research skills gained through the doctorate can be utilised when evaluating children's response to intervention. It is an important role of EPs to both examine the impact of interventions generally to add to their evidence base, and to evaluate the impact of recommended strategies.

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8 Appendices

8.1 Search Terms Used in Systematic Review

Effect* Outcome* Result*	AND	Interven* Program* Course* Train* Treat*	AND	Social* reject* Social* neglect* Social* isolat* Social* accept* Peer reject* Peer neglect* Peer isolat* Peer accept* Peer relation* Friend* Lonel* Social skill Social behav* Social compet* Social support* Social interact* Social integrat* Social participat*	AND	Deaf* Hear* impair* Hard of hearing
Limited to *peer reviewed studies* Limited to *English* Limited to *school-age*						

8.2 Included and Excluded Papers in Systematic Literature Review

	Initial Number of Papers	Limited to Peer Reviewed	Limited to English	Limited to School Age
PsychInfo	311	-	-	74
ISI Web of Knowledge	619	-	580	-
ERIC	156	65	-	-

	PsychInfo	ISI Web of Knowledge	ERIC
HI intervention not social skills	10	3	0
Medical study (e.g. information about hearing screening)	2	48	0
Education (e.g. learning)	5	9	7
Impact on family	2	19	4
Investigating social skills	20	20	12
Intervention not social	1	21	2
Generic (e.g. assessment)	1	8	1
Not HI (e.g. deafblind, ASD)	9	336	9
Perceptions of HI	2	1	0
Not school (e.g. parent intervention)	3	2	2
Adults/Teenagers	1	49	8
Not social skills (e.g. investigating language)	0	51	12
Pre-school	4	6	4
Not English	1	1	0
Non-Experimental	1	0	0
Duplicate	-	4	4

8.3 Gough's (2007) Weight of Evidence Model Applied to the Systematic Review

	High	Medium	Low
A	Quality of design: • Participant characteristics clearly defined (e.g. degree of hearing loss, age). • Intervention clearly described. • Data analysis clearly explained. • Clear purpose for research. • Research is clearly accessible.	Quality of design: • Most participant characteristics defined. • Some information on intervention elements. • Some information on data analysis. • Some information on purpose of research (e.g. intervention for all children with HI, regardless of need). • Some parts of research are unclear.	Quality of design: • Vague/no information on participant characteristics. • Vague/no information on intervention elements. • Little information on data analysis. • Little information on purpose of research. • A significant proportion of the research is unclear/ inaccessible.
B	Appropriateness of design: • Quantitative (e.g. SCED, group design). • Mixed methods (e.g. statistical analysis and focus group). • Control and/or comparison group with HI. • Data considered from multiple sources and through different methods to triangulate evidence. • Fidelity checks for intervention.	Appropriateness of design: • Comparing children to only hearing pupils. • Data collected from two sources (e.g. teacher and pupil). • Some fidelity checks for intervention.	Appropriateness of design: • Data analysis is mostly focused on anecdotal evidence. • No control or comparison group. • No pre-intervention data. • Only one measure taken. • No fidelity checks for intervention.
C	Relevance for research question: • Children in KS2.	Relevance for research question:	Relevance for research question:

	• Intervention looks at improving social inclusion of pupils with HI (e.g. through increasing social skills). • Children attend mainstream school.	• Mixture of KS1/KS2/KS3 children, but individual children/age groups can be distinguished. • Children attend specialist school for deaf children. • Intervention does not focus on children with HI.	• Mixture of age ranges, but individual children/age groups cannot be distinguished or mostly children younger than 6 years old. • Intervention does not focus on social inclusion (e.g. academic focus).

Study	A	B	C	Overall
Avcioglu (2007)	Low	Medium	High	Medium
Antia, Kreimeyer & Eldredge (1993)	High	Medium	Medium	Medium
Lemanek, Williamson, Gresham & Jensen (1986)	High	Medium	Medium	Medium
Kurkjian & Evans (1988)	Medium/Low	Medium	Medium	Medium
Fisher, Monsen & Moore (1989)	Medium	Medium	High	Medium
Rasing & Duker (1992)	High	Medium	High	High
Rasing (1993)	High	High	Medium	High
Greenberg & Kusche (1993; 1998)	High	High	High	High
Suarez (2000)	High	Medium	Medium	Medium
Antia & Kreimeyer (1996)	High	Medium	Medium	Medium
Antia & Kreimeyer (1997)	High	Medium	Medium	Medium

8.4 Summary of Papers Included in Systematic Literature Review

Study	Design	Participants			Intervention		
		Number	Age	Hearing Impairment	Setting	Nature	Details
Avcioglu (2007)	Multiple baseline across subjects	Nine	Third grade	No details	Special education class in primary school	Cooperative learning (with hearing peers)	30 sessions (10 basic social skills, 10 skill starting and continuing the relationship, 10 conducting work)
Antia, Kreimeyer & Eldredge (1993)	Pre- and post-intervention measures with comparison group and normal hearing controls.	25 with HI in social skills group, 24 in integrated activities group with HI.	Between 3-7 at the beginning of study. 15/25 5:00 and above in social skills group (8 6:00 and above). 19/24 5:00 and above in integrated activities group (9 6:00 and above).	15 used primarily oral communication, 34 used total communication. Judged by teachers to be of average or above-average intelligence, no disabilities to affect development.	Preschool, kindergarten and first grade in 10 public schools and 1 private school where children with HI were mainstreamed into regular classrooms for part of the day. Two preschools that included children without HI in reverse mainstreaming, 1 child-care programme that included children with HI for part of the day	Adapted version of social skills intervention by Antia & Kreimeyer (1987; 1988).	Run by teachers with 4-6 children (1-3 with HI). 20 minutes a day two or three times a week. Mean number of sessions: 37 (28-56). Social skills: taught greeting, sharing, cooperating, complimenting, inviting through social interaction routines that were modelled and prompted. Integrated activities: aim to become familiar with a small, stable group of peers.
Lemanek, Williamson, Gresham & Jensen (1986)	Multiple baseline across subjects	Four	11:7 to 18:3	Bilateral sensorineural hearing loss in severe-profound range	11 year old had regular classroom instruction in either public or private school system.	Social skills training, two 45-minute sessions a week for approximately 4 weeks. Discusses steps.	Explains 7 steps. Used instruction, modelling and rehearsal. Target behaviours: speech duration,

							response latency, content, smiles.
Study	Design	Participants			Intervention		
		Number	Age	Further Information	Setting	Nature	Details
Kurkjian & Evans (1988)	Two group pre- mid- and post-intervention comparison (hearing children)	Six hearing impaired.	Fourth and fifth grade.	No information.	Public elementary school	Teaching hearing peers sign language twice a week for an hour. 29 sessions over 5 months.	Sign language course taken by experimental group of hearing peers. Looked at vocabulary development, reading and discussion, information about hearing impaired individuals and Deaf culture.
Fisher, Monsen & Moore (1989)	SCED with three interventions.	Four	Not mentioned.	Communication varied from non-intelligible speech and limited use of signing to using effective signing and/or intelligible speech.	Two resource classes in a primary school.	(1) Signing class (2) play equipment (3) buddy system	Signing class: 10 minutes daily. Play equipment: introduced range of novel play equipment. Buddy system: hearing buddies who progressed well were asked to try and involve HI child in their activities. Two buddies assigned to each child.
Rasing & Duker (1992)	Multiple baseline across target behaviours.	Nine	8-9:6	Dsyphatic with severe to profound hearing loss. Vocabulary age ranged from 2:5 to 4:3.	Residential facility for the deaf	Looked at turn waiting, initiating interaction and interacting with others. Social skills training and generalisation	Nine 30 minute lessons over five weeks for each skill, using verbal and modelled instructions, discussion of responses.

						procedures using contingent reinforcement. During follow-up, teachers encouraged to continue reinforcement and correction procedures.	Provided with verbal praise and token when showing appropriate example of target behaviour, with thinning schedule of reinforcement. Correcting inappropriate instances of target behaviour.
Study	Design	Participants			Intervention		
		Number	Age	Further Information	Setting	Nature	Details
Rasing (1993)	Multiple baseline across target behaviours.	4 boys and 16 girls	7:1 to 13:9	Severe to profound hearing loss, severe language disabilities and average-above average intelligence. Oral communication was augmented with finger spelling and written language.	Residential school for children of the deaf.	Focused on: greeting, turn waiting, initiating interaction and giving help.	Identical to previous studies (Rasing & Duker, 1992).
Greenberg & Kusche (1993; 1998)	Two group pre-test post-test with wait-list control.	Year 1: 57 (intervention = 29, control = 28)	Grades 1-6 (67-146 months)	Severely and profoundly deaf. Groups did not significantly differ with regard to gender, social class, parent educational attainment, aetiology of deafness, number of additional handicaps, ethnicity, or single/two-parent families.	Self-contained classrooms for deaf children in local elementary schools. Degree to which each child was mainstreamed varied considerably.	PATHS (Promoting Alternative THinking Strategies). Involves role-playing, discussions, art activities, stories, educational games	Daily class programme for 30 minutes and generalised throughout the day. 12 lessons focused on development of self-control, 25 lessons on teaching emotional and interpersonal understanding, 20 lessons on

							interpersonal cognitive problem solving
Study	Design	Participants			Intervention		
		Number	Age	Further Information	Setting	Nature	Details
Suarez (2000)	Pre/post-test quasi experimental design	18 deaf children (and 18 hearing children)	9:1-13:6	16: profoundly deaf, bilateral and prelinguistic and no associated disorder. Other two had severe hearing loss. Generally low on oral skills and sign language	State schools with preferential integration of deaf children	Training programme in two parts, adapted from Segura, Mesa, & Arcas (1997) taught through Total Communication. Focused on behaviours: apologising, negotiating with peers, avoiding problems with others, facing up to group influence, cooperate and share in a group.	(1) Interpersonal problem-solving training programme using cognitive approach for 15 lessons. Taught only to deaf students. (2) Social skills training programme taught in six 1-hour lessons to both deaf and hearing students. Taught through: instructions, modelling, role-playing, feedback and reinforcement, discussion, home activities and generalisation
Kreimeyer et al (2000)	Single subject AB design	Year 1: 2/3/4 grade class with 9 deaf students Year 2: 3/4/5 class with 8 deaf students Year 3: 3/4/5 classroom with 7 deaf students	Information only provided for Year 2: 9-10 years old	Year 2 information: Moderate hearing loss: 2, both bilaterally aided. One using speech and sign, one primarily oral. Severe: 3. unilaterally aided. Two speech/sign, one sign. Profound: 2. One CI and one bilaterally aided. One sign and speech, one sign only	Alternative public school with multi-age classrooms Instructed by two teachers and a speech-language pathologist.	Whole-class approach over September-May for data collection	Sign skill development: daily 10-15min time period of signing only. Deaf students acted as signing mentors. Signing interactions promoted through mixed small group teaching. Instructions and direct modelling for appropriate attention-getting behaviours for hearing students.

							Improving signing skill of teachers
Study	Design	Participants			Intervention		
		Number	Age	Further Information	Setting	Nature	Details
Antia & Kreimeyer (1996)	Pre- and post-intervention measures with comparison group	45 deaf children (25 deaf in social skills intervention and 20 in integrated activities intervention)	4-6 years old	Matched to hearing children for gender and chronological age, normal communication and social skills and good attendance. Social skills: 6 communicated orally, 19 combined. Integrated activities: 10 used oral communication and 9 used combination	Preschool kindergarten and first-grade classrooms in eight public schools and one private school.	Social skills intervention or integrated activities conducted in small groups with approximately half deaf children. Each intervention was conducted for 20 minutes, two or three times a week. Mean number of sessions: 37.	Social skills: modelling and prompting targeted social skills during teacher planned activities, as well as cooperative games and role-play. Generalisation was encouraged by using materials in the classroom. Target behaviours: greeting, sharing materials, assisting peers, refusing peer requests appropriately, conversing, complimenting and praising peers for their product/appearance /behaviour, and responding appropriately to peers' emotions by offering sympathy or comfort. Integrated activities: provide opportunities for children to become familiar with small, stable group of peers. Children participated in

							regular classroom activities that let them interact with each other.
Study	Design	Participants			Intervention		
		Number	Age	Further Information	Setting	Nature	Details
Antia & Kreimeyer (1997)	Two group pre- post-test with follow up.	43 (25 in social skills intervention and 18 in comparison intervention).	2:3 to 6:3 years old (average 4:1-2).	No additional disabilities. Social skills: 6 communicated through spoken and 19 combined. Comparison: 9 through spoken and 9 combined.	Preschool, kindergarten and first-grade self-contained or resource classrooms in eight public school programmes and one private programme.	Social skills intervention (average number of sessions = 36) or familiarity (average number of sessions = 39)	Intervention as in Antia *et al* (1994).

Study	Measures	Results	Reliability	Validity
Avcioglu (2007)	Interviews with students with no disability and class teachers. Observational sessions.	All children learned the target behaviour (100%). Students came together more often at end of study. Students could generalise what they learned. Suggested that children with hearing disability lacked social skills and are not known well enough to start interactions.	Lack of clarity of what sessions involved and how intervention was structured. Lack of detail about observation focus and context. Lack of information concerning hearing impairment.	Lack of information concerning hearing impairment and other participant characteristics. Small sample. Interviews for source of results. No quantitative data to back up results. Lack of baseline data. Fidelity: No checks mentioned.
Antia, Kreimeyer & Eldredge (1993)	Observations in free-play periods (20 minutes) four times during study: before started, after approximately 15 interventions, immediately after intervention ceased, 2-4 weeks after intervention ceased. Looked at: positive/negative, verbal/non-verbal.	Significant difference between interventions: integrated activities children interacted significantly more with each other at Time 2 & 3 than 1. No significant difference found for social skills, although slight upward trend. Interaction of peers with different hearing statuses increased, but not significantly different across treatments. No difference with interactions with same status peers (HI-HI/hearing-hearing) before, during or after, but both increased. Interactions between children with and without HI was primarily non-linguistic. Increase in interaction of children with HI and hearing peers was not due to hearing loss, speech, social and communication development, mode of communication, or chronological age factors. Increase in interaction among children with HI and HI peers was significantly and positively related to chronological age. Familiarity and generalisability of integrated activities. Less reliance in teacher prompting. Have social skills if interacting with children with HI.	Description of intervention. Inter-rater reliability.	Children without HI matched for age and gender acting as controls. Comparing alternative interventions. Some between-group differences on hearing loss (aided and unaided) and speech scores, but not significantly different on Vineland Communication and Social Maturity scores, although attempted to control for these differences in analysis. Different ages and settings. Treatments not randomly assigned (teacher choice). Teachers expected change. Data was taken during free-play with minimal teacher direction. No information taken on amount of contact between children with and without HI in intervention sessions (additional impact cannot be accounted for in outcome). Data collection focused on frequency rather than quality of interactions. Fidelity: No checks mentioned.

Study	Measures	Results	Reliability	Validity
Lemanek, Williamson, Gresham & Jensen (1986)	Role play and observations in 5 minute simulated social interaction with high school student. Looked at: frequency of communication, frequency of open-ended questions, smiling, eye contact, gestures.	Found substantial increases over baseline levels of social skill performance across all subjects, including at follow-up. However, variations were found across individuals for target behaviours. Indirect evidence for generalisation of skills. 11 year old showed largest mean score change and showed improvement on all four target behaviours during treatment and at follow-up.	Description of intervention. Inter-rater reliability.	Behaviours based on criteria obtained from hearing children. Difference between sign language and spoken language – competence depends on which is assessed. To improve social validity – have hearing impaired professionals generate role play situations and behaviours. Lack of predictive validity of role-play on naturalistic situations. Only one data source. Did not look at quality of interactions. Only one source of data. Small sample. Fidelity: No checks mentioned.
Kurkjian & Evans (1988)	The Acceptance Scale (to hearing peers). Sociometric measure.	Group acquired signing skills. No difference between experimental and control groups on Acceptance Scale, but some increase over time. A significant time main effect for the combination of three response types on sociometric measure, but no difference between the two groups. Significant effects for treatment were found for one student on sociometric data and also was involved in significant increase in social interaction with both groups of hearing pupils. At the second time point, a number of experimental subjects indicated being friends with some HI children, but none of the control group made this response.	Intervention described.	Subjects unaware of purpose of study. Possible diffusion of treatment. Some effects only true for some children. Standardised self-report measure. Measures administered to hearing peers, so no measurement for HI children. Small sample. Fidelity: No checks mentioned.

Study	Measures	Results	Reliability	Validity
Fisher, Monsen & Moore (1989)	15 minute observations during lunchtime. Focused on who child associated with, type of social play, use of signing. Teachers asked to record their observations of effects of interventions 1 and 3. Children asked questions about programmes.	Baseline observations indicated that HI children were on average alone or playing exclusively with other HI children for 91% of the time. Across all children, the combined intervention resulted in significant decrease in time spent alone (54% baseline, 43.4% signing, 22.7% equipment, 28.3% buddy). Time spent associating with only other HI children did not vary from baselines except in buddy phase. Non-significant increase in time spent with only hearing children, marked increase in time spent with mixed groups of children. Time spent in solo play varied little across the phases, although individual differences. Cooperative play increased steadily in first two phases and increased non-significantly in final. But between and within-subject variability. Statistically non-significant decline in amount of time children spent unoccupied/watching. Amount of signing increased, but remained steady between HI children except for buddies (caused a reduction). Steady increase of signing with hearing peers across each phase. Nearly all children reported they liked playing with each other some/all the time, including some who had previously disliked it. HI children were confident that hearing children liked playing with them, and 11/18 hearing children felt the deaf children wanted to play with them, 5 said	Inter-observer agreement. Description of intervention principles and observation focus but not skills taught.	Randomly selected pupils from junior and senior classes. Varied participants. Small sample. Possible transitory effect from interventions. Order effects. Comparing means. Notable individual differences. Triangulation of teacher ratings and observations. Suggested generalisation across settings, behaviours and agents. Indications of stability as teacher reports completed some weeks after interventions. Fidelity: No checks mentioned.

		sometimes. With equipment phase, most children listed interactions as what they had enjoyed the most. For buddies phase, a number of children felt sense of requirement to play with the buddy and there were some negative interactions. Teachers reported more spontaneous greetings after signing phase and one friendship that extended into home setting. Also that HI children were less likely to group together, but there were some verbal confrontations. After buddy phase, there were some negative interactions (e.g. rude signs) but as time continued, there was more genuine participation		
Study	Measures	Results	Reliability	Validity
Rasing & Duker (1992)	Observations in settings and contexts chosen by staff for each target behaviour.	Showed increase and generalisation of social behaviours. All children increased their percentages of appropriate instances of target behaviours. Maintenance of training effects found for the two behaviours.	Inter-observer agreement. Observers kept naïve to experimental hypothesis and experimental phase.	Used staff to identify appropriate times to observe target behaviours. Clear descriptions of appropriate and inappropriate examples of target behaviours. Used camera in classrooms prior to baseline phase. 5+ week baseline phase and follow-up phase for two target behaviours. Naturalistic recordings in different settings, during different activities and with different people. Children showed variations in frequency of target behaviours. Possible diffusion of effects across behaviours, or interdependence of behaviours. No data collected with respect to the integrity of independent variable (social validity) Small number of participants. Fidelity: Supervision and feedback of lessons (observe one a week) and for administering reinforcement and correction.

Study	Measures	Results	Reliability	Validity
Rasing (1993)	Observations in settings and contexts chosen by staff for each target behaviour.	Mean percentage of appropriate target behaviours in classroom increased as a function of training and remained above baselines levels during follow-up, although the mean percentage of appropriate greeting declined.	Inter-observer agreement. Replicated and extended previous study.	Social validation questionnaire reported training to be effective in improving performance for greeting and giving help. 4/6 teachers also reported it was effective for turn waiting and initiating interaction. Observers were unfamiliar with finger spelling. Fidelity: See Rasing & Duker (1992).
Greenberg & Kusche (1993; 1998)	WISC-R, Matching Familiar Figures Test, Stanford Achievement Scale Social Problem Solving Assessment Measure-Revised, Kusche Emotional Inventory Teacher reports: Meadow/Kendall Social Emotional Assessment for Deaf Students, Health Resources Inventory, Walker Behaviour Problem Identification Checklist Parent reports: Child Behaviour	No significant difference in overall performance IQ as result of intervention, but in older group there was a significant improvement in Mazes subtest as result of intervention. Non-significant trend on MFFT, with intervention group showing fewer errors. Intervention group showed significant improvement on reading. Intervention group performed significantly better on role-playing, expectancy of outcome and means-end problem solving, as well as number of alternatives generated and increases in prosocial alternatives and decreases in negative and neutral alternatives. Intervention group showed significant improvement on KEI for emotional recognition and labels. MKSEIA showed significant improvement for intervention group on emotional adjustment, and for younger children showed improvement for self-image. No significant difference for social adjustment but all children scored quite highly pre-test.	Intervention clearly described. Teachers varied in their abilities to teach the curriculum, in their motivation and interest and collaborate with consultants.	Heterogeneous sample. Chose measures based on validity for a young deaf population and to look at affect, behaviour and cognition separately. Some measures normed for deaf children. Some measures look for serious disorder or psychopathology. Younger group did not finish intervention before post-test measures. Changed curriculum in Year 2. No control group for wait-list. No comparison group with alternative intervention. Overall teaching style changed. Standardised measures. Possibility of teachers reporting behaviours in socially desirable way. Teachers differed on their interpretation of items and in their tolerance of disruptive behaviours. Training is likely to have changed teachers' expectations and made them more aware of concepts measured. Not possible to get observations. Triangulation from different sources.

	Checklist and Child Behaviour Profile, Eyberg Child Behaviour Inventory	HRI showed significantly different total score, including lower impulsivity for intervention group and for younger children on "gutsy" subscale. WBPIC had floor effect, so no difference. Teacher case studies showed moderate change. Parents: significant difference for social competence for intervention group. No difference on internalising or externalising scales on CBCL or for intensity scores on ECBI. Follow-up: no significant declines on any measure of social-cognition or emotional understanding at two-year follow-up. Significant improvements on some elements looked at. Wait-list control: showed similar gains, including more significant gains in some areas.		Fidelity: consultants met with teachers for 45 minutes a week to answer questions and review up-coming lessons. Consultants observed the teacher during one PATHS lesson a week and provided them with feedback.
Study	Measures	Results	Reliability	Validity
Suarez (2000)	MKSEAI, Children's Assertive Behaviour Scale (teacher and child), sociometric data	Significant differences in 18 of the 21 variables studied across the different measures, including emotional adjustment, social adjustment, self-image (MKSEAI), assertiveness with adults and peers (teacher CABS) and aggressive behaviour, inhibition and thinking (child CABS). No significant difference in assertiveness in self-CABS, academic integration or social integration (sociometric). Significant differences in self-CABS when looking at boys only (girls scored highly at pre-test). Significant improvements on 12/21 variables for more than half the group. In another six variables, total number was also more than half.	Intervention and adaptations described.	No control/comparison group. Standardised measures, including self-report. High variability across group, making generalisation of conclusions difficult. May require longer and more noticeable changes to make difference in sociometric data. Small sample. Fidelity: No checks mentioned.

Study	Measures	Results	Reliability	Validity
Kreimeyer et al (2000)	Observations based on frequency of peer interactions in classroom and at lunchtime. Academic achievement on Stanford Achievement Tests Informal interviews with school principal, class teachers and speech pathologist in classroom.	Interactions in classroom increased between deaf students and their hearing classmates (minimal overlap) and decreases in interaction with deaf peers for at least some of the intervention. One student showed slower increase, possibly due to additional disability. At lunchtime, interactions increased but not to the same level as in the classroom. Interacting with no teachers to prompt or structure interaction. By end of first year, most of hearing students comfortably spoked and signed during class. Conversations occurred in sign 50-60% of the time (teacher reports). Friendships developed first between female students (showed stronger interest in signing). Academic achievement: during both years, several students failed to obtain basal level on some subtests. No significant difference on mean scores for vocabulary obtained by students in co-enrolment and the deaf/hearing normative sample. Significant differences found for reading comprehension. Mostly scored below hearing students. No significant difference for hearing students compared to other hearing peers in classes not including deaf students.	Inter-observer reliability. Unusual school set-up.	Impact of soccer promoting acquisition of signing (extraneous variable). AB design limitations. Short baseline phases. Clear behaviour descriptions for observations. Variations in sample. Small sample. Impact on teachers feeling distanced from other teachers in school. Fidelity: No checks mentioned
Antia & Kreimeyer (1996)	Interactions were videotaped during free-play sessions with no teacher participation (prior to intervention, after intervention and follow-up).	Positive interactions with deaf peers significantly increased for children in social skills group between pre- and post and maintained at follow-up. No change with integrated activities group. Showed generalisation to free-play activities.	Inter-observer agreement. Interventions described.	Group assignment depended on classroom schedule and equal numbers. Teachers told that both interventions were expected to increase social integration of deaf children. Variation in number of intervention sessions. Did not look at quality of interactions.

	Two 4 minute periods a week were filmed. Looked at positive/negative and linguistic/non-linguistic. Social acceptance data obtained (sociometric).	Neither group made gained in interacting with hearing peers. Very few negative interactions at all time points. Increases in positive interactions were primarily non-linguistic. Children with oral communication interacted more frequently and used more linguistic communication with hearing peers than combined. All children used more non-linguistic than linguistic communication with peers. Both interventions increased recognition scores. Social acceptance did not change over time for either group.		Possible lack of sensitivity for sociometric data. Factors believed to affect interaction were controlled for in analysis, but possibility of other factors. No systematic data of interactions during intervention were obtained. Possibility of more time needed to see difference in interacting with hearing peers, either through developing skills further or more time for generalisation, or possible lack of motivation to use more effort to interact with hearing peers. Fidelity: Teachers trained in intervention and intervention sessions were periodically videotaped and researchers provided feedback. Teachers kept logs of activities, which were mailed to researchers.
Study	Measures	Results	Reliability	Validity
Antia & Kreimeyer (1997)	Observations lasting 20mins of free-play sessions before intervention, after intervention ceased, 2-4 weeks after and 1 year after. Behaviours: peer interaction (positive/negative, linguistic), play (non-play, solitary, parallel or associative/	Social skills intervention: decreased solitary and parallel play, engaged in significantly less solitary parallel play than comparison group, engaged in significantly higher levels of associative/ cooperative play than either parallel or solitary play. Pre-intervention equal amounts of all types of play. Social skills intervention did not increase deaf children's positive or linguistic interaction with peers. At one year follow-up, significant decrease in non-play but no changes in other types of play. Associative/cooperative play occurred significantly more frequently than others.	Description of interventions. Clear behaviour descriptors. Inter-observer agreement. Training: manual for procedures and videotape for modelling and prompting strategies (social skills). For comparison intervention researchers assisted teachers in planning first activities and provided feedback on when these were implemented.	No control group. More information on interactions. Different context for final observation. One minute intervals may have underestimated changes in behaviour. No data on complexity of interactions. Did not record the observed child's interaction partner. Possibility that intensity of intervention reduced impact. Similar number of sessions recorded for each intervention (average). Fidelity: periodically videotaped activities and mailed these to researchers, who provided written feedback. Also mailed weekly logs to researchers.

	cooperative), peer initiations/child responses (peer initiation, child positive/negative/ non-response), and child initiations/peer responses (see previous).	Intervention did not change child initiations/peer responses. Peer positive responses to child initiations exceeded peer negative/non-responses. Similar pattern for peer initiations/child responses.		

8.5 Experimental and Null Hypotheses

a) Does CoF improve peer acceptance of primary-aged children with a HI?

   i. Experimental: The weekly CoF intervention will improve peer acceptance of children with a HI, as measured by the Social Inclusion Survey (SIS), in comparison to the baseline phase.

   ii. Null: The weekly CoF intervention will have no impact on peer acceptance of children with a HI. There will be no difference between outcome on the SIS during the baseline and intervention phase.

b) Does CoF reduce peer rejection of primary-aged children with a HI?

   i. Experimental: The weekly CoF intervention will reduce peer rejection of children with a HI, as measured by the SIS, in comparison to the baseline phase.

   ii. Null: The weekly CoF intervention will have no impact on peer rejection of children with a HI. There will be no difference between outcome on the SIS during the baseline and intervention phase.

c) Does CoF improve happiness of children with a hearing impairment?

   i. Experimental: The weekly CoF intervention will improve the happiness of children with a hearing impairment, as measured by the SCHI, in comparison to the baseline phase.

   ii. Null: The weekly CoF intervention will have no impact on the happiness of children with a HI. There will be no difference between outcome on the SCHI during the baseline and intervention phase.

8.6 School Recruitment Letter

[University logo] [Local Authority logo]

School of Psychology
University of Nottingham
University Park
Nottingham
NG7 2RD
Email: _____ [Catherine Paxton: Trainee] _____ [Nick Durbin: Supervisor]
Telephone: _____ [Catherine Paxton] _____ [Nick Durbin]

Date

School address

Dear *Head Teacher*

I am a student at the University of Nottingham, studying the Doctorate in Applied Educational Psychology and currently on placement in the X Educational Psychology Service. As part of my university requirements, I am undertaking a piece of research for a doctoral thesis. The research aims to investigate the impact of Circle of Friends on the social inclusion of children with a hearing impairment. I am therefore writing to ask if you would be willing and interested in me doing the research in your school.

The research will focus on a particular child with a hearing impairment, who is identified by school as needing further support to be socially included. The research will also require a member of staff to be trained in the intervention Circle of Friends.

The Circle of Friends intervention involves an initial whole class meeting, talking about the strengths and issues that the child has, without them being present. Then children are asked to volunteer to be part of the focus child's Circle of Friends. Selected volunteers meet weekly for approximately 20-30 minutes, along with the focus child to review progress, create targets and discuss ways that friends can provide support. This meeting is facilitated by the trained adult.

In order to measure the impact of the intervention, I also will be asking teachers to fill out a Strengths and Difficulties Questionnaire (Goodman, 1997) at the beginning and at the end of the intervention. The children in the class will be asked to fill in a sociometric questionnaire (Social Inclusion Survey, Frederickson & Graham, 1999) related to children that they would like to play with in the class. The focus child will also be asked to fill in a happiness questionnaire (School Children's Happiness Inventory, Ivens, 2007). The study requires that there is a baseline phase, where the child will not be receiving the intervention but the sociometric measures are still taken; this is to ensure that any benefits or otherwise shown can be attributed to the intervention and not other factors.

In line with professional and university ethical guidelines I will need to obtain consent from the parents of the focus child and the other children in the class for data collection. The purpose of the study will be explained to them. I will also seek consent from the children themselves for the intervention and the questionnaire completion. Children and parents

will have the right to withdraw from the study at any time by saying that they wish to withdraw. The information collected as part of the study will be kept anonymously, with no pupils being referred to by name when recording or reporting the results; data collected will also be kept securely and confidentially. After the research has been completed, I will provide feedback staff and parents on the general outcomes of the study and any conclusions drawn.

I would really appreciate your school's support and involvement in this piece of research, and hope that the results will be useful for you and your staff. If you are willing for me to do this research in your school, or would like to ask any questions about the study, please do hesitate to contact me via the details given above.

Yours sincerely

Catherine Paxton
Trainee Educational Psychologist
Nottingham

Nick Durbin
Supervisor, University of

8.7 Information letter and consent form for parents/carers of focus child

[University logo] [Local Authority logo]

Dear Parent/Carer

I am writing to let you know about a research project that X's school is involved in and to seek your consent for him/her to be involved.

The school, with my support, are hoping to introduce an intervention called 'Circle of Friends', and we would like to invite X to be part of that project. X has been identified by school as someone who might benefit from a Circle of Friends. If you are agreeable for X to participate then further consent will be sought from X to ensure that they are happy and willing to be involved in the process.

The Circle of Friends intervention begins with a whole class meeting, focusing on friendships. It is usually best if X, as the child that the pupils are aiming to support, is not present for this first meeting and that the nature of X's difficulties can be discussed with the children. Of course, this will require both your and X's consent. At the end of the class meeting, volunteers will be sought to join X's Circle of Friends. A Circle typically involves 6-8 pupils, which is facilitated by an adult trained (usually the class teacher) in the process and will last for 8 weeks. The other pupils are children who have volunteered to help X. They meet weekly with X, for about 20-30 minutes and discuss what has gone well for X, think of what could be even better for the following week and think of ways to help support X further in school. Further information is also available in the enclosed leaflet.

Previous research on Circle of Friends has been found to be helpful for children. However, the approach has not previously been used with children with a hearing impairment. This research therefore aims to investigate its impact on children with a hearing impairment. If X chooses to be a part of this, s/he will be asked to fill in a questionnaire at the beginning of the research project and again at the end of the end of the intervention about their happiness in school. S/he will be asked to fill in another questionnaire on a weekly basis, as well as the other children of the class, related to children that they would like to play with in the class. In order to monitor the effectiveness of the intervention, the questionnaire will

be completed several times before, during and after the Circle of Friends intervention. You and X's teacher will also be asked to fill in a short questionnaire on his/her behaviour before and after the intervention.

The University of Nottingham and Z Educational Psychology Service support this research. All data gathered for the research will be kept securely, anonymously and confidentially throughout, so that X and Y School cannot be identified in any way. However, it should be emphasised that you or X are free to withdraw from the research at any time should you no longer wish to participate without giving reason. In such circumstances all data and information about X will be removed from the study and destroyed, As part of the research, it would be helpful to gain background information on X, such as information regarding the nature of his/her hearing impairment and any other identified special needs, National Curriculum levels, eligibility for Free School Meals, ethnicity and first language, as well as information from school regarding any previous (or current) interventions focusing on X's social inclusion if you are agreeable and give your consent for this information to be collected.

Once you have read the attached information sheet, I would be grateful if you could complete the attached consent form indicating whether you give your consent for X to participate in the research.

However, in the meantime please do not hesitate to contact me, or my research supervisor, Nick Durbin, using the contact details below if you have any questions about the research or the information provided.

Yours sincerely

Catherine Paxton
[Contact details]

Nick Durbin
[Contact details]

Consent Form

Child's name: _____

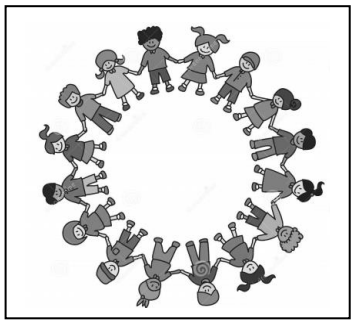
Please tick

I have read the attached letter and attached information sheet and agree for my child to take part in the Circle of Friends project.	
I have had the opportunity to ask questions about the study.	
Any questions have been answered satisfactorily.	
I understand that I am free to withdraw my child at any time without giving a reason.	
I agree for my child to do the questionnaires at the beginning and the end of the project. These are about who my child likes to play with (weekly) and about how happy my child has been at school (at the beginning and the end of the project).	
I agree for the class teacher to do a questionnaire (Strengths and Difficulties Questionnaire my child's behaviour before and after the intervention.	
I agree to do a questionnaire on my child's behaviour before and after the intervention.	
I consent for data to be collected and used for research purposes. This includes background data about my child, including information regarding the nature of his/her hearing impairment and any other identified special needs, educational attainments (National Curriculum levels), eligibility for Free School Meals, ethnicity and first language as well as any previous (or current) interventions implemented focusing on social inclusion for him/her. I understand that all data will be kept securely, confidentially and anonymously.	
I consent for information on his/her hearing and any other identified special needs to be shared with the class during the whole class initial meeting and its impact on his/her performance.	

Signed: _____

Date: _____

8.8 Information on Circle of Friends



What is a Circle of Friends?

It is a group of 6-8 children, including your child, who meet each week, along with a member of staff. Each meeting lasts for about 20-30 minutes.

Why Set Up a Circle of Friends?

It aims to create a support network for your child, so that he/she can cope more easily in school. It also provides him/her with encouragement and recognition of achievements, because the children discuss what has gone well. The children also identify difficulties that your child is experiencing and come up with practical ideas to help overcome them.

The adult is there to help the circle, but the aim is that most of the ideas come from the children.

The circle cannot provide instant friendship, but we hope that it will enable your child to build better relationships with other children.

We cannot guarantee that it will help your child, but Circle of Friends has been quite widely used in Canada, America and the UK. Evaluations in this country have been positive so far, including for children who have had complex difficulties and disabilities. Staff have also found the circles to be worthwhile. Children have often shown improved behaviour and less worry about mixing with their classmates. Volunteers have been found to come up with good, creative and practical ideas and have also been keen to continue being involved in the circle.

How is a Circle of Friends Set Up?

It starts with a whole class meeting, where all the children discuss the strengths and difficulties that your child has. It is best if your child is not present for this initial meeting, but an adult will feedback what was said about them individually. The children will also discuss friendships and how they would feel if they did not have any friends.

At the end of this meeting, the children will be asked if they are interested in being part of the circle, and an adult will explain what this involves. The class teacher will select the group members to set up the circle.

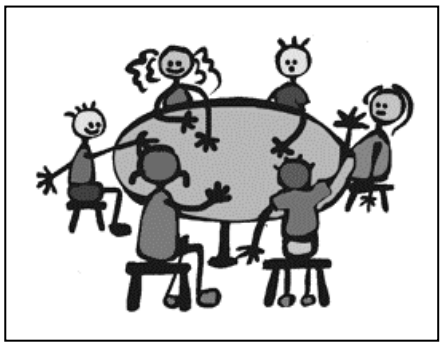
8.9 Information letter and consent form for focus child

[Local Authority Logo]

Dear X

My name is Katie. Your school wants to do a project called Circle of Friends. Your teacher thinks that it might be good for you to have a 'Circle of Friends'. This letter will explain what this is and then you can decide if you want to join in with the project.

What Is A Circle Of Friends?
The idea is that there will be between 6 and 8 other children from your class whose job it is to help you think about how to get the best out of school.

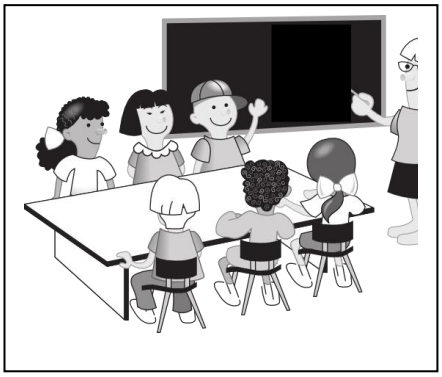


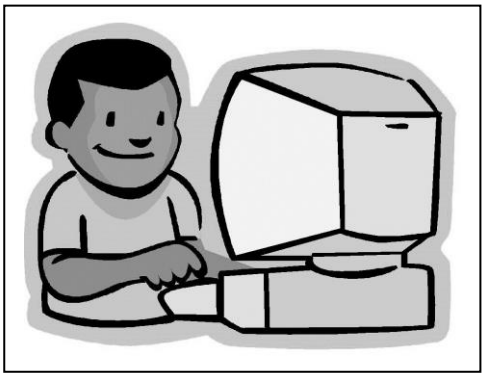
An adult will also be there to help the group.

What Happens?

Before the meetings begin, I would like to come and talk to your classmates while you are doing something else.

They will talk about friendships and how well things are going for you at school. They will also discuss your hearing difficulties, so that the children understand how difficult it can be for you.





At the end of this meeting, I will ask which pupils in your class want to be part of the Circle of Friends. Your teacher will choose some of these children to be part of your circle.

They will then meet with you and adult each week to talk about what has gone well and what could be even better, and help think about how to do that. Each meeting will last about 20-30 minutes and it will go on for 8 weeks.

If you have any questions about this meeting or the Circle, please talk to your teacher.

What Else Will Happen?

As part of my job working with your school, I want to see how well the Circle of Friends goes for you.

This means that you, your teacher, your parent(s) and your classmates will be asked to answer some questions.

There will be a questionnaire for you to fill in at the beginning of the project and at the end. These questions will be about school and classmates.

How Does That Sound?

If you decide that you don't want to be part of the project at any point, you can change your mind. You just need to tell an adult that you don't want to do it anymore.

When I write up the project, I won't use your name or anyone else's name, or the school's name.
If this sounds OK, then can you please answer some questions on the next page. If you want to ask anything, just speak to your teacher at any time.

From

Katie

Consent

Name: _____

Do you understand what a Circle of Friends is?	☺	☹
Have you had the opportunity to ask questions about Circle of Friends?	☺	☹
Were your questions answered?	☺	☹
Do you want to be part of a Circle of Friends and do the weekly meetings?	☺	☹
Do you agree for the initial meeting to happen?	☺	☹
Do you agree not to be there for the initial meeting?	☺	☹
Do you understand that you are going to be filling in some questionnaires?	☺	☹
Do you understand that you can change your mind and not be part of the project at any time without giving a reason?	☺	☹

Please sign your name if you want to be part of the project:

_____

Date: _____

8.10 Information letter and consent form for parents of peers

[University logo] [Local Authority logo]

Dear Parent/Carer

I am writing to tell you about a project that your child's school is involved in, which we are looking to set up in your child's class. The school are hoping to begin an intervention called 'Circle of Friends'. The intervention begins with a whole class meeting, focusing on friendships. At the end of the class meeting, volunteers will be sought for the circle, to support one of their classmates to help them with friendships. This will be done by asking all children in the class to express whether they have an interest in being part of the Circle. It is possible that more children may volunteer than are needed. If this is the case, teachers will choose which children to include in the Circle of Friends. Can you please indicate on the attached form whether you are happy for your child to be a part of that Circle should they choose to volunteer. You are free to withdraw your child from the Circle at any time.

A Circle of Friends is made up of 6-8 children. The meetings are facilitated by a trained adult. They meet weekly with the classmate and the other members of the Circle, for about 20-30 minutes and discuss what has gone well for him/her, think of what could be even better for the following week and think of ways to help support him/her to reach those. Further information can be requested.

The idea has been used in the US and the UK. There have been studies that show benefits for the volunteers as well as the focus child. These include problem-solving and understanding themselves and other people.

Your child, along with other classmates, will be asked to complete a short questionnaire on peer relations each week. The results will be used for research purposes only, to investigate the benefit of the Circle of Friends intervention. The University of Nottingham and Northamptonshire Educational Psychology Service support this research project. All data gathered for the research will remain confidential and anonymised, so that your child and their school cannot be identified. You are free to withdraw your child from the intervention or measures for research at any time.

Once you have read the attached information sheet, I would be grateful if you could complete the attached consent form indicating whether you are agreeable to your child participating in the research.

Please do not hesitate to contact me or my research supervisor using the contact details below if you have any questions about the research or the information provided.

Yours sincerely

Catherine Paxton
[Contact details]

Nick Durbin
[Contact details]

Consent Form

Child's name: _____

Please tick

I have read the attached letter and agree for my child to take part in the Circle of Friends project and complete a short questionnaire on peer relations each week.	
I consent for this data to be used for research purposes and understand that all data will be kept anonymous.	
I understand that I am free to withdraw my child at any time without giving a reason.	
I understand that all information gathered will be kept securely, confidentially and anonymously.	
I consent for my child to be a volunteer within a Circle of Friends to support one of their classmates.	

Signed: _____

Date: _____

Please complete this and return it to the school office as soon as possible.

8.11 Information script and consent form for peers to complete the measures

“My name is Katie. I am working with your school wants to do a project. This will involve you and your classmates filling in questionnaires about friendships and classmates. You will asked to fill in these questionnaires each week for 11 weeks.

If you do not want to do this then you don’t have to. Just don’t sign the form. If you change your mind then you can stop doing the questionnaires at any time. You just need to tell an adult.

Does anyone have any questions?

Please can you ring the smiley faces and sign below if you are happy to do the questionnaires.”

[Local Authority Logo]

Name: _____

I have listened to the instructions.	☺	☹
I have had the opportunity to ask questions about what I am being asked to do?	☺	☹
Were your questions answered?	☺	☹
Do you agree to answer some questions on friendships and classmates?	☺	☹
I understand that I should keep my answers to myself.	☺	☹
I understand that I can change my mind and not do the questionnaires anymore. I just need to tell an adult if I want to stop.	☺	☹

Signed: _____

Date: _____

8.12 Information script and consent letter for peers to participate in the Circle of Friends

"Thank you for expressing an interest to be part of the Circle of Friends. This will consist of 6 weekly meetings that will go on for 20-30 minutes. An adult will be there to help you in the meeting. You will help to come up with ideas to help X in the Circle.

You can change your mind at any time if you decide that you do not want to be a part of the Circle of Friends anymore. All you have to do is tell an adult.

Does anyone have any questions?

Can you please sign that you understand that you can stop being part of the Circle if you want."

[Local Authority Logo]

Name: _____

I have listened to the instructions.	☺	☹
Have you had the opportunity to ask questions about what you are being asked to do?	☺	☹
Were your questions answered?	☺	☹
I agree to volunteer to be part of the Circle.	☺	☹
I understand that I can change my mind and not be part of the Circle anymore. I just need to tell an adult if I want to stop.	☺	☹

Signed: _____

Date: _____

8.13 Debrief letter for school staff

[University logo] [Local Authority logo]

Dear *head teacher/facilitator*

Thank you very much for agreeing to be part of my research. If you or any other members of staff have any questions or concerns about the intervention or research process then please get in touch on:

Email: _____ [Catherine Paxton, Trainee Educational Psychologist] or _____ [Nick Durbin, Supervisor]

Telephone: _____ [Catherine Paxton] _____ [Nick Durbin]

When I have analysed the results, I can come into the school to feedback the findings. I anticipate that I will be able to do this in May or June.

Yours sincerely

Catherine Paxton
Trainee Educational Psychologist
Nottingham

Nick Durbin
Supervisor, University of

8.14 Debrief letter for parents/carers of focus child

[University logo] [Local Authority logo]

Dear _____

Thank you for allowing *your son/daughter* to take part in the research. If you have any questions or concerns about the intervention or research process then please get in touch on:

Email: _____ [Catherine Paxton, Trainee Educational Psychologist] or _____ [Nick Durbin, Supervisor]

Telephone: _____ [Catherine Paxton] _____ [Nick Durbin]

If you would like information on the outcome of the study then please provide me with contact details and I will give you feedback when I have analysed the results in June.

Yours sincerely

Catherine Paxton
Trainee Educational Psychologist
Nottingham

Nick Durbin
Supervisor, University of

8.15 Debrief letter for focus child

[Local Authority logo]

Dear _____

Thank you for taking part in the Circle of Friends intervention. If you want to ask me anything or you have any worries about the Circle of Friends intervention then please talk to *teacher*, who can arrange for me to come and see you, or you can write me a letter and I will write back.

From

Katie

8.16 Debrief letter for peers completing measures

[Local Authority logo]

Dear X

Thank you for completing the questions. If you have any questions or worries about them then please talk to *teacher*, who can put you in contact with me to discuss anything with you.

From

Katie

8.17 Debrief letter for peers participating in the Circle of Friends

[Local Authority logo]

Dear _____

Thank you for being part of the Circle of Friends in your class. If you have any questions or worries about the Circle of Friends then please talk to *teacher*, who can put you in contact with me to discuss anything with you.

From

Katie

8.18 Letter confirming ethical approval

UNITED KINGDOM · CHINA · MALAYSIA

School of Psychology
The University of Nottingham
University Park
Nottingham
NG7 2RD
T: +44 (0)115 8467403 or (0)115 9514344

AS/wb

Ref: 645

Tuesday, 21 April 2015

Dear Catherine Paxton & Nick Durbin,

Ethics Committee Review

Thank you for submitting an account of your proposed research 'Does the Circle of Friends intervention have a positive impact on social inclusion and happiness of children with a hearing impairment?'

That proposal has now been reviewed by the Ethics Committee and I am pleased to tell you that your submission has met with the committee's approval.

Final responsibility for ethical conduct of your research rests with you or your supervisor. The Codes of Practice setting out these responsibilities have been published by the British Psychological Society and the University Research Ethics Committee. If you have any concerns whatever during the conduct of your research then you should consult those Codes of Practice. The Committee should be informed immediately should any participant complaints or adverse events arise during the study.

Independently of the Ethics Committee procedures, supervisors also have responsibilities for the risk assessment of projects as detailed in the safety pages of the University web site. Ethics Committee approval does not alter, replace, or remove those responsibilities, nor does it certify that they have been met.

Yours sincerely

Dr Alastair D. Smith

Acting Chair, Ethics Committee

8.19 Participant information sheet

Year Group	
Class (# of boys and girls)	
Nature of hearing impairment (one/both ears, conductive/ sensori-neural/ mixed, mild/moderate/ severe/profound	
Treatment of HI (e.g. hearing aids/cochlear implant)	
Any other identified special educational needs	
Nature of social difficulties	
Curriculum levels	English (reading): English (spelling/writing): Maths:
Free School Meals?	
Ethnicity and first language	
Previous interventions for friendships/social skills etc. (inc. dates and length)	
Current interventions for friendships/social skills etc. (inc. dates and length)	

8.20 Training Materials for Circle of Friends

Circle of Friends Training

Delivered by Katie Paxton

Introduction

What Is Circle of Friends?

It is a peer support intervention introduced into the UK by Newton, Taylor and Wilson (1996).

Peer support interventions create a way of 'mobilising' peers around a vulnerable young person in order to provide them with support, engaging in problem solving with the vulnerable young person. It aims to give the child support to put ideas into practice, provide them with recognition of achievements and to help the child to build closer and better relationships with other children.

The approach recognises that a child who displays distressed and difficult behaviours is likely to suffer from isolation from their peer group, both in and out of school (Newton *et al.*, 1996). This isolation or rejection can damage the child's sense of self but acceptance and friendship can foster growth and enable the child, in turn, to contribute to the school community to which they belong (Whitaker *et al.* 1998).

Important Considerations

- School (including head teacher and governors) should agree to the value of peer support.
- Need consent from focus child to do intervention.
- Consent from parents of volunteers should be asked for after they have expressed an interest.
- Children need to be aware that they can stop being in the circle at any time.
- Child should be given time to think about it, do not give any false expectations, explain what will happen to lessen anxiety.
- Can also be done without focus child.

What does Circle of Friends Involve?

- Whole class meeting to set up the Circle of Friends.

- Initial meeting of the Circle of Friends to begin process of problem-solving.
- Weekly meetings:
  - Approximately 20-30 minutes.
  - Review targets and strategies from the previous week.
  - Group problem solve to develop future targets and strategies.
- Generally lasts 6-8 weeks.

Whole Class Meeting

Overview

- Should get agreement from parents/carers to undertake the intervention, as well as consent from focus child.
- Should be facilitated by outside adult to show importance of meeting and heighten interest in the meeting. An outside adult can also be objective, not showing alliance with class. Could be head teacher or another teacher instead, for example.
- Lasts 30mins-1hr.
- Focus child agrees not to be present (on consent form).
- Diagnosis may be shared with the class with agreement from parent and focus child.
- Record responses in children's own language.
- Resources required:
  - Flip chart paper;
  - Different coloured pens;
  - Concentric circles (see handouts).

Structure

1. Introduction: aim to discuss behaviour of focus child and think of ways that he/she can be helped by the class.
   - Professional explains involvement with focus child.
   - Explain interest in how children get on with each other and how they can help each other.

- Explain that this is unusual to talk about focus child without them there, but that they know the meeting is happening. However, we need their help to think of ways to support Child X and the insight of the children is valued.

2. Establish ground rules at beginning and reiterate. E.g.
    - Confidentiality (everything said in the lesson is private);
        - Can talk about it with other members of the class, but not use names of who said what outside meeting.
        - If children hear anyone forget this, should tell teacher or tell child to remember that it is private to their group.
        - Applies to adults too.
    - Non-judgemental;
    - Honesty;
    - Open but fair;
    - Listen to each other, respect.
3. Write up positive things about the child (good at, does well at, nice things about Child X...)
4. Write up things that the children find difficult about the child (behaviours, describe sort of person Child X is).
    - Will have heard some things but not everything.
5. Describe four circles of friends. Ask children who would be in their circles. Encourage reflection of richness and diversity of relationships in their lives. Emphasise quality rather than quantity of relationships. Encouraged to reflect on richness and diversity of relationships.

    - Circles:
        - Circle of intimacy: people closest to us, e.g. family.
        - Circle of friendship: friends and close relatives. People we would confide in and expect to support us.
        - Circle of participation: people we see regularly and may 'hang out' with but may not see often.
        - Circle of exchange: people who are paid to be in our lives, e.g. teachers, doctors.

- Can do it in different ways. E.g. each child does one, discuss an example from one pupil, encouraged to think about circles as the diagram is explained.

6. Ask children ‘how would you feel if they had no friends?’, i.e. ‘what would it be like if... Circles 2 and 3 had no one in them?’. Give children time to think.

    - Facilitator can pretend to have the feelings using identifying pronouns and low tonality (e.g. drop voice, slow breathing, look at all pupils, stand still) to read through list to the class. Children are often visibly affected by this.

    - Compare to flip chart of Child X’s difficulties.

7. Ask children ‘how would you behave if you had those feelings?’

8. Ask children ‘do you think that Child X feels like this sometimes? Could it be that he/she does the things you don’t like because he/she has no friends?’

9. Ask children ‘what could we do to help Child X?’ and ‘what is unhelpful for Child X?’ (what have they seen others do). Looks at providing pupil with friendship and developing ways to keep them on track with their behaviour. E.g. welcome him, invite to play games, tell him to stop doing something, help with work.

10. Invite children to help Child X.

    - Explain that you have heard about an idea called ‘Circle of Friends’ and are looking to set up a group to help with Child X’s difficulties.

    - Explain it will involve weekly meetings to problem solve and set targets and discuss strategies.

    - Say that you need 5-7 volunteers for the Circle of Friends, but there is no pressure to want to be part of it and it will be kept confidential who else volunteered.

    - Best way to get volunteers is to use slips of paper with names on and write ‘yes’/’no’.

    - Explain that not everyone will be able to do it, but may need more people at a later date, everyone can take responsibility for helping.

    - The Circle should include children who are not always seen as good by adults – emphasise that everyone can help, sense of shared responsibility.

    - Volunteers (6-8 pupils) for the CoF are sought, but not chosen by focus child.

    - Write letter to parents explaining that their child has volunteered.

Why Do Initial Meeting?

- Important and a relief to voice concerns.
- Concerns are taken seriously (valued by adult).
- If children see it's 'not just them' – take behaviour less personally.
- Less blaming of the focus child:
  - Shift perceptions (child not being 'bad' but trying to cope) by developing understanding with Child X's situation.
  - Promote empathy.
  - Try to help.
- Can focus on issues raised in discussion in Circle meetings with volunteers.

Circle Meetings

Set Up

- Prepare focus child for meeting, individually before session. Discuss what was said in meeting so that they are not surprised or shocked.
- Private room/area. Should be familiar to pupils so that they feel comfortable.
- Big enough for group to sit in a circle.
- Provide allocated time, regular slot.
- Adult who is familiar to children should be chosen to facilitate. This adult should facilitate all meetings.
- Prepare focus child (e.g. tell them the time).
- Soon after whole class meeting.
- Remind of right to withdraw at any time without giving reason.
- Choosing volunteers:
  - May include children with high social status.
  - No more than two children who would benefit from peer support.
  - Volunteers chosen should be a mixture between more able pupils and those with some difficulties.

- Staff to make informed choice of who to have in circle from those who volunteered.

Structure

Facilitated by an adult (scribes), with volunteers and focus child.

1. Introductions.
2. Establish ground rules (as before) and roles e.g. chairperson. Remind of right to withdraw.
3. Agree aims, i.e. why we are here. E.g.
    - To help Child X make and keep friends, support Child X.
    - To help Child X get back on track with his/her behaviour.
4. Ask each child to volunteer the reasons why they wanted to be part of this group.
5. Ask group to list positives about Child X and Child X can add their own.
    - Remind that Child X was not present for the whole class meeting.
6. Ask group to list things/areas that Child X needs to work on and Child X can add their own after.
    - Avoid this list being too long. Focus on situations, rather than deficits or personality traits.
    - Explain to the focus child that this may just be something that that one individual has experienced or felt and is not necessarily true. They should not be surprised if they do not agree.
    - Ask for descriptions of behaviour and turn them into a positive behaviour target. Talk about what would be different if Child X achieved those targets, for Child X and others.
7. Problem solving 1 or 2 targets at a time:
    - Group (including Child X) discuss what targets to work on.
    - Avoid suggestions that require input from people outside of the Circle as much as possible.
    - Ideas can be developed and expanded upon.
    - Consider consequences if they could be counter-productive.

- Discuss ideas about ways to get to target (strategies), both things that Child X can do and things that other children can do.
- Jointly select ideas and help group spell out steps.
- Get commitment from group (especially the focus child), agree responsibilities and boundaries (emphasise that Child X is responsible for his/her own behaviour).
- Emphasise realistic expectations e.g. speed of change, set backs.

8. Name the group (not including name of Child X) and arrange next meeting. E.g. The Helpful Group, The Eclipse Group, The Listening Group. Final selection should be made by focus pupil.

9. Remind of follow-up arrangements (e.g. next meeting place and time, checking availability) and encourage support of group at close of meeting by summarising good things.

10. Talk to focus pupil to see how they found it and assess the impact of the meeting on them.

Why?

- Build relationships.
- Create shared sense of responsibility and purpose.
- The children should have ownership: adult should facilitate rather than control/lead.

Subsequent Circle Meetings

- Important to involve Child X at all stages e.g. feelings about good and bad news and feelings about strategies.
- May want to have something to show which person is talking, such as a stick/toy.

Structure

1. Reminder of rules and right to withdraw.
2. Play warm up game (problem solving activities/turn taking games).

3. Good news:
    - Situations that went well (involved in or witnessed).
    - Get descriptions about what Child X said and did and how participants felt.
    - Ask for successes towards reaching targets.
4. Bad news (rename without word 'bad', such as 'difficulties'):
    - Share difficulties towards reaching targets.
    - Discuss solutions, adapt/change strategies.
    - Any other problems.
5. Target setting:
    - More of the same, different means to the same end, or a new target.
    - Discuss solutions if not already covered.
    - Plan detail and agree responsibilities and actions.
    - They can also involve an element of role play to practice particular behaviours.

Warm-Up Games Examples

<u>Whole Group Activities</u>

- Write down anything on your mind that might get in the way of joining in with the meeting, e.g. worries outside, concerns about focus pupil. Then scrunch up the piece of paper and throw away.
- Rhythm master: Everyone sits in a circle and choose someone to be the detective. Ask the detective to close their eyes while the rhythm master is chosen. The rhythm master then starts doing actions which everyone follows, for example clapping their hands or clicking their fingers. When everyone is doing the actions, ask the detective to open their eyes and try to guess who the rhythm master is. If they guess correctly the rhythm master then becomes the detective and a new rhythm master is chosen. If the detective guesses incorrectly the rhythm master can then choose a new detective and a new rhythm master.
- Electric squeeze: teacher and children stand in circle with linked hands. The teacher squeezes the hand of the child on one side and this is passed around. Repeat to improve speed at which squeeze travels. Could also do in a Mexican wave style, or to produce ripple effect.

- Pass the smile: Everyone sits in a circle. The first person turns to the person on their right and smiles, that person turns to the next and passes the smile around the circle. This activity could be repeated with different facial expressions. Can also be done with passing on handshake or pat on the back, for example.

- Similar to ‘pass the smile’, get children to say someone’s name before throwing a soft ball to that person. Children have to pay attention and listen for their name to be called.

- Bunnies: Ask the children to sit in a circle. Demonstrate putting both hands up to your head like ears, to demonstrate that you are the `bunny'. The child to your right raises their left hand to their head to make one ear and the child to their left raises their right hand to make the other. The bunny can pass the bunny role to another person in the circle by looking them in the eye and then taking their hands from their head and pointing towards the new bunny. Those to the left and right of the original bunny must drop their hands and those to the left and right of the new bunny must put their hands up to their heads as in the first example. The aim is not to make any mistakes.

- Tomato ketchup: Choose one person to be the detective. Ask the detective to close their eyes while you point to a member of the group. This person has to say 'tomato ketchup' in a silly or disguised voice. Ask the detective to open their eyes and guess who spoke. If the caller does not guess correctly, the person who said 'tomato ketchup' becomes the caller.

- Key thief: Ask the children to sit in a circle with one chair in the middle. Choose a detective to sit on the chair in the middle with a set of keys placed under the chair. Ask the detective to close their eyes. Choose a person to try and creep round the circle and pick up the keys without making a noise. The detective can catch the person creeping round the circle by pointing in their direction. If the person creeps round the circle and picks up the keys without being detected they win or become the detective (if time).

- Ring on a string: Thread a ring onto a long piece of string and tie the ends together to make a circle. Everyone stands in a circle holding a section of the string with both hands. Choose someone to stand in the middle of the circle and be the detective. Ask the detective to close their eyes while the children start passing the ring around the circle. Ask the detective to open their eyes and watch as the children in the circle try to move the ring around the circle without the detective in the middle spotting it. Children can `fake' pass the ring to each other. Ask the detective to guess where the ring is. Each detective has two guesses, before another detective is chosen.

- Wink freeze: Choose one person to be the detective. Ask the detective to close their eyes while a winker is chosen. They will signal to other children to freeze by winking. Ask the children to walk around the room and the winker to wink at the other children as subtly as they can. The detective has to guess who the 'winker' is. If the detective does not guess correctly, the winker becomes the detective.

- Turn taking games: e.g. charades (individual or group, e.g. occupations, tasks like clearing table, washing up, cooking, sequential tasks like putting up tent), guess what I am (post it notes, pictures, encouraging the children to ask each other questions); fiddle sticks (pick up sticks); Jenga.
- Chinese whispers or Chinese mimes (children close eyes while one child is mimed to).
- Word association games, or alphabet games (e.g. shopping list, describing a character with adjectives).
- Holding a rope tied in a circle shape and use to make shapes, express emotion words or inclusive concepts such as 'harmony' and 'peace'.
- Trust games or exercises using words or physical activities.
- Simple drama exercises based on supportive listening or trust.

<u>Discussion Activities (Involve listening, develop communication)</u>

- Divide circle into pairs to share one negative and one positive thing that has happened to them this week.
- 1 minute of listening to a partner talking about themselves or a topic of their choosing.
- Sharing hobbies and interests.
- Discuss something that you have done well/ How did you do it? Have you always been good at it? How have you improved?
- Discuss positive things recorded from the Circle of Friends sessions.
- Discuss what makes a good friend, share ideas, play friendship game.

<u>Problem Solving/Cooperative Games (may take more time)</u>

Groups:

- Practical problem solving activities e.g. build a free-standing tower out of paper, string and scissors; as a group get across the room standing on only two carpet squares; link hands and try and untangle the human knot without letting go; build a structure with their bodies in groups of 4 (e.g. a bridge, a tree, a bicycle) and demonstrate to others.
- Brainstorm scenarios and role play e.g. discussing emotions: discussing how people act, what they look like; what would you do if you were stuck on your homework? How would you feel? What would you do?; what would you do if you had nobody to spend break with? How would you feel? What would you do?; you see a child alone on the

playground. How may they feel? What can you do?; Nobody wants to sit next to you in a lesson. How do you feel? What can you/others do?

  - OR each group is given a simple story problem, which they solve with each group member playing a part. Stories can increase in complexity according to the age of the children, e.g. you are in town when you see a small child all alone and crying. You are on a ramble when one of your group falls and hurts her ankle and cannot walk any further.

  - OR as above but one member is given the problem whilst the others have to help him/her solve it.

- From given apparatus, groups of 4 children construct and decide upon rules for using a simple obstacle course, and demonstrate this to the other groups before taking turns to use it.

- Older children in groups of 4 or 5 form a factory production line. They decide upon a product and a sequence of tasks which will combine to make it. They have an agreed time in which to practise the actions. Each group they performs its mimes, with each member giving a commentary.

- Children in large inward-facing circle. At teacher's command, form groups of 4 by linking arms. Retain circle shape, then move, still in group, to opposite side of circle (also groups of 5 or 6).

- Sheets of newspaper or small hoops placed on floor. Children walk around islands until told to occupy them (or to music, which stops). They help each other to remain on the islands as more and more are removed, until it becomes impossible for all children to fit.

Paired activities:

- Children devise as many ways as possible of both occupying one chair with feet off the ground.

- Need pictures of pairs of objects (e.g. brush and comb), enough for each child to have one card. Cards shared at random, children find and sit beside partner.

- Children sit in pairs, back to back, legs outstretched and arms linked at elbows. Try to help each other to stand.

- Children sit face to face, feet touching, holding hands, try to pull each other up to standing position.

- Teacher calls number. Each pair must touch the floor with that number of points. Can be used in groups of 3 or 4.

- Teacher makes simple obstacle course. One partner is blindfolded and is led across it by another.

Larger groups/whole class activities:

- Children sit in circle, 5 children stand in the middle. They are the 'pins'. On teacher's command, 'pins down' these children may sit down and others stand, but there must always be 5 children standing.
- Children stand in inward-facing circle, eyes closed. They move forwards slowly, arms outstretched and join hands. When all are joined, they open their eyes and try to form a circle without releasing their grip.
- Children stand in a circle and then make a quarter turn so each faces the back of the child in front. The teacher moves the circle inwards, then each child grasps the waist of the child in front. All try to sit on the lap of the child behind until all are seated. Discuss ways of improving the outcome then try again.

Circle Facilitator Skills

What Does The Facilitator Do?

- Provides safe place to talk and explore feelings and ideas
- Contains discussion.
- Encourages mutual support, trust, honesty and openness among the group members.
- Ensures that all children get to opportunity to talk.
- Build the esteem of the focus child and volunteers.
- Need to ensure that focus child feels listened to, supported, included, accepted and cared about and that people want to help.
- If any safeguarding concerns are raised, they need to be passed on through school. Will need to mention with regards to confidentiality.

How Does The Facilitator Do This?

- Watch and listen to the members of the Circle, e.g. for difficult relationships, children who feel hurt.
- Provide rich positives and praise.
- It may be helpful to use humour to lighten the situation.

- Support children if they express strong emotions in reaction to something said, such as dealing with their sense of responsibility or reactions to hurtful remarks/situations.
    - If the pupils need to have a rest or period of time-out due to tiredness, upset or other reasons, adult facilitator should allow this.
- Steer conversation away from unexpected or unhelpful directions, e.g. child dominating conversation, insensitive comments, supporting another child in circle:
    - Challenge when pupils have broken the rules quickly, including direct attacks on other members of the Circle.
    - Adult resumes control;
    - Identify what is happening;
    - Re-negotiate direction and goals of circle: refer back to aims of Circle.
- Intervene if targets appear unrealistic/unattainable.
- May need to negotiate with staff regarding strategies decided upon (are they acceptable and supported?).
- May decide to meet without focus child (e.g. if focus child is giving relatively little back to the group or actively rejecting support).
- May get children to meet to review more regularly.

Support

Name: Katie Paxton

Email address: _____

Office number: _____

- Will provide support for intervention and undertaking measures.
- Regular contact with schools, which can be done by email, phone or in person depending on facilitator preferences and needs.
- Follow-up check regarding the circle meetings through observation.
- Can be contacted for any reason, e.g. worries about pupils, pupils have said they felt uncomfortable about Circle and/or measures, questions about facilitating Circle, child/parent has chosen to withdraw from research (to destroy data) to discuss next steps or ask for advice.

- Fidelity check for facilitators for each session.

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8.21 Treatment Fidelity Checklists

Initial Meeting

Feature	Present?	Comments
Focus child present		
Circle volunteers present (please note any absences)		
Circle facilitator present (please note if different facilitator)		
1. Introduction		
2. Establish ground rules		
3. Agree aims		
4. Ask children to explain why they volunteered		
5. Ask children to list positives about focus child		
6. Ask children to list things/areas focus child could work on, focusing on description of behaviour: what was said/done, where, possible reasons)		
7. Targets were set		
Strategies for working towards targets discussed		
Agreed actions and responsibilities		
8. Name the group		
9. Remind of follow up arrangements		
Summarise good things about meeting and encourage support		
10. Talk to focus pupil to find out what they thought of the meeting and assess impact on them		

Subsequent Meetings

Feature	**Present?**	**Comments**
Focus child present		
Circle volunteers present (please note any absences)		
Circle facilitator present (please note if different facilitator)		
1. Reminder of rules and right to withdraw		
2. Warm up game		
3. Discussed 'what went well' (i.e. good news, description of behaviour: what was said/done, where, possible reasons)		
Discussed feelings around situations.		
Related 'what went well' to targets/discussed previous targets		
4. Discussed difficulties (not assigning blame)		
Blockages were discussed		
Solutions to blockages were discussed		
5. Targets were set		
Strategies for working towards targets discussed		
Agreed actions and responsibilities		
6. Summarise and conclude meeting on positive note.		

8.22 Social Inclusion Survey (Frederickson & Graham, 1999)

SOCIAL INCLUSION SURVEY (SIS)

INSTRUCTIONS TO THE CLASS

NFER-NELSON

Prepare and hand out the two questionnaires with the 'work with' sheet on top.

Say: *We are going to complete some questionnaires about how pupils of your age get along with each other at school. There are no right or wrong answers, you just have to put what you think. These questionnaires ask about how you get along with other people at school and I know that this is quite a private thing, so I will be careful to keep your questionnaires private. It is very important that you keep them private as well. That means not looking at your neighbour's questionnaire to see what they are putting and not talking about what you have put, now or afterwards. Does everybody understand that?*

Look down the side of the first sheet of your questionnaire and you will see that it has got the names of everyone in this class in the order they come in the register. Now, if you look across the top it says, 'How much do you like to work with each person at school? Opposite each person's name there are four little circles. The second circle has got a smiling face and you are going to tick that circle if it is the name of somebody who you like to work with at school. The third circle has got a straight-mouthed face and you are going to tick that circle against the names of people if you don't mind whether you work with them or not. The last circle has got a sad face and you are going to tick that circle if it is the name of someone who you prefer not to work with at school. We all have different people that we like to work with at school, that we don't mind whether we work with them or not and that we prefer not to work with. The first circle has got a question mark in it and you are going to tick that circle if it's the name of someone who you don't know well enough to decide how much you like to work with them at school.

Turn over now and look at the next sheet. This time the question at the top says, 'How much do you like to play *(or substitute with the term used) with each person at school?'. So this time you have to tick the circles just like the page before but now it's to show how much you like to (play) with each person at school.*

Before we start I would like everyone to find their own name on the 'work with' questionnaire and cross it out, then find your own name on the 'play with' questionnaire and cross it out. [This allows pupils completing each questionnaire to be identified without having to write their name on it. Check this has been done as you collect them in.]

In a minute, I will ask you to start and I want you to go carefully down the 'work with' list showing how much you like to work with each person at school. Tick the question mark if it is someone that you don't know well enough to decide how much you like to work with them, tick the smiling face if it's the name of someone you like to work with, tick the sad face if it's the name of someone you prefer not to work with and tick the straight-mouthed face if it's someone you don't mind whether you work with them or not. Make sure that you haven't missed anybody out and then turn over the page and go carefully down the 'play with' list, ticking to show how much you like to play with each person at school.

If you can't make out any of the names, just put up your hand and I will tell you who it is. Also remember to keep your questionnaires private.

Social Inclusion Survey (SIS)

How much do you like to .... with each person at school?

	?	☺	😐	☹
	?	☺	😐	☹
	?	☺	😐	☹
	?	☺	😐	☹
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8.23 School Children's Happiness Inventory (Ivens, 2007)

THE SCHOOLCHILDREN'S HAPPINESS INVENTORY

GL assessment
the measure of potential

Name ..... Date .....

Age ..... Class ..... Please circle: Male / Female

During the last week in school:		I agree		I disagree	
		A lot	A little	A little	A lot
1.	I had lots of energy.				
2.	I was nervous.				
3.	I wanted to come to school.				
4.	I was cross.				
5.	I was sad.				
6.	I felt relaxed.				
7.	I felt ill.				
8.	I felt that school was a safe place.				
9.	I concentrated.				
10.	I felt sick.				
11.	I felt positive.				
12.	I felt angry.				
13.	I wanted to cry.				
14.	I got on well with everyone.				
15.	I was in a bad mood.				
16.	I enjoyed myself.				
17.	I was tired.				
18.	I felt calm.				
19.	I was interested in working.				
20.	I felt sorry for myself.				
21.	I felt good.				
22.	I was confused.				
23.	I was confident.				
24.	I felt upset.				
25.	I wanted to give up.				
26.	I felt wide awake.				
27.	I had headaches.				
28.	I worked well.				
29.	I was frightened.				
30.	I liked being with other people.				

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8.24 Strengths & Difficulties Questionnaires (Goodman, 1997)

Parent SDQ

Strengths and Difficulties Questionnaire P 4-17

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of the child's behaviour over the last six months.

Child's Name ..... Male/Female

Date of Birth.....

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	☐	☐	☐
Restless, overactive, cannot stay still for long	☐	☐	☐
Often complains of headaches, stomach-aches or sickness	☐	☐	☐
Shares readily with other children (treats, toys, pencils etc.)	☐	☐	☐
Often has temper tantrums or hot tempers	☐	☐	☐
Rather solitary, tends to play alone	☐	☐	☐
Generally obedient, usually does what adults request	☐	☐	☐
Many worries, often seems worried	☐	☐	☐
Helpful if someone is hurt, upset or feeling ill	☐	☐	☐
Constantly fidgeting or squirming	☐	☐	☐
Has at least one good friend	☐	☐	☐
Often fights with other children or bullies them	☐	☐	☐
Often unhappy, down-hearted or tearful	☐	☐	☐
Generally liked by other children	☐	☐	☐
Easily distracted, concentration wanders	☐	☐	☐
Nervous or clingy in new situations, easily loses confidence	☐	☐	☐
Kind to younger children	☐	☐	☐
Often lies or cheats	☐	☐	☐
Picked on or bullied by other children	☐	☐	☐
Often volunteers to help others (parents, teachers, other children)	☐	☐	☐
Thinks things out before acting	☐	☐	☐
Steals from home, school or elsewhere	☐	☐	☐
Gets on better with adults than with other children	☐	☐	☐
Many fears, easily scared	☐	☐	☐
Sees tasks through to the end, good attention span	☐	☐	☐

Do you have any other comments or concerns?

Please turn over - there are a few more questions on the other side

Overall, do you think that your child has difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

No	Yes- minor difficulties	Yes- definite difficulties	Yes- severe difficulties
☐	☐	☐	☐

If you have answered "Yes", please answer the following questions about these difficulties:

• How long have these difficulties been present?

Less than a month	1-5 months	6-12 months	Over a year
☐	☐	☐	☐

• Do the difficulties upset or distress your child?

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

• Do the difficulties interfere with your child's everyday life in the following areas?

	Not at all	Only a little	Quite a lot	A great deal
HOME LIFE	☐	☐	☐	☐
FRIENDSHIPS	☐	☐	☐	☐
CLASSROOM LEARNING	☐	☐	☐	☐
LEISURE ACTIVITIES	☐	☐	☐	☐

• Do the difficulties put a burden on you or the family as a whole?

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

Signature ..... Date .....

Mother/Father/Other (please specify:)

Thank you very much for your help

© Robert Good

Teacher SDQ

Strengths and Difficulties Questionnaire

T 4-17

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of the child's behaviour over the last six months or this school year.

Child's Name ..... Male/Female

Date of Birth.....

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	☐	☐	☐
Restless, overactive, cannot stay still for long	☐	☐	☐
Often complains of headaches, stomach-aches or sickness	☐	☐	☐
Shares readily with other children (treats, toys, pencils etc.)	☐	☐	☐
Often has temper tantrums or hot tempers	☐	☐	☐
Rather solitary, tends to play alone	☐	☐	☐
Generally obedient, usually does what adults request	☐	☐	☐
Many worries, often seems worried	☐	☐	☐
Helpful if someone is hurt, upset or feeling ill	☐	☐	☐
Constantly fidgeting or squirming	☐	☐	☐
Has at least one good friend	☐	☐	☐
Often fights with other children or bullies them	☐	☐	☐
Often unhappy, down-hearted or tearful	☐	☐	☐
Generally liked by other children	☐	☐	☐
Easily distracted, concentration wanders	☐	☐	☐
Nervous or clingy in new situations, easily loses confidence	☐	☐	☐
Kind to younger children	☐	☐	☐
Often lies or cheats	☐	☐	☐
Picked on or bullied by other children	☐	☐	☐
Often volunteers to help others (parents, teachers, other children)	☐	☐	☐
Thinks things out before acting	☐	☐	☐
Steals from home, school or elsewhere	☐	☐	☐
Gets on better with adults than with other children	☐	☐	☐
Many fears, easily scared	☐	☐	☐
Sees tasks through to the end, good attention span	☐	☐	☐

Do you have any other comments or concerns?

Please turn over - there are a few more questions on the other side

Overall, do you think that this child has difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

No	Yes-minor difficulties	Yes-definite difficulties	Yes-severe difficulties
☐	☐	☐	☐

If you have answered "Yes", please answer the following questions about these difficulties:

• How long have these difficulties been present?

Less than a month	1-5 months	6-12 months	Over a year
☐	☐	☐	☐

• Do the difficulties upset or distress the child?

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

• Do the difficulties interfere with the child's everyday life in the following areas?

	Not at all	Only a little	Quite a lot	A great deal
PEER RELATIONSHIPS	☐	☐	☐	☐
CLASSROOM LEARNING	☐	☐	☐	☐

• Do the difficulties put a burden on you or the class as a whole?

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

Signature ..... Date .....

Class Teacher/Form Tutor/Head of Year/Other (please specify:)

Thank you very much for your help

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8.25 Pilot Study Results and Discussion: Child X

Participant

Child X was in Year 5 with bilateral profound sensorineural hearing loss. He became deaf as a complication from meningitis. Child X was fitted with two cochlear implants when hearing aids proved ineffective: one when he was 18 months old and the second when he was 6 years old. He had a Statement of Special Educational Needs and received 25 hours of TA support every week. Staff also use a sound system and microphone in school.

Child X was in a class of 25 pupils. The parents of twelve pupils gave their consent to participate in the measures. Seven of these children were chosen to be in the Circle, three girls and four boys.

Results

Social Inclusion Survey

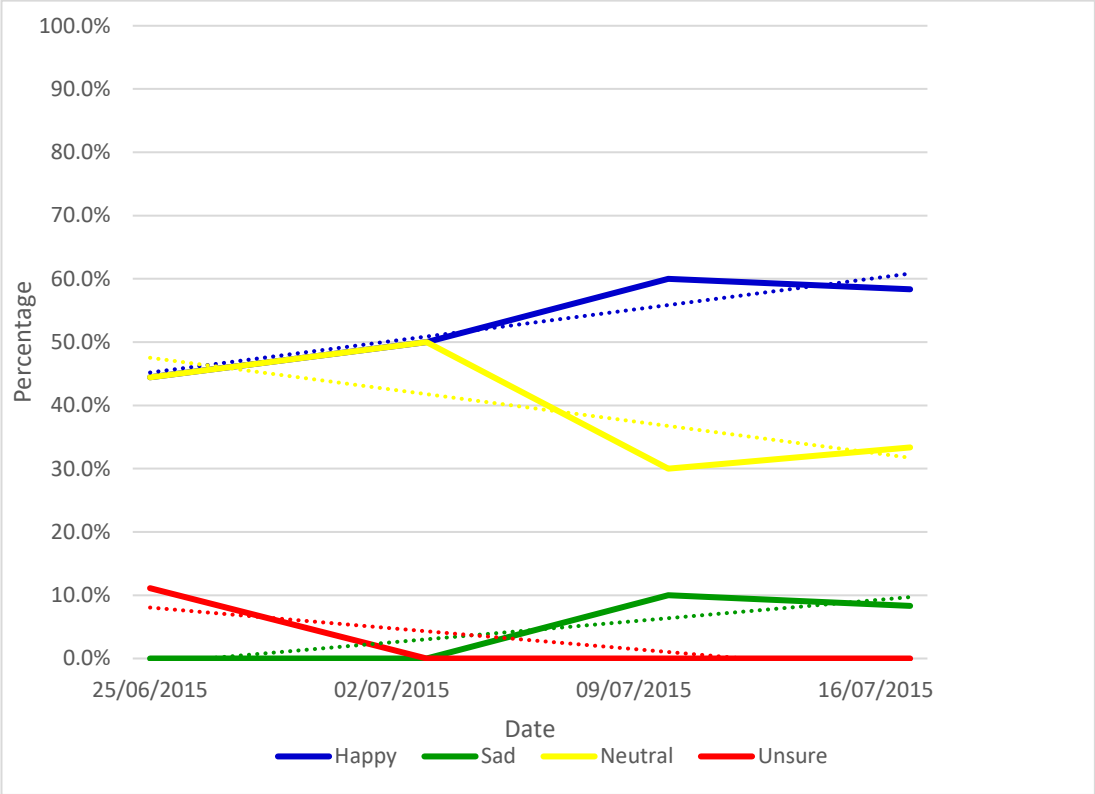

Figure 8-1 A line graph to show the percentage of Social Inclusion Survey ratings given for Child X by peers over time (by week)

Parent SDQ

	Pre-Intervention		Intervention	
	Score	**Description**	**Score**	**Description**
Overall stress	9	Average	12	Average
Emotional distress	0	Average	1	Average
Behavioural difficulties	0	Average	0	Average
Hyperactivity/ concentration	6	Slightly Raised	6	Slightly Raised
Difficulties getting on	3	Slightly Raised	5	Very High
Kind and helpful	5	Very Low	3	Very Low
Impact of difficulties	1	Slightly Raised	6	Very High

Teacher SDQ

	Pre-Intervention		Intervention	
	Score	**Description**	**Score**	**Description**
Overall stress	16	High	6	Average
Emotional distress	2	Average	0	Average
Behavioural difficulties	1	Average	0	Average
Hyperactivity/ concentration	8	High	4	Average
Difficulties getting on	5	Very High	2	Average
Kind and helpful	0	Very Low	6	Average
Impact of difficulties	4	Very High	1	Slightly Raised

School Children's Happiness Inventory

Child X completed the SCHI on the day of the whole class meeting. His standardised score was 106. At the end of the intervention, Child X's score was 100, but he mentioned that he was sad to be leaving Year 5, as it was completed at the end of term.

Discussion

There are discrepancies between the results before the intervention phase from the Parent and Teacher SDQs. Child X's difficulties seem to be more prevalent at school. However, after 3 weeks of the intervention, the difficulties at school were significantly reduced according to the scores. The Parent SDQ showed little change, except in two of the sub-scales, where the results worsened. However, anecdotal evidence suggests that parents did not feel that Child X had got worse in these areas, and they were encouraged by the results. For the SCHI, there was a slight decrease in Child X's score post-intervention, but this could be due to him being sad that he was leaving Year 5.

The SIS data showed an overall slight increase in peer acceptance (the 'happy' face), although there was a slight increase in peer rejections (the 'sad' face). The decrease in neglect (the 'neutral' face) is positive, as is the decrease in peers being unsure (the question mark). However, there are limitations with the data: only approximately 1/3 of the class completed the measures, and this number was not the same each week (9 for the pre-intervention measure, 10 for Weeks 1 and 2, and 12 for Week 3).

8.26 Notes From Whole Class Meetings

	Good Things	Difficulties
Child A	Kind Nice friend Doesn't hurt anyone's feelings Not selfish, shares Happy Plays with others Always wants to play Will help people who are hurt Friendly Comes to you when you are sad	Hearing May miss learning May not hear everything that has been said Can't come outside if it rains May not realise she has interrupted you Might find it trickier to understand
Child B	Nice to everyone Helpful Fun to be around Makes people laugh Good friend Clever Lets people play Funny	Can't hear Finds it difficult to speak Gets upset Quiet voice Shy Sometimes walks away
Child C	Sensible Works hard	Hearing Running
Child D	Kind Good at English Helpful Imaginative Confident Likes to play Jokes/funny Always happy Creative Takes part Polite Friendly	Forgetful Can't join in with sports Steps back Shy Afraid to ask for help Sad Anxious Spends time alone Gets upset Hard to hear

8.27 Child A Social Inclusion Survey raw data

Whole Class

	Week	Happy	Sad	Neutral	Unsure	Total	Missing
Baseline	**1**	16	1	2	1	20	2
	2	15	0	5	1	21	1
	3	13	2	2	1	18	3
	4	15	0	5	2	22	1
	5	14	0	4	1	19	2
Intervention	**6**	14	0	2	0	16	1
	7	16	0	3	1	20	-
	8	12	1	6	0	19	1
	9	14	2	4	0	20	1
	10	16	3	2	0	21	1
	11	13	2	2	0	17	1
	12	13	0	3	0	16	1

Circle Volunteers

	Week	Happy	Sad	Neutral	Unsure	Missing
Baseline	**1**	5	0	1	0	1
	2	4	0	1	0	1
	3	3	1	1	0	1
	4	5	0	1	0	-
	5	4	0	1	0	-
Intervention	**6**	4	0	0	0	-
	7	4	0	1	0	-
	8	5	0	1	0	-
	9	5	0	1	0	-
	10	5	0	1	0	-
	11	6	0	0	0	-
	12	5	0	0	0	-

Focus Child's Perceptions

	Week	Happy	Sad	Neutral	Unsure	Missing
Baseline	**1**	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
	5	-	-	-	-	-
Intervention	**6**	6	13	9	0	2
	7	6	13	9	0	2
	8	4	10	15	0	1
	9	-	-	-	-	-
	10	2	9	19	0	-
	11	-	-	-	-	-

8.28 Child B Social Inclusion Survey raw data

Whole Class

	Week	Happy	Sad	Neutral	Unsure	Total	Missing
Baseline	**1**	7	6	2	0	15	1
	2	6	4	2	4	16	-
	3	7	5	2	2	16	-
	4	9	2	2	2	15	1
	5	9	5	0	2	16	-
Intervention	**6**	5	2	0	2	9	-
	7	9	3	1	2	15	-
	8	6	4	1	3	14	2
	9	9	3	1	2	15	-
	10	5	1	0	1	7	-
	11	9	4	0	2	15	2

Circle Volunteers

	Week	Happy	Sad	Neutral	Unsure	Missing
Baseline	**1**	2	3	1	0	-
	2	2	2	0	1	-
	3	2	2	0	1	-
	4	2	1	0	1	-
	5	2	2	0	1	-
Intervention	**6**	0	0	0	0	-
	7	2	2	1	1	-
	8	0	1	0	2	-
	9	3	3	0	1	-
	10	4	1	0	1	-
	11	4	1	0	1	-

Focus Child's Perceptions

	Week	Happy	Sad	Neutral	Unsure	Missing
Baseline	**1**	13	3	8	0	-
	2	14	2	8	0	-
	3	5	14	5	0	-
	4	2	8	14	0	-
	5	2	15	7	0	-
Intervention	**6**					-
	7	2	12	10	0	-
	8	2	12	10	0	-
	9	4	8	12	0	-
	10	4	14	6	0	-
	11	4	11	8	0	1

8.29 Child C Social Inclusion Survey raw data

Whole Class

	Week	Happy	Sad	Neutral	Unsure	Total	Missing
Baseline	**1**	15	1	3	0	19	-
	2	15	2	4	1	22	-
	3	15	2	5	1	23	1
	4	15	3	5	1	24	1
	5	20	4	2	0	26	-
Intervention	**6**	14	2	3	0	19	-
	7	12	3	5	0	20	-
	8	10	3	3	0	16	-
	9	10	3	3	1	17	-
	10	16	2	2	0	20	-
	11	14	2	2	1	19	-

Circle Volunteers

	Week	Happy	Sad	Neutral	Unsure	Missing
Baseline	**1**	3	0	2	0	-
	2	2	0	3	0	-
	3	3	0	2	0	-
	4	2	2	1	0	-
	5	4	1	0	0	-
Intervention	**6**	3	0	2	0	-
	7	3	0	2	0	-
	8	4	1	0	0	-
	9	4	1	0	0	-
	10	4	1	0	0	-
	11	3	0	1	1	-

Focus Child's Perceptions

	Week	Happy	Sad	Neutral	Unsure	Missing
Baseline	**1**	25	0	1	0	-
	2	13	6	6	0	1
	3	-	-	-	-	-
	4	10	16	0	0	-
	5	12	14	0	0	-
Intervention	**6**	12	14	0	0	-
	7	10	16	0	0	-
	8	9	17	0	0	-
	9	19	7	0	0	-
	10	17	9	0	0	-
	11	12	13	1	0	-

8.30 Child D Social Inclusion Survey raw data

Whole Class

	Week	Happy	Sad	Neutral	Unsure	Total	Missing
Baseline	**1**	4	6	4	2	16	1
	2	4	6	5	1	16	-
	3	4	7	5	1	17	-
Intervention	**4**	1	2	13	1	16	1
	5	2	2	11	1	16	-
	6	-	-	-	-	-	-
	7	7	0	5	1	17	-
	8	6	1	8	1	13	-
	9	5	2	10	0	17	-

Circle Volunteers

	Week	Happy	Sad	Neutral	Unsure	Missing
Baseline	**1**	0	2	1	2	-
	2	1	3	1	0	-
	3	1	3	1	0	-
Intervention	**4**	0	2	2	0	1
	5	0	1	3	0	-
	6	-	-	-	-	-
	7	2	0	2	0	-
	8	2	0	2	0	-
	9	3	0	2	0	-

Focus Child's Perceptions

	Week	Happy	Sad	Neutral	Unsure	Missing
Baseline	**1**	12	0	10	0	-
	2	13	0	9	0	-
	3	12	0	7	3	-
Intervention	**4**	15	0	7	0	-
	5	17	0	5	0	-
	6	-	-	-	-	-
	7	17	0	5	0	-
	8	15	0	7	0	-
	9	13	0	9	0	-

8.31 Inter-rater reliability questionnaire for visual analysis

Baseline Phase Variability

Is the baseline for peer acceptance (happy face) stable (i.e. low variability)?

Yes	No	Unsure

Is the baseline for peer rejection (sad face) stable (i.e. low variability)?

Yes	No	Unsure

Is the baseline for 'neutral' (neutral face) stable (i.e. low variability)?

Yes	No	Unsure

Is the baseline for 'unsure' (question mark) stable (i.e. low variability)?

Yes	No	Unsure

Level

Is there a change in level for peer acceptance (happy face) between the baseline and intervention phase?

Yes	No	Unsure

Is there a change in level for peer rejection (sad face) between the baseline and intervention phase?

Yes	No	Unsure

Is there a change in level for 'neutral' (neutral face) between the baseline and intervention phase?

Yes	No	Unsure

Is there a change in level for 'unsure' (question mark) between the baseline and intervention phase?

Yes	No	Unsure

Baseline Phase Trend

What type of trend is there for peer acceptance (happy face)?

Positive	Negative	Neutral	No clear trend

What type of trend is there for peer rejection (sad face)?

Positive	Negative	Neutral	No clear trend

What type of trend is there for 'neutral' (neutral face)?

Positive	Negative	Neutral	No clear trend

What type of trend is there for 'unsure' (question mark)?

Positive	Negative	Neutral	No clear trend

Intervention Phase Trend

What type of trend is there for peer acceptance (happy face)?

Positive	Negative	Neutral	No clear trend

What type of trend is there for peer rejection (sad face)?

Positive	Negative	Neutral	No clear trend

What type of trend is there for 'neutral' (neutral face)?

Positive	Negative	Neutral	No clear trend

What type of trend is there for 'unsure' (question mark)?

Positive	Negative	Neutral	No clear trend

Immediacy

Is the change immediate in the intervention phase for peer acceptance (happy face)?

Yes	No	Unsure

Is the change immediate in the intervention phase for peer rejection (sad face)?

Yes	No	Unsure

Is the change immediate in the intervention phase for 'neutral' (neutral face)?

Yes	No	Unsure

Is the change immediate in the intervention phase for 'unsure' (question mark)?

Yes	No	Unsure

Impact

Please consider the above factors to create an overall score, along with the amount of overlap between the data points in the baseline and intervention phases.

Overall, has the intervention had an impact on peer acceptance (happy face)?

Yes, a large impact	Yes, a medium impact	Yes, a small impact	No	Unsure

Overall, has the intervention had an impact on peer rejection (sad face)?

Yes, a large impact	Yes, a medium impact	Yes, a small impact	No	Unsure

Overall, has the intervention had an impact on 'neutral' (neutral face)?

Yes, a large impact	Yes, a medium impact	Yes, a small impact	No	Unsure

Overall, has the intervention had an impact on 'unsure' (question mark)?

Yes, a large impact	Yes, a medium impact	Yes, a small impact	No	Unsure