The Effects of a Brief Generalisation Intervention on Social Interactions for Three

Adolescents with Down Syndrome.

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ABSTRACT

The main aim of this study was to measure the effectiveness of a brief generalisation intervention on teaching adolescents with disabilities to generalise specific social skills to two familiar environments. Participant and parent perceptions on friendship quality were examined. In addition, this study examined the attitudes and behavioural intentions of peers toward individuals with disabilities. Three participants participated in the intervention over a four-week period. Training session took place at the participant's home and at a local social club and generalisation settings took place at the participant's after-school activity and/or school. A single case multiple baseline design was employed for each participant across settings. One individual and group session was conducted each week over a four-week period and participants were trained in initiating interactions and conversational skills. Direct observations were conducting over a six week period in the participant's generalisation settings. All three participants showed gains in social interactions in at least one generalisation setting. Observations showed all three participants generalised atleast one skill to generalisation settings. Participants and parents showed similarities and differences in their perceptions of friendship qulity. Peers showed positive attitudes and behavioural intentions towards individuals with disabilities. It can be concluded that adolescents with disabilities can generalise social skills to other familiar environments, however time and opportunities can influence social interactions, friendships and attitudes.

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CHAPTER ONE

INTRODUCTION

An inclusive environment for individuals with disabilities can facilitate their learning and success through socialisation and participation in their school curricula and culture (Kearney 2008; Lalvani, 2013). An inclusive environment can also provide individuals with disabilities the opportunity to form positive relationships with their teachers, teacher aides and peers (Lalvani, 2013). However, some of these individuals experience very few interactions with their peers and teachers, therefore limiting their experiences of inclusion in school (Kearney, 2008) and reducing their chances of forming positive relationships with others. These limited interactions and lack of relationships experienced by individuals with disabilities may be partly due to a lack of sophisticated social skills to initiate and facilitate interactions with their peers and teachers.

Inclusion

Inclusion has been defined as the notion that any individual who attends a local school should not experience any barriers towards their involvement, attendance, or achievements in their schools curricula or culture (Carrington & MacArthur, 2012). However it was not until about 100 years later that this idea was seriously questioned.

History and legislations relating to inclusion.

Schools in New Zealand in 1877 segregated students with disabilities from their typically developed peers (Davies, 2000, Moore et al., 1999). In the 1980's schools starting moving towards a more inclusive society by allow individuals with disabilities to attend regular schools, however little support was provided to these students (Moore et al., 1999).

In 1989 the New Zealand government implemented a change in legislation whereby all children had the right to attend mainstream schools in New Zealand. For

example, Section 8 of the New Zealand Education Act legislates that any individual who requires any form of special education is entitled to obtain education from any state school in New Zealand (Ministry of Education, 1989). Furthermore, in the 1990's New Zealand signed the Universal Declaration of Human Rights, which in Article 26 declares that parents have the right to choose what kind of education their child will receive and this education shall promote understanding, tolerance and friendship (United Nations, 1948).

To further enforce this movement towards an inclusive society, New Zealand signed three United Nations Declarations that complement the rights of children in relation to their needs and views (United Nations, 1989) and declare that individuals have the right to be protected from discrimination on the basis of disability (United Nations, 2007). Furthermore, Article 24 states that all individuals with disabilities are entitled to an inclusive education that does exclude them based on their disability (United Nations, 2007). This education would allow the individual to learn important life and social development skills that will assist their involvement into society.

However, it was not until 1996 that the Government started enforcing inclusive education by introducing the *Special Education 2000* policy and the New Zealand Disability Strategy (Brown, 1997). This policy and strategy both aimed to attain an inclusive educational system by encouraging all New Zealand schools to promote inclusion and provide all individuals with equal quality in learning and developmental needs (Ministry of Education, 1996; New Zealand Government, 2001).

To assist schools with making the move towards an inclusive environment, in 2010 the New Zealand government introduced the *Success For All* plan. This plan aimed to achieve 100% inclusive schools in New Zealand inclusive by 2014 (Ministry of Education 2010). In order to facilitate this goal, the Ministry of Education established an inclusion

section (Te Kete Ipurangi) to their website which provided important information and resources for educators to implement inclusive practices in schools (Ministry of Education, 2015).

Although these services and policies show the government's dedication towards achieving inclusion, for many individuals with disabilities this has not been achieved. For example, Kearney (2008) reviewed the perceptions on inclusion of parents/ caregivers with children who have disabilities, and their experiences with exclusion. Findings indicated that individuals with disabilities continue to experience barriers towards participation in the curricula and culture in regular schools. The 63 parents in this study had experienced their child being excluded from schools including, being denied access to a particular school, informed that the school lacked resources for the child, findings which indicate uninviting attitudes from schools towards individuals with disabilities.

In a qualitative study, Rutherford (2009) examined the experiences ten students with disabilities faced in inclusive schools. The students, who were aged from 8 to 17 years old indicated that teachers tended to be uninviting in nature and did not facilitate participation and interaction for all individuals. For example, one participant suggested that his teacher's priority was to teach his typically developing peers as he had a teacher aide.

Further research by Rutherford (2012) concluded that individuals with disabilities still face exclusion due to attitudinal barriers of teachers and schools. Peer acceptance and social participation among individuals with and without disabilities needs to be developed in inclusive schools in order to promote a more inclusive society

Previous literature has focused on social participation within the classroom and playground environment in inclusive settings (Chadinha, 2014; Cutts & Sigafoos, 2001; Hall & McGregor, 2000; Hestenes & Carroll, 2000). For example, Hestenes and Carroll

(2000) observed 29 children with and without disabilities in the classroom and playground and results showed that the typically developing children spent very little time interacting with their peers with disabilities. Similar findings where shown in research by Chadinha (2014) in which two primary school students with disabilities were observed interacting with their teachers, teacher aides and peers in the classroom and playground. It was found that majority of interactions observed in the classroom and playground were between students with disabilities and their teacher aide. In addition, students with disabilities experienced limited academic participation and social interactions between students with disabilities and their peers (Chadinha, 2014). Hall and McGregor (2000) had comparable findings to Chadinha (2014), for example, three students with disabilities were observed interacting with their peers and teachers during free play in the classroom and playground. Direct observations found there were very little interactions between students with disabilities and their peers. One student spent 58% of the direct observations playing alone in the playground and classroom, in contrast to their typically developing peers, who showed no interactions with adults during free time.

Observations of adolescents with disabilities interacting with their peers in inclusive school settings have showed similar findings to those reported by Chandinha, (2014) and Hall and McGregor (2000). For example, Cutts and Sigafoos (2001) examined the frequency and nature of interactions between adolescents with disabilities and their peers. Nine students with disabilities who were already enrolled in a large regular suburban school in Brisbane, Australia were observed, interacting with their peers in the playground at lunchtime, over a 4-month period. Results revealed the students showed positive interactions with their peers, however the majority of these interactions were with peers who also had intellectual disabilities. Only 34% of peer interactions involved the students with disabilities interacting with typically developing peers.

This reported lack of social interactions between students with disabilities and their typically developing peers is of particular concern, as peers can act as models for these students (Terpstra & Tamura, 2007) and the interactions can assist with learning, socialisation and behaviour.

Attitudes

An important aspect of facilitating an inclusive environment at school relates to positive attitudes to disability and diversity, because teachers, peers and community thinking and responses can influence the inclusive experience of individuals with disabilities (Cooke, 2001; Gilmore, Campbell & Cuskelly, 2003; Glazzard, 2011; Rosenbaum et al., 1988; Siperstein, Parker, Bardon, & Widaman, 2007). Such responses can affect individuals with disabilities' social participation and quality of inclusive experiences. Glazzard (2011) for example, examined the attitudes of teachers in one primary school via focus groups and findings suggested that the teachers displayed negative attitudes towards individuals with disabilities and created a negative impact on the schools pledge towards inclusion. Negative attitudes towards the inclusion of individuals with disabilities in regular schools have been observed in community settings. Gilmore et al., (2003) examined the attitudes of 2053 people from a Queensland community on the inclusion of individuals with Down syndrome into mainstream settings. Results found that only 20% of the Queensland community sample believed that inclusion of all individuals into regular schools was beneficial for individuals with Down syndrome. A meta-analysis by Nowicki and Sandieson (2002) revealed that typically developing children tend to express negative attitudes towards individuals with disabilities, such as preferring to socially interact other typically developing peers, in comparison to peers with disabilities. In addition, results also suggested that typically developed children in inclusive settings were more accepting of individuals with disabilities than children

attending non-inclusive classrooms. These findings are similar to those of Law and Kelly, (2005), who reported attitudes of typically developed peers in inclusive settings were positive, and behavioural intentions were high towards individuals with physical and intellectual disabilities.

Attitudes and behavioural intentions towards individuals with disabilities vary with age across typically developing individuals, with older children reportedly demonstrating more negative attitudes in comparison to children below the age of 10 years (Campbell, Ferguson, Herzinger, Jackson & Marino, 2004; de Boer, Pijl, Minnaert & Post, 2014). Swaim and Morgan (2001) examined the attitudes and behavioural intentions of 233 typically developing 8 to 13 year olds towards individuals with disabilities. Children between the ages of 11 and 13 were more negative towards individuals with disabilities and less likely to interact with individuals with disabilities in a social, academic and recreational environment, when compared to children aged 8 and 9.

The reported negative attitudes towards individuals with disabilities persist in older children, even after attitude interventions are administered (Campbell et al, 2004; de Boer et al., 2014). For example, de Boer and colleagues (2014) examined the effects of an attitude intervention on typically developing children of kindergarten and elementary age. The aim of the intervention was to increase the knowledge of typically developing children about individuals with disabilities, through structured storytelling. Before the intervention, both typically developing kindergarten and elementary children had negative attitudes towards individuals with disabilities however after the intervention, positive attitudes such as "I would like to be friends with a child who cannot see" were observed for kindergarten children and limited improvements in attitudes from elementary children. It was also found that after an attitude intervention was implemented, typically developing

children between the ages of 10 and 12, tended to have either more negative or neutral attitudes towards individuals with disabilities than their younger peers.

In addition, these negative attitudes towards individuals with disabilities were observed in typically developing adolescents. For example in a national survey by Siperstein, Parker, Bardon, and Widaman (2007), adolescent attitudes towards individuals with disabilities in 26 different states in the USA were reported. Findings showed that typically developing adolescents have limited association with individuals with intellectual disabilities and have no desire to interact with them outside of school. Similar results were reported in a study by de Boer and Pijl (2016) and a review by Rosenbaum et al., (1988), which revealed that typically developing individuals had negative attitudes and were are less likely to socially interact with peers with disabilities during adolescence.

This is of particular concern for individuals with disabilities, as these negative peer attitudes and lack of social interactions could have an impact on an individual's acceptance by peers, development of friendships and self-esteem (Rutherford, 2009; de Boer, Pijl, & Minnaert, 2012).

Friendship

Inclusive environments for individuals with disabilities to develop positive friendships with their typically developed peers (Hollingsworth, 2009). Research has shown that individuals with disabilities who attend regular schools can succeed in developing friendships and socially interacting with typically developing peers (Fryxell & Kennedy, 1995; Hunt, Staub, Alwell & Goetz, 1994). However, the quality of these interactions and friendships are questionable, and previous literature has indicated differences in distinctive patterns of play between individuals with and without disabilities (Carter & Hughes 2005; Lee, Yoo & Bak, 2003; Siperstein, Leffert & Wenz-

Gross, 1997; Siperstein et al. 2007). Lee and colleagues (2003) examined the nature of friendships between individuals with and without intellectual disabilities and found that typically developing children tend to act more as leaders in play and children with disabilities as followers. In comparison, two typically developing individuals playing together tend to alternate these roles. Similar findings were observed in a study by Siperstein and colleagues (1997) in which individuals with disabilities showed lower levels of engagement and reciprocity during play with their typically developing friend, in comparison to play between two typically developed individuals.

There is also evidence to suggest that the quality of friendships for individuals with disabilities tends to be poor, for example, having a lack of intimacy and a lack of participation in activities with their friends (Heiman, 2000; Tipton, Christensen & Blacher, 2013; Vaughn & Elbaum 1999; Wenz-Gross & Siperstein 1997; Wiener & Schneider 2002). Heiman (2000) examined the quality of friendships in 575 adolescents with and without disabilities, between the ages of 12 and 20 and the findings suggested that typically developing individuals are more likely to form greater intimacy with their friends by sharing secrets and thoughts, where as individuals with disabilities believe that friendships are for help and entertainment purposes. Similar results were reported by Tipton et al., (2013), in an examination of the differences in the quality of friendships between adolescents with and without disabilities. Reports from both parents and participants indicated that individuals with disabilities had low quality friendships, which are characterised by less warmth/closeness and a lack of positive reciprocity when compared to those of typically developing individuals. In addition, both studies found that individuals with disabilities spend less time participating in activities with their friends outside of school.

Parents could be influencing the amount of time individuals with disabilities spend with their friends outside of school as Matheson and colleagues found that individuals with disabilities tend to spend the majority of their time with their family members during adolescence (Hall & Hewson, 2006; Lippold & Burns, 2009). Therefore, families play an important role in facilitating the development of friendships through organising social activities for their child to participate in with their peers (Matheson et al., 2007). In conclusion, it is essential for future research to consider multiple perspectives in measuring adolescent's friendships.

Social Skills.

Social skills have been identified as an important predictor of friendship quality (Frostad, & Pijl, 2007; Monchy et al., 2004; Soresi & Nota, 2000; Tipton et al., 2013). However, the maintenance and development of quality friendships during adolescence requires more sophisticated social skills, therefore individuals with disabilities may have poorer quality friendships as they may not obtain these skills (Matheson et al., 2007). Tipton and colleagues examined whether social skills and problems behaviours influenced the quality of friendships in adolescence. One hundred and three adolescents aged 13 years old with and without disabilities were recruited and semi-structured interviews on friendship quality were conducted with the participants and their parents. Social skills and problem behaviours were measured through Social Skills Rating System (SSRS). Results indicated that there were positive correlations between SSRS scores and friendship quality results and this suggests that social skills were significant predictors of friendship quality in adolescence. These results are also consistent with other findings that demonstrated under-developed social skills can result in limited and low quality friendships in comparison to those of typically developed individuals (Frostad & Pijl, 2007; Vaughn & Elbaum 1999).

An extensive amount of literature has shown that individuals with disabilities can have deficits in social skills, such as delays in effective communication and social interactions (Alwell & Cobb, 2009; Carter, Sisco, Chung & Stanton-Chapman, 2010; Shashi et al., 2012; Van Gameren-Oosterom et al., 2013). These deficits reduce the opportunities of individuals with disabilities participating in positive social interactions, being accepted by peers and forming positive friendships (Matheson et al., 2007; Siperstein, Parker, Norins, Bardon & Widaman, 2007). Impairments in social skills have become more apparent in adolescents because the expectations of communication increase and participation in the classroom is usually facilitated socially (Alwell & Cobb, 2009; Matheson et al., 2007). Van Gameren-Oosterom and colleagues (2013) examined whether 322 adolescents with Down syndrome could master basic social skills, and reported that 90% of their participants experienced difficulties in social functioning, in particular, dealing with others and adapting to new environments and situations. Similar results were reported by Shashi and colleagues (2013) in a study that examined the relationship between social skills and neuropsychological function/behaviour in 66 adolescents with Down syndrome, revealing below average scores on the Social Skills Rating System (SSRS) and more problem social behaviours. The researchers identified a social skills intervention that will improve the social competence of adolescents with Down syndrome as an important area for future research.

As indicated, it can be concluded that inclusion cannot be implemented by simply placing individuals with disabilities in a mainstream classroom (Rutherford, 2012). Further assistance is needed, such as the development of social skills intervention that can help individuals with disabilities develop quality friendships and increase the frequency of social interactions with their teachers, teacher aides and peers.

CHAPTER TWO

LITERATURE REVIEW

Behavioural Learning Theory

Sociocultural theory focuses on the influence parent, peers and society have on an individuals cognitive functioning (Vygotsky, 1978). An important concept of socio-cultural theory is the zone of proximal development, which refers to the differences between an individual's independent development and their potential development, which can be accessed via the guidance of an adult or associations with peers who have more accomplished skills (Vygotsky, 1978). Bruner (1986), elaborated on Vygotsky's theory by describing 'scaffolding' as structured activities implemented by experienced adults to assist in learning. Therefore many social skills interventions such as social skills training have employed behavioural and social learning techniques to assist individuals with learning social skills (White, Keonig, Scahill, 2007).

Social Skills Training Interventions

Social Skills Training (SST) interventions focus on improving social interactions by teaching social skills to individuals with social skill deficits (Spence, 2003).
SST employs the following behavioural techniques to teach social skills to participants: Examples from Hall, Dineen, Schlesinger & Stanton, (2000) are provided for each technique:

Instructions. The benefits of social outcomes are discussed and the instructions on how to perform the target behaviour are broken down into subcomponent steps in order to facilitate learning (Spence, 2003). For example Hall and colleagues (2000), taught adults with disabilities the components of social conversations as outlined below:

1) Greet the other person by say "hi" or responding to their greeting

2) Ask a question, such as "how are you?", "what have you been doing"

3) Talk about self (interests, jobs)

4) End the conversation by saying "good bye" (Hall et al., 2000, p. 305)

Modelling. Modelling involves the demonstration of the appropriate social skill to the participants. Spence (2000) suggested using real-life cues in order to make modelling lifelike.

Role-plays/Rehearsals. To acquire target social skills, it is important to practice the sub-component steps. Role-plays are commonly used to rehearse the skills being taught and can include the researcher and the participant or two participants (Spence, 2000). Hall and colleagues (2000) provide the following example of a role-play with potential prompt questions using an everyday occurrence as a context for learning the new skill. 'You see a familiar person on your bus home from work and he sits next to you and says "hi, nice day today." 'What do you say or do?' (p. 306).

Feedback/Reinforcement Informative feedback is given to the participants after role-plays. Feedback is presented in a constructive manner where positive aspects of the participant's performance are emphasised and areas that need improvements (Spence, 2000). When target social skills are performed correctly, participants receive social praise (Spence, 2000).

Target Behaviours. Target behaviours used in social skills training can vary based on the individual's age, cognitive functioning and specific deficits in social interactions (Spence, 2000). The complexity of these behaviours can range from basic social skills, such as eye contact and greetings, to more intricate repertoires of skills that are performed in settings such as jobs (Spence, 2000). Nevertheless, there are five common social skills that are

frequently selected by researchers to teach individuals with disabilities and these skills are

summarised in Table 1.

Table 1.
 Five Frequently Selected Target Behaviours used in social skill training interventions for individuals with disabilities.

Initiating Interactions	Greetings	Eye contact	Conversational skills	Responding to initiations
e.g. Christopher, Hansen & MacMillan, (1991);Soresi & Nota, (2000);Tse, Strulovitch, Tagalakis, Mneg & Fombonne, 2007; Webb, Miller, Pierce, Strawser & Jones, 2004.	e.g. Soresi & Nota, (2000); Tse et al, (2007); Weilli Duan & O'Brien, (1998); Williams, (1989)	Tse et al, (2007); Weilli Duan & O'Brien, (1998);Williams, (1989)	Soresi & Nota, (2000); Tse et al (2007); Weilli Duan & O'Brien., (1998); Williams, (1989)	Christopher, et al., (1991)Soresi & Nota, (2000); Weilli Duan & O'Brien, (1998).

SST interventions are versatile in administration and the intervention can be delivered

through peers, individually and in groups.

   The following literature on peer-mediated social skills training interventions (refer

Table 2) was selected through a search of Science Direct, PsycINFO and PsycARTICLES

and Google Scholar. The following keywords were used: social skills training* AND,

AND peer-mediated * peer-helper* peer-tutor*. Studies were included where 'peer-

mediated' and 'social skills training interventions' were the main focus of the study.

Table 2.
Studies Using Peer-mediated Social Skills Training Interventions for Individuals with Social Deficits.

Authors	Participants and setting	Measures	Target Behaviours	Procedure	Results
Weilli Duan & O'Brien, (1998)	n=3 adolescents with disabilities who live in a community-based group home. Generalisation settings: living room of group home and local bowling alley. All training sessions occurred in the living room of the group home.	**Direct observations**- 30 minutes Social skills trained: a) Following directions b) Accepting 'no' answers c) Disagreeing appropriately d) Engaging in conversations e) Showing respect f) Showing sensitivity to others. **Generalisation probes** were administered twice a week for approximately 30 minutes.	a) Appropriate social interactions b) Eye contact c) Posture d) Inappropriate social interaction	a) Introducing and describing the skill b) Modelling c) Role-plays d) Praise for appropriate responses	Results showed that all three participants improved in target behaviours immediately after the intervention was implemented
Christopher, Hansen & MacMillan, (1991)	n= 3 socially withdrawn males between the ages of 7 and 8 were recruited. n=6 peers. Two peers from each of the participant's class. **Observations** were conducted and during recess in the morning (Recess 1) and afternoon (Recess 2). **Generalisation** was measured in the afternoon recess (Recess 2). **Training sessions for peers** occurred in a private room at school. **Intervention sessions** were conducted during recess in the morning (Recess 1).	**Direct observations** to measure social interactions and generalisation.	a) Initiating interactions b) Preparing for being ignored or refused c) Maintaining interactions d) Ideas for structuring the play activities e) Handling negative behaviours	a) Rationale for the skill being taught b) Modelling-appropriate and inappropriate responses. c) Role-plays d) Giving feedback	Positive interactions with peers increased for all three participants during Recess 1 observations across baseline, intervention and maintenance phases. However, only two out of the three participants showed increases in social interactions during Recess 2 (generalisation setting) observations across all three phases.

Odom & Strain, (1986)	n= 3 preschools with autism, aged 4. n=4 typically developing peers between the ages of 4 and 5. Training sessions occurred in the classroom.	The primary observer conducted direct observations of social interactions between peers and children with autism for six-minutes each day. Teacher verbal and physical prompts were recorded during observations.	a) Sharing b) Play organisation	**Introduction** of social skills to peer. **Discussion** with peer. **Modelling**-researcher models skill to peer **Role-plays (1)**-researcher and research assistant **Role-plays (2)**-researcher and peer. **Role-play (3)**-adult and participant h **Role-play (4)**-peer and participant.	Results showed that the peer-mediated intervention increased the participants social response, and the teacher-antecedent intervention increased the frequency of social interactions initiated by the participant.

Peer-mediated interventions. Peer-mediation interventions involve a peer with or without social skill deficits being trained in SST by the researcher, to facilitate social interactions for participants with social skill deficits (Smith et al., 2010). Previous literature on peer-mediated interventions has shown positive effects on increasing in frequency of social interactions and specific target behaviours, after the implementation of interventions (Christopher, Hansen & MacMillan, 1991; Odom & Strain, 1986; Weilli Duan & O'Brien, 1998).

Christopher and colleagues (1991) evaluated the effects of a peer-mediated social skills intervention on social interactions between socially withdrawn children and their peers. Three socially withdrawn children and six peers were recruited. Direct observations were conducted during recess in the morning and afternoon. Intervention sessions took place during the recess in the morning, where as generalisation was measured in the afternoon recess. Observations found that positive interactions with peers increased for all three participants during the morning recess across baseline, intervention and maintenance phases. However, only two out of the three participants showed increases in social interactions during the afternoon recess across all three phases.

Weilli Duan and O'Brien, (1998) evaluated the effects of a peer-tutoring procedure on the generalisation of trained social skills to natural environments. Three adolescents with intellectual disabilities between the ages of 17 and 22 were recruited from community-based group homes. Generalisation was measured through probes that were administered twice a week during baseline, intervention and follow-up phases (1 month, 3 months and 6 months after the intervention). The researcher selected one participant to be a peer-tutor and trained the participant in the social skills. Individual training sessions were approximately 30 to 60 minutes and were

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conducted two to four times a week in the living room of the group home. After training, the peer-tutor trained the two remaining participants separately for two to four times a week. Social skills were taught to peers through the same procedures as the individual sessions. Results showed that all three participants improved in target behaviours immediately after the intervention was implemented, suggesting that peer tutoring is an effective intervention for social skills. For all three participants the frequency of target behaviours was maintained for all three follow-up generalisation probes.

Odom and Strain (1986) compared the effects of two interventions that enhance the reciprocity of peer social interactions between pre-schoolers with autism and their peers. Teacher-mediated and peer-mediated interventions were reviewed in this study. Three pre-schoolers with autism and 4 typically developed peers were recruited. Training sessions took place in the classroom during free-play periods and for each session a single play activity (sand table, cars and trucks, block building etc) was chosen. For the peer-mediated session, peers were instructed to initiate social interactions with the participants. During the teacher-antecedent sessions peers learned to respond to initiations from the participant. Direct observations of social interactions between peers and children with autism were conducted for six minutes each day. Teacher verbal and physical prompts were recorded during these direct observations. Results showed that the peer-mediated intervention increased the participant's social response, where as the teacher-antecedent intervention increased the frequency of social interactions initiated by the participant.

Social skills training (SST) administered to participants individually.

Individual training sessions provide researchers with the ability to adapt the intervention to specifically target participant's social deficits and move through the treatment at a rate based on the participant's progress (Smith, Jordan, Flood & Hansen, 2010). There is a limited amount of research that focuses on administering SST individually to adolescents with disorders or disabilities and the results of the few studies in this area are equivocal. Kjobli and Ogden, (2014) examined the effects of an Individual Social Skills Training (ISST) intervention that promotes social skills in children with conduct problems. Nearly 200 children between the ages of 3 and 12 were randomly assigned to ISST or a practice group. Results lacked any significant effects in increasing social competence and reducing conduct behaviours in children with conduct problems.

Tofte-Tipps, Mendonca and Peach, (1982) examined the effects of a social skills training intervention on two individuals with social-emotional problems interacting with familiar and unfamiliar adults. Participants were an 11-year old male with social and emotional problems and a 14-year old female with a mild intellectual disability. Training and assessment settings were conducted in a therapy room with participants receiving weekly training sessions of approximately 1 hour for ten and seven weeks respectively. Sessions comprised a generalisation scenario that corresponds to the target behaviour. For example, "you are in a record store and see a girl you know, she sees you and says: (Prompt) Hi do you like this kind of music too?" (Toftes-Tipps et al., 1982, p. 51). The following table provides information on the target behaviours and behavioural techniques used by Tofte-Tipps and colleagues (1982):

Table 3

Target Behaviours and Behavioural Techniques used by Tofte-Tipps et al., (1982)

Target Behaviours	Behavioural Techniques
1) Eye contact 2) Posture 3) Minimal Encouragers- "Oh?", "really?" etc. 4) Open-ended questions 5) Follow-up questions 6) Compliments 7) Appropriate opening remarks e.g. "It's nice to meet you", "how are you?" 8) Speech duration: total number of seconds the participant spoke 9) Negative statements e.g. "I'm bored" 10) Repetitions of verbalisations.	1) **Instructions** about the target behaviours were administered to the participants. 2) **Modelling-** target behaviours were modelled to the participants by the researchers. 3) **Role-plays**- given standard training and novel training scenes 4) **Feedback** 5) **Repetition** 6) **Home work-** practice the score being taught

Findings during the generalisations scenes showed that increases in target behaviours were similar to those in the training scenes. However for participant one, one of the social skills regressed back to baseline levels during post treatment. Participants showed improvements in target behaviours when interacting with familiar people in familiar environments. Participant one showed increases in 4 out of the 5 behaviours, where as participant two showed increases in 5 out of the 7 target behaviours. In relation to interactions with unfamiliar people, both participants showed similar results to the familiar settings, however each participant had one social skill that did not generalise after training, for example, participant one had compliments and participant two, appropriate opening remarks (Toffe-Tipps et al., 1982).

A lack of positive results was possibly due to role-play settings lacking a naturalistic context, therefore reducing the opportunities of participants practicing

with individuals their own age (White et al., 2007). One way of overcoming this is to provide participants with the opportunity to practice the learnt social skills with other participants or peers in a naturalistic setting (White et al., 2007).

Group-based social skills training interventions

The advantages of group sessions are the presence of other participants and their ability to serve as models for appropriate social skill and as practice partners during role-plays. In addition they provide participants with the opportunity to socially interact with their peers and practice their newly acquired skills in a structured and unstructured environment (Smith et al., 2010). Table 4 provides information about studies that have measured the effectiveness of a group-based SST intervention for adolescents with disabilities. The following literature on group-based Social Skills Training interventions was selected through a search of Science Direct, PsycINFO and PsycARTICLES and Google Scholar. The following keywords were used: social skills training* AND group, AND adolescent with disabilities *. Studies were included where 'adolescents with disabilities' and 'social skills training interventions' were the main focus of the study.

Table 4

Studies using Group-Based Social Skills Training for People with Disabilities.

Authors	Participants and setting	Measures	Target Behaviours	Procedure	Results
Deckers, Muris, Roelofs & Arntz, (2016)	n=52 Children 8-12 years old. Asperger Syndrome, Autistic disorder, PDD-NOS. Males (n=47) Females (n=5)	SSO LACA	a) Basic social skills - Eye contact, - Voice volume, - Distance, - Posture. b) One good turn deserves another - If you are kind to someone they are more likely to be kind back c) Advanced social skills - Listening, - Recognizing emotions - Asking other - Conversations - Responding to other people's emotions etc	1) Overview 2) Personal highlights of the past week 3) Discuss participants homework 4) New social skill Instructions 5) Role-plays 6) Homework.	Based on parent reports, the SST intervention increased their child's social skills and effects were maintained at the 3 months follow-up.
Hall, Dineen, Schlesinger & Stanton (2000)	n=6, Males= 3 Females= 3. Adults with developmental disabilities aged 20 and 28	Group trainers scored each social skill on its own scoring system that had a 10-point scale, with 10 = *most effective* and 0 = *the least*.	a) Social conversations b) Asking someone to a social event c) Saying no to a request d) Giving criticism e) Differing in opinion f) Receiving criticism	a) Provision of information, b) Modeling c) Behavioural rehearsal d) Feedback	When comparing group scores, there were slight increases in all six social skills from baseline to post-intervention. Results showed that there were group differences for direct observations of control and treatment groups. However there were no differences for social competence tests.

Soresi & Nota, (2000)	n=20 Adolescents with Down syndrome (μ age= 18) Females: n=10 Males: n=10	- Direct behavioural observations during classroom activities and recreational situations. - VAS	a) Greetings saying "hello" to peers and teachers. b) Introductions of ones self to peers and teachers c) Initiating a conversation with peers and teachers d) Maintaining a conversation with peers and teachers	a) Instructions b) Modelling c) Role-plays d) Informative feedback e) Positive reinforcement f) Repetition	For direct observations there were significant gains from pre-, to post-intervention in relation to talking with peers and teachers and following instructions from teachers. However there were no differences in pre- to post-intervention scores for social competence tests.
Tse et al, (2007)	n= 6 Age:13-18 ASD	- SRS - ABC - N-CBRF	a) Eye contact b) Politeness c) Awareness and expression of feelings d) Initiating conversations e) Listening to others f) Making small talk h) Introducing oneself i) Recognition of non-verbal communication j) Maintaining a conversation k) Negotiating with others l) Responding to teasing and bullying	a) Check-in: events and problems of the weeks are discussed. b) Review last weeks skills c) Introduction to new skill- given cards describing the skill d) Role-plays- members practice the new skill in pairs. e) Break: interactions encouraged f) Activity: group games such as charades g) Closing	For both social competence and problem behaviour measures there was a significant increase from pre- to post-intervention.

Webb et al., (2004)	n=10 males, between the ages of 12-18. high-functioning autism spectrum disorder.	SCORE SKS SDT SSRS	a) Share ideas b) Compliment others c) Offer help or encouragement d) Recommend changes nicely e) Exercise self-control.	a) Revision b) Instructions c) Model d) Role-plays e) Review of skill learnt f) Homework	Only three of the four social skills (compliments, offering help, exercise control, recommend changes) showed statistically significant differences between pre- and post- intervention group mean skill performance scores. For the SSRS scores, there were no statistically significant differences between the pre-intervention and post-intervention scores.
Williams, (1989)	n=10 adolescents between the age of 9 and 15	SBQ	a) Asking for help b) Eye contact c) Feelings and expressions d) Conversations e) Tone of voice f) Dealing with teasing g) Greetings h) Listening. i) Assertiveness	a) Modelling b) Role-plays c) Recreational games	Overall results showed that there were improvements in peer relationships and were more confident in talking to staff and peers. The use of facial expressions was more appropriate after the intervention than during baseline.

Note: ASD: Autistic Spectrum Disorders. *Measures*: ABC: Aberrant Behaviour Checklist; LACA: Loneliness and Aloneness Scale for Children and Adolescents; N-CBRF: Nisonger Child Behaviour Rating Form; SBS: Social Skills Behaviour; SBQ: Social Behaviour Questionnaire; SDT: Situation Discrimination Test; SKS: Skill Knowledge Survey; SRS: Social Responsiveness Scale; SSO: Social Skills Observation; VAC: Social Abilities Valuation scale.

Williams, (1989) examined the effects of a four-year social skills training intervention on 10 children with intellectual disabilities, between the ages of 9 and 15. Overall results showed that there were improvements in peer relationships and participants were more confident in talking to staff and peers. Webb and colleagues (2004), found similar results to Williams (1989) for example, the group means for this study showed significant improvements for three (compliments, offering help, exercise control, recommend changes) out of the four social skills being measured. However parents and teachers SSRS score showed no change from pre- to post-intervention phases.

Although Williams (1989) and Webb and colleagues (2004) showed relatively positive results, both studies failed to measure whether adolescents with disabilities could transfer these newly learnt social skills to environments other than the training settings.

As shown above, four studies by Soresi and Nota, (2000) and Tse and colleagues (2007), Deckers and colleagues, (2016) and Hall and colleagues, (2000) determined whether adolescents with disabilities could generalise learnt behaviours in to untrained environments. For example, Soresi and Nota, (2000) recruited 20 adolescents with Down syndrome. Forty-minute direct observations were conducted during classroom activities and recreational situations examined the effects of a SST intervention on 20 adolescents with Down syndrome who attended special vocational schools for individuals with disabilities. Participants were allocated to either an experimental or a control group. In the experimental group participants were trained using SST techniques in the following target behaviours: greetings, introductions and initiating and maintaining social interaction. Control group participants engaged in social and cooperation games. Participants were observed for 40 minutes twice a

week, over a 3-month period and during these observations positive and negative social behaviours were recorded during classroom activities and recreational situations. Social competence was measured through a social competence questionnaire that was administered to teachers pre- and post-intervention. Findings indicated that there were group differences for direct observations of control and treatment groups. However there were no differences for social competence tests. Direct observations suggest generalisation occurred however teachers did not believe that there was any generalisation.

Tse, Strulovitch, Tagalakis, Mneg and Fombonne (2007) examined the effects of a group-based social skills training intervention for adolescents with Asperger syndrome and high-functioning autism with six adolescents between the ages of 13 and 18 being recruited. The intervention was delivered in 90-minute sessions once a week for 12 weeks in a conference room at a child and adolescent psychiatry clinic. Three questionnaires were administered to parents before and after the intervention to determine whether there were any behavioural changes. Parents and students self-reported improvements in social and problem behaviours in settings outside of the clinic suggesting that social skill training in groups may be an effective way of increasing social behaviour in this population.

Deckers, Muris, Roelofs and Arntz (2016) examined the effects of a social skill training intervention for children with autism spectrum disorders (ASD). A combined between- and within-subjects design was employed. Training sessions consisted of three one-hour sessions with parents and one-hour participants session once a week over a 12-week period. Parent reports, indicated that the SST intervention increased their child's social skills and effects were maintained at the 3 months follow-up.

Similar results were shown in a study by Hall and colleagues (2000) which examined the effects of a group social skills training intervention that focuses on improving the social skills of six individuals with disabilities. Results showed that when comparing group scores, there were slight increases in all six social skills from baseline to post-intervention. At the one-year follow-up for generalisation, group results showed that behaviours were similar to behaviours in the post-intervention phase.

Individual and group-based SST interventions

There is limited research that employs the use of both individual and group administration of SST for individuals with disabilities. A study by Mesibov (1984) investigated the effects of a SST on 15 adolescents and adults with autism spectrum disorders. The following target behaviours were selected through direct observations of participants and parent or caregiver's perceptions: a) learning how to meet new people, b) paying attention to other people while they are talking, c) staying on topic during a conversation topic, and d) talking about topics of interests to other people. Participants met once a week over a 10 to 12 week period. Individual sessions were implemented for approximately 30-minutes and involved the researcher teaching specific skills to the participant. After individual sessions, a 60-minute group session was conducted and provided participants with the opportunity to practice there previously learnt social skills with their peers. Group sessions were separated into four segments: a) group discussions, b) listening and talking, c) role-plays, and d) appreciation of humour. Group discussions and appreciation of humour segments provided participants with the opportunity interaction with their peers in an unstructured environment. In comparison, role-play and listening and talking segments involved the training of social skills through instructions, modelling,

rehearsals and feedback. Findings were obtained through feedback from participants and their parents, in addition to the researcher observing the participants behaviour during role-plays. Following the intervention it was noted that participants and parents found the intervention was effective in relation to the participant experiencing positive peer-related social experiences. They were enthusiastic about coming to group sessions and parents found that the sessions were meeting their child's needs. Although the feedback from the participants and their parents were positive, a more thorough data collection was required in order to determine whether the participant's improved in target skills and what components of the intervention were changing the participants behaviour.

The majority of the studies that have implemented social skill training interventions have shown that individuals with disabilities significantly improve in their social skills after training (e.g. Barry et al., 2003; Soresi, & Nota, 2000; Tofte-Tipps et al., 1982; Rao, et al., 2008; Walton et al., 2013). Although they largely showed positive results, there were two important limitations that must be considered in relation to these finding. The first limitation is that the social skills that are being trained do not necessarily match the social skills that the individual requires (Gresham, 2001; Lalli, Pinter-Lalli, Mace, & Murphy, 1991). This limitation was of particular importance because if social skills are selected randomly, there may be a lack of support from the natural environment (Lalli et al., 1991). If the individual has difficulties in developing social skills, then an intervention that trains new skills should be implemented, however if the child is experiencing performance deficits then intervention strategies should enhance performance (Gresham et al., 2001). The second limitation was the lack of generalisation of skills across settings. Social skills literature concludes that individuals with disabilities fail to generalise learnt social

skills to new settings and people (e.g. Gresham, 1981; Rao, et al., 2008; Singh, & Winton, 1983; Walton et al., 2013). The lack of generalisation may be attributable to the non-inclusion of basic generalisation principles and practices within the interventions (Castles & Glass, 1986; Matson & Earthart 1981; Gresham et al., 2001).

Generalisation

Generalisation occurs when newly learnt target behaviours are demonstrated in untrained settings or situations (Stokes & Baer, 1977; Stokes & Osnes, 1989) It is critical for individuals to be able to use and maintain these new skills in everyday interactions; otherwise without generalisation the treatment efforts of interventions are meaningless (Smith, Jordan, Flood, Hansen, 2010). The results of behavioural interventions revealing that participants are unable to transfer learnt behaviours from the training environment to natural environments has lead to the development of techniques for assessing or programming generalisation (Stokes & Baer, 1977). Stokes and Baer (1977) developed the following nine techniques presented below:

1) *Train and hope* is when generalisation occurs naturally, without anything being explicitly programmed;

2) *Sequentially modify* is a procedure that promotes generalisation to occur by applying the same techniques that changed behaviour successfully in one context to all contexts;

3) *Introduce to natural maintaining contingencies* is when individuals are naturally reinforced by their own environment, for example when the individual finds the target behaviour beneficial therefore transfers it to other settings.

4) *Train sufficient exemplar* refers to researchers providing a lot of examples and

lessons. *General Case Programming* refers to training exemplars in order to promote generalisation (Alberto & Troutman, 1999); *Training in multiple settings* refers to training target behaviour in different contexts (Alberto & Troutman, 1999);

5) *Train loosely* is when target behaviours are trained in an unstructured environment, for example, when a variety of stimuli are taught in a session instead of focusing on the mastery of one skill before the next skill can be taught;

6) *Use indiscriminable contingencies*: when reinforcement is implemented at irregularly schedules to increased maintenance;

7) *Program common stimuli* is when the stimuli in the training and generalisation settings are similar;

8) *Train to generalise* is when the reinforcement of generalisation results in generalisation becoming a response class, for example, by reinforcing target behaviours in new settings, learnt behaviours in novel settings may become a generalised response class;

9) *Mediating generalisation* is when participants are taught to monitor and report on their own generalisation of appropriate behaviour.

Social skills intervention literature reports that a combination of generalisation techniques is more effective than implementing one single technique (Brown & Odom, 1994; Chandler Lubeck & Fowler, 1992; Griffith et al., 1997). Chandler et al.(1992) examined the generalisation results of 51 studies that investigated the effects of social skills interventions on preschool children with and without disabilities. Subjects for each study varied in characteristics, for example, including children with

disabilities plus social deficit; typically developing children with social deficits; children who are at risk for developmental and social delays; and typically developing children. Of the 51 studies reviewed, 37 used generalisation techniques with the most frequently used being *train loosely, use indiscriminable contingencies, program common stimuli, train to generalize and train sufficient exemplars.* Twenty-seven of these studies implemented more than one of these techniques, and findings suggested that the most successful social skills interventions used a combination of generalisation promotion strategies.

Griffiths et al (1992) assessed the generalisation outcomes from social skills training that specifically used a combination of generalisation techniques. Twenty-eight adults with developmental disabilities were taught four social skills (social interactions, self-control over social environment, recruiting social reinforcement from peers, and decrease socially unpleasant events), twice a week over a 6-week period. With the assistance of familiar staff, these social skills were taught to participants through two games, a social skill game and social life. Each game used a combination of generalisation techniques, for example, social skills game used three techniques (multiple exemplars, accessing natural communities of reinforcement and programming common stimuli) whereas social life used a combination of seven (mediated generalisation, reinforcement for generalising, training loosely, indiscriminable contingencies, multiple exemplars, accessing natural communities of reinforcement and programming common stimuli. Findings showed that the social life game, which combined seven generalisation techniques was significantly more successful in generalising target behaviours than the social skill game. In addition, these findings suggest this success may be due to the training being implemented in the participant's natural environment by staff who were familiar to the participant.

Similar results were also observed in a study by Mitchell, Regehr, Reaume and Feldman, (2010), who investigated the efficacy of a group-based social skills training intervention for adolescents with autism spectrum disorder. In addition, strategies that facilitate generalisation were included in the intervention curriculum, for example, individualised target behaviours, sufficient exemplars, common stimuli, mediated generalisation and reinforcing generalisation (Stokes & Baer, 1977). Three adolescents with autism spectrum disorder between the ages of 15 and 19 were recruited. Direct observations were used to assess the training effects and generalisation of social skills. Furthermore, Social Skills Rating System (SSRS) and Quality of Life measures were administered during pre-intervention, post-intervention and 3-month follow-up. All three participants were trained on a) introductions and b) initiating conversations. Participant one's final social skills was c) asking adults and peers for help, where as both participant two and three's third social skill was c) joining group activities. Training behaviour probes were conducted in a training room during role-plays and naturally occurring social opportunities. Adolescents meet twice a week over 12 training sessions. Social skill trainings were associated with the generalisation of target social skills across the SSRS and Quality of Life measure. Results were maintained at the 3-month follow-up.

Taken together, these findings suggest future social skills interventions should employ a combination of generalisation techniques, specifically those identified by Griffiths et al., (1997) and Mitchell et al., (2010), in order for young participants to generalise and maintain learnt social skills across time and settings.

Proposed study

This study aims to explore the impact of a brief social skills training intervention, which utilises both individual and group session, on the social interactions of three adolescents with Down syndrome. The study also aims to investigate the generalisation of skills from taught contexts to un-taught but familiar settings. Based on the results from individual and group-based interventions, the majority of literature suggests that group-based interventions are more effective. However, there are a few disadvantages to group-based settings. For example, in order for group-based interventions to show maximum effect, all participants require similar social skill deficits and cognitive functioning, which may be difficult for researchers to find (Smith et al, 2010). In contrast, individual-based interventions allow researchers to adapt the intervention to specifically address the participant's deficits but it loses the inherent social interactions that the group-based settings provide (Smith et al, 2010).

In relation to peer-mediation, not all participants in the current study had typically developing peers in their generalisation environment that could facilitate social skill training. In addition, the current model was used to reduce the exclusion of children from school and their peers, by implementing an intervention does not require the child to be removed from school for training.

Although previous literature has shown that young children and adults with disabilities were successful in generalising social skills through a combination of techniques (Chandler et al., 1992; Brown & Odom, 1994; Griffiths et al., 1997), further research is needed in determining whether these techniques are effective for adolescents with Down syndrome. The proposed study also aims to review peer's attitudes towards individuals with disabilities and whether there are differences in the perception of friendship quality of parents and children.

The following research questions were addressed in this study:

1) What are the effects of a brief social skills intervention on the frequency of interactions between an adolescent with Down syndrome and their peers?

2) Can a brief social skills intervention successfully teach adolescents with Down syndrome peer interaction skills and can these skills be generalised to other familiar environments?

3) What are the perceptions of parents and adolescents with Down syndrome on the quality of friendships?

4) What are the perceptions and behavioural intentions of peers towards individuals with disabilities?

CHAPTER 3

Method

Design

A single case multiple baseline design was employed for each participant across settings (Roane, Kelly & Fisher, 2003). The multiple baseline allowed for the participant's typical social behaviour to be observed in two familiar settings and to show behaviour change following the administration of the intervention. Multiple baselines are a highly adaptable strategy that allows researchers to investigate the effects of the independent variable across multiple settings, behaviours and/or participants, without having to remove the treatment variable to determine whether the changes in behaviour are a direct effect of the implementation of the treatment (Cooper, Heron & Heward, 2007). After the baseline phase was completed the intervention phase commenced. The intervention was presented in two different environmental contexts: at the participant's home and at events of the social club for individuals with Down syndrome. To determine whether the target behaviours had been generalised to other settings, the participant's social behaviour was measured again in the participants two generalisation settings during the generalisation phase.

Ethical Considerations

Ethical approval was obtained from the University of Canterbury Educational Research Human Ethics Committee (see Appendix A) prior to recruitment. Informed consent was obtained from three participants and their parents/caregivers, principals, teachers, teacher aides and/or after-school activity coordinators, and the participant's peers (and parents/caregivers) either from the participant's class and/or after-school activities provided consent. In addition, consent was obtained from the local social

club for individuals with Down syndrome coordinator for permission to allow for training sessions to occur at the social club events.

The researcher explained the purpose and procedures of the study, duration, risks and benefits of this study. The procedures for securing records for confidentiality of the participants, parents/caregivers, peers, teachers, teacher aides and peers were also explained. To ensure anonymity pseudonyms was used.

Recruitment

To recruit participants, the researcher distributed a poster via email outlining the purpose and description of the study to parents and members of the social club. The poster invited parents and adolescents to participate in this study. Parents who were interested contacted the researcher via email or at social club events to seek additional information about the study (See Appendices B(i)- L(iii) for recruitment forms).

Recruitment Criteria: Parents were required to answer yes to the five screening questions before their child was accepted into the study. Questions included:

1) Does your child have a diagnosis of Down syndrome?

2) Is your child between the ages of 13 and 18 years old?

3) Does your child participate in after-school activities?

4) Does your child attend the social club events regularly?

5) Does your child attend a mainstream school in the local region?

The first three individuals who met this criterion were accepted into the study and no further participants were sought. Participant and parent/caregiver information sheets about the study and consent forms were emailed to the participant's parents. Once consent has been obtained from participants and their parents, the researcher

administered the demographic questionnaire to determine which social skills the parents and individuals would like to develop or enhance.

With permission from the parents and individual, the schools and/or after-school activity coordinators, and the social club coordinator were contacted via their preferred method. Information about the study was distributed and they were informed about the family's interest in participating. A meeting was held to elaborate and discuss the logistics of the study. For each meeting, the principal/social club coordinator/activity coordinator, and any other person of interest (e.g. participant's teacher, participant's teacher aid, participant's activity teachers/coaches) was given a consent form and an information sheet about the study and the meeting allowed for any questions to be asked.

Once all personnel (teacher, social club and after-school activity coordinators) provided consent towards the study, information and consent forms were provided to all of the participant's peers who attend their school and/or after-school activity and their parents. Peers had the option of completing two questionnaires and expressed their interest by ticking the box on their consent form.

Participants

Three adolescents with Down syndrome (DS), three parents, two teachers and six peers participated in this study. The three adolescents with DS were two females and one male and two were of New Zealand/European descent and one of Indian/New Zealand descent. Gemma, Grayson and Caroline were known to the researcher through her involvement as a youth worker at the social club. Table 5 Describes the adolescents' demographic details.

Due to the small population of people with DS in the region and in order to protect the adolescent's identity and provide anonymity, only a basic demographic description of Gemma, Grayson and Caroline is reported.

Table 5
Demographic Information for the Three Participants with DS

Participant	Gender	Age (years)	Generalisation environment 1:	Generalisation environment 2:
Gemma	Female	15	Decile 7 high school	Dance classes
Grayson	Male	14	Decile 8 high school	Gymnastic lesson.
Caroline	Female	15	Dance classes	Basketball trainings

Gemma is a 15-year old female who attended a coeducational secondary decile 7 school. She was the middle child of three children and she attended dance classes once a week.

Grayson is a 15-year old male who attends a coeducational decile 8 school. He was the youngest of three siblings and attended gymnastic lessons once a week.

Caroline is a 15-year old female who attended basketball trainings and dance lessons once a week. Caroline was the oldest child of three children.

The three mothers were also recruited. The two teachers recruited were Gemma and Grayson's classroom teachers; one was female and one male. Six peers recruited were

between the ages of 13 and 18. Of these six peers, four were recruited from Grayson's class and two from Gemma's class.

Setting

There were three training settings and two generalisation settings. Training sessions were conducted at the participant's home, the social club and at a local mall. The social club was approached and agreed to offer their facilities for two of the group training sessions. A local mall was used as a location for two group-training sessions. Generalisation settings were conducted at two local high schools (Gemma and Grayson), one dance studio, a gymnastics gym and a basketball gym. All generalisation settings were approached to be locations for observations of generalisation and social interaction.

For Gemma, observations were taken in her classroom, and in a dance studio, where there were 10 other students in both of the two environments.

Grayson had observations taken in his classroom of 29 people and at a gymnastics gym with one other student being involved.

Caroline's observations were taken place in a dance studio with 9 other students and a basketball gym with 12 other people.

Materials

The following materials were used to record data and assist in implementing the intervention.

Video and Audio Equipment. The video footage required for observations of the three participants was captured using a Canon digital camera and was downloaded onto an Apple iMacbook Pro laptop computer. The semi-structured interviews were audio recorded using a high quality Olympus DS-2400 digital voice recorder.

Intervention Equipment

Laminated pictures for each step of the social skill intervention were given to participants to be used as prompts (see Appendix M)

Measures

During the recruitment process, standard demographic information was obtained from the participant and participant's family including age, ethnicity and gender. Parents and participant's were given the option to choose two social skills they would like to develop from the following list of six social skills provided: greetings/farewells, manners, paying attention to others/eye contact, initiating interactions and conversational skills- answering and asking questions.

Participants.

The following measures were administered to participants to measure social skills, the frequency of interactions and the quality of their friendships: 1. Prompts recording; 2. Observations; 3. Social Skills Improvement System; 4. Friendship Quality Questionnaire; 5. Behavioural Intentions Scale.

Prompt recording: The following measure was developed to determine whether participants were able to perform their selected social skills with the assistance of the researcher and as such, the intervention goals of unassisted/ initiated social skills were appropriate. The rationale for this measure was based on Vygotsky's (1978) zone of proximal development theory whereby a participant's supported performance is scaffolded to become their independent performance. Participants who were able to perform the social skills with assistance were eligible for the intervention. The researcher administered specific prompts to participants at social club events during the baseline, intervention and generalisation phases. Four prompt sessions were conducted and for each of these sessions, participants were prompted for

approximately 30-minutes. The number of prompts administered for each social skill was recorded and whether the response received was appropriate or inappropriate (see Appendix N (i) Opportunities Recording Form and Appendix N (ii) Opportunity Prompts)**.**

Observations were undertaken of the participant and their peers, teachers, teacher aides, after-school activity teachers and other staff members. The measure recorded the frequency of interactions across classroom, after-school activity and lunchtime observations. These interactions were recorded using the *Inclusive Classroom Observations System (ICOS)* (Cameron, 2004) measure and were coded for the type of interactions using the following codes.

Classroom and after-school activity observations focused on coding the five following interactions:

1. Academic.

2. Functional.

3. Behavioural

4. Social

5. Procedural.

See Appendix O (i) (ii) for further definitions of these codes.

Playground observations focused on coding the following interactions:

1) Academic

2) Functional.

3) Social

4) Behavioural.

See Appendix O (iii) for further details.

A video camera was used to ensure that assessments could be reliably undertaken and all interactions were accurately recorded, in addition to facilitating inter-rater reliability. Three forms (Appendix O (i) Classroom Observations Recording Form, Appendix O (ii) After-school Activity Observation Recording Form & Appendix O (iii) Playground Observations Recording Form) for direct observations were developed by the researcher to record interactions between the focus child and the person that they interacted with.

The social skills of Gemma, Grayson and Caroline were measured through the *Social Skills Improvement System* (updated SSRS; Gresham & Elliott, 2007). The purpose of this scale was to identify whether the individual has problems with social behaviour. There are three main scales that make up this instrument: social skills (teacher, parent and student); problem behaviours (teacher and parent forms); academic competence (teachers). The teacher form showed high internal consistency, where as the parent and individual forms overall were adequate. Reliability scores for test-retest were excellent in terms of the teacher form, however the test-retest scores for the SSIS-students-social skills was limited. Moderate to high correlations were found for construct validity (Gresham & Elliott, 2007). This measure was completed during the baseline and generalisation phase.

In order to measure friendship quality, participants completed the *Friendship Quality Questionnaire (FQQ)* (adaption of the FQQ; Parker & Asher, 1993). This measure consists of 23 primary items. Participants were asked to indicate how true a particular quality of their relationship with their best friend, using the following responses: 0 never true; 1 sometimes true; 2 always true. Internal consistency was at an acceptable level for each of the subscales, with the Cronbach alpha coefficients

between 0.71 and 0.86 (Parker & Asher, 1993). This measure was completed during the baseline phase.

Parents

A brief semi-structure interview for the participants' parents was conducted, with 8 open-ended questions regarding their child's friendship and relationship with their best friend. Thematic analysis was used to identify particular themes in the semi-structured interview data. This measure was completed during the baseline phase. In addition, parents completed the SSIS (described above) during baseline and generalisation phases.

Teachers.

Gemma and Grayson's teachers also completed the SSIS during the baseline phase. The academic scale was only distributed to teachers.

Peers.

The following measures were administered to peers to measure their attitudes and behavioural intentions towards individuals with disabilities.

The *Peers Attitudes Towards Individuals with Disability Scale (PATIDS)* (Bagley & Green, 1981) (adapted from the *Peers Attitudes towards the Handicapped Scale* PATHS; Bagley & Green, 1981) was used to assess the peer's attitudes towards adolescence with disabilities. The PATIDS consists of 30 statements that describe behaviours that are common in individuals with disabilities. Each statement was associated with one of the following subscales: physical disability (12 items- e.g. blindness, cerebral palsy or deaf), learning disability (10 items), or behavioural difficulty (8 items- emotional and psychological difficulties, including aggressive behaviour). The second scale was based on learning disabilities, however the items in this section are associated with general intellectual disabilities like individuals with

Down syndrome. Peers were asked to indicate whether they would prefer the adolescent to: 1) work with me in my group; 2) work in another group with someone else; 3) work in no group with no other students; 4) work outside of the class in another class or room; or 5) stay at home and not come to school. Responses were coded 1-5, with 5 being the most positive intention. The internal consistency coefficient for the PATHS is $\alpha=0.89$ and test-retest coefficient is $\alpha=0.75$. All three subscales had similar reliabilities, test-retest scores and internal consistencies (Bagley & Green, 1981)

Peers also completed the *Behavioural Intention Scale (BIS)* (adapted from BIS; Laws & Kelly, 2005): The BIS consist of 10 situations describing particular aspects of childhood friendship behaviour, for example: " I would say hello to her/him"; to "I would share a secret with her/him" (Laws & Kelly, 2005, p. 84). There are four responses for participants to choose from: no; probably no; probably yes; yes. Each response had a score from 1- 4 with 4 being a more positive intention. Internal consistency for BIS is acceptable for all 10 items ($\alpha= 0.86$)

Social Validity.

A brief semi-structured interview for participants and their parents was conducted with 11 open-ended questions on social validity, to determine whether the participants and their parents found the intervention beneficial. For each open-ended question, the researcher gave examples to the participants in order to prompt them. This interview was conducted two-weeks after the generalisation phase (See Appendix S).

Data Collection. All of the observations were videotaped using a video camera in the corner of the participant's classroom or their dance studio, basketball gym or gymnastics gym. The camera was set to a wide angle to include all areas of the

generalisation setting. To ensure that there was no interference with interactions at school and after-school activity trainings, the researcher maintained a 2-metre distance away from the participant and their peers, teachers or teacher aides.

All students that had consented to being videotaped wore wristbands. If students who had not given consent entered the room the camera angle was changed to keep them out of shot. The semi-structured interview on friendship quality and social validity were audio-recorded and transcribed. All transcripts were checked by participants and parents as accurate and acceptable prior to data analysis.

Procedure.

Baseline Phase

The baseline phase was carried out over a 1 week period. The following table outlines the measures administered to participants, parents, teachers and peers during the baseline phase:

Table 6.
Baseline Phase Timetable for Measures Administered to Participants, Parents, Teachers and Peers.

Gemma, Grayson and Caroline completed	Parents completed	Teachers completed	Peers completed
- Prompt recordings. - Observations in the classroom, playground and/or at after-school activity. - SSIS- S - FQQ	- SSIS-P - Friendship quality semi-structured interview	- SSIS-T	- PATID - BIS

Participants.

Firstly, the researcher prompted Gemma, Grayson and Caroline for target behaviours for approximately 30-minutes each during the social club event.

Secondly, the researcher then collected observations of the participants interacting with their peers and teachers, over the participant's generalisation environments: classroom, lunchtime and/or after-school activity (see Table 5). For Gemma and Grayson, interval recordings for observations were conducted at their schools, for example, 6 x 5-minute recording sessions in the classroom and at lunchtime (see Table 7 below).

For after-school activity trainings, observational data was recorded once a week, for different intervals during the activity training; for example, 2 x 5 minute recording sessions at the start and end of the training.

The following table illustrates the observation-recording timetable during the baseline period.

Table 7.
Observation recording timetable for baseline phase

Gemma	Grayson	Caroline
6 x 5-minute classroom observations.	6 x 5-minute classroom observations.	4 x 5-minute after-school activity one observations
6 x 5-minute lunchtime observations	6 x 5-minute lunchtime observations	
4 x 5-minute after-school activity observations	4 x 5-minute after-school activity observations	4 x 5-minute after-school activity two observations

Finally, Gemma, Grayson and Caroline completed the Social Skills Improvement System (SSIS) and the Friendship Quality Questionnaire (FQQ).

Parents.

A semi-structured interview of approximately 20 minutes was conducted with the participant's parents in relation to their child's friendship and relationship with their best friend. Each interview was audio recorded for reliability and validation purposes. In addition, each parent completed the SSIS.

Teachers.

Both Gemma and Grayson's teachers were given the SSIS to complete.

Peers.

All six peers were given the PATIDS and the BIS to complete.

Intervention phase:

The intervention period was conducted over a 4-week period, with a 2-week break in the middle to accommodate for school holidays. Once a week there was a individual and a group session for each participant. Two social skills were taught over the four-week period.

Table 8
A Timeline of the Intervention Period
Timeline of the intervention period for Gemma, Grayson and Caroline:

Week One: Social Skill One	Week Two: Social Skill One		Week Three Social Skill Two	Week Four Social Skill Two
1 individual session at home.	1 individual session at home	Two-week break- School holidays	1 individual session at home	1 individual session at home
1 group session at the mall	1 group session at social club.		1 group session at the mall	1 group session at the social club.

Individual sessions occurred at each of the participant's home and group sessions were conducted at the social club events and at the local shopping mall. Both sessions had a duration of approximately 30 minutes. The skills targeted were those identified by their parents and are presented in Table 9.

Table 9.
Social Skills Taught to Gemma, Grayson and Caroline

	Skill taught in Week 1 & 2	**Skill taught in 3 & 4**
Gemma	Initiating social interactions	Conversation skills
Grayson	Initiating social interactions	Conversation skills
Caroline	Initiating social interactions	Conversation skills

For each of the training sessions there were five stages: 1) Introduction or review of social skill; 2) Social skill steps; 3) Modelling; 4) Role-plays and; 5) Practice.

1) Introduction and review of social skill. A description of the social skill was given to participants at the start of the 30-minute session. The researcher explained the importance of the social skill and the benefits of the social outcome. For example, turn taking is when a person knows when it's their turn to start and finish talking during a conversation. For turn taking to occur, people have to be listening in order for them to know when to start talking and to respond appropriately. It is beneficial to know how to take turns during a conversation as it allows you to learn something new, to be listened by others and solve problems.

2) Social skill steps: There were four sub-components for each social skill and these subcomponents were called social skill steps. For example:

Step 1: Hear- be a good listener and hear what the other person is saying

Step 2: Do- smile and nod your head to show that you are listening

Step 3: Talk- when it's your turn to talk the other person will listen

Step 4: Wait- wait to hear what the other person will say once you're done talking

Each step had a picture associated with the step to prompt participants (see Appendix M). Participants were asked to verbally recite the steps back to the researcher.

3) Modelling**.** During the social club group sessions, the researcher modelled positive and negative scenarios for each social skill. For example, "For the positive model I would to looking at you as you speak, I would be listening to what you had to say and I would wait until you had finished talking before I would talk." "For the negative model I wouldn't look at you, I would be on my phone, fidgeting and I would interrupt you whilst you are speaking to me."

4) Role-plays. Participants were given four scenarios that required them to use the social skill. For example, roles were assigned to the participants for each scenario and the participant practiced the skill with the researcher or another participant. For example, conversation with a friend: "I would like you to show me that you are listening to me, making eye contact and nodding your head. When I am done talking, it's your turn to talk and I will make eye contact, smile and listen."

5) Practice: During the group sessions, the researcher prompted each participant for approximately 30-minutes, to practice the previously learnt social skill. When the skill was performed correctly, the researcher positively reinforced the participant through descriptive praise. If the social skill was not performed correctly the researcher gave the participant informative feedback, then modeled the correct way of performing the social skill and finally prompted the participant to perform the social skill again. The following example illustrates conversation skills during the practice step:

Prompt: "why don't you go and ask (insert name) what his/her plans for the weekend are, remember the social skill steps."

Praise: " I really liked how you were making eye contact, you waited until it was your turn to talk and asked questions."

Informative Feedback: " I really liked how you were making eye contact with (insert name), maybe next time you could nod your head every so often to let (insert name) know that you are listening the her/him."

Model: So remember to nod your head when someone is talking to you so that they know that you are listening to them. Shall we practice, how about you ask me what my plans are for the weekend are.

Prompt again: "why don't you ask (insert name) what his/her plans are for the weekend, remember the steps"

Treasure Hunt.

To facilitate Gemma, Grayson and Caroline's motivation during the group sessions, the researcher conducted a treasure hunt at the local shopping mall (see Appendix T for more information). During the treasure hunt the researcher employed the same techniques used in the practice stage to train participants to initiate social interaction (described above).

This project's brief intervention guide was modelled on the Social Skills Improvement System's Intervention Guide, which can be used in conjunction with the Social Skills Improvement System. This guide contains 20 different social skills, with the current study targeting skills modelled on a subset of the following 6 social skills: taking turns in conversations (Unit 1 pg 67); paying attention to others (Unit 3 pg 79); saying "please" and "thank you" (Unit 2 pg 73); Asking for Help (Unit 7 pg 103); Asking for Others to Do Things With You (Unit 14, pg 145); Introducing Yourself to Others (Unit 16, pg 157) (Gresham, 2007)

Table 10 presents a summary timeline of the brief intervention guide.

Table 10.
Social Skill Intervention Guide

	Week 1 Initiating social interactions	Week 2 Initiating social interactions		Week 3 Conversation skills	Week 4 Conversation skill
Individual Sessions	• Introduction of chosen social skill one • Modelling and role-play of correct and incorrect ways to do chosen social skill one. • Practice using chosen social skill	• Review chosen social skill steps • Modelling and role-play of correct and incorrect ways to do chosen social skill one • Practice using chosen social skill one	**Two week break: School Holidays**	• Introduction of chosen social skill two • Modelling and role-play of correct and incorrect ways to do chosen social skill one. • Practice using chosen social skill two	• Review chosen social skill steps • Modelling and role-play of correct and incorrect ways to do chosen social skill two. • Practice using chosen social skill two.
Group Sessions	• Local Mall: Review social skill steps • Modelling • **Practice** performing initiating social interactions at the mall through: • **Treasure Hunt:** • Prompts • Praise or informative feedback	**Before social club** • Review social skill steps • Modelling and role-play of chosen social skill two **During social club** • Practice performing social skill one at the social club through: • Prompts • Praise or informative feedback.		• Local Mall: Review social skill steps • Modelling and role-play of chosen social skill two • **Practice** performing conversations at mall through: • Prompts • Praise or informative feedback.	**Before social club** • Review social skill steps • Modelling and role-play of chosen social skill two **During social club** • Practice performing social skill two at the social club through: • Prompts • Praise or informative feedback.

Observational data were collected on the same schedule as in the baseline phase: 6 x 5- minute sessions each week at the participant's school and/or 4 x 5-minute intervals during the individual's after-school activity trainings. Each observational session was video recorded.

The researcher administered prompts to the participants on the same schedule as the baseline.

Generalisation phase.

As per the baseline phase, the researcher observed the individual's behaviour a week after the intervention, to determine whether there were any changes in behaviour from baseline across the generalisation settings. Prompts were administered again, on the same schedule as the baseline and intervention phase.

All three participants and their parents completed the SSIS again to determine whether there were any improvements in social skill scores.

Follow-up phase.

Two weeks after the generalisation phase the researcher conducted a brief semi-structured interview on the validity of the intervention with parents and participants.

Figure 1. Assessment Schedule across Baseline, Intervention, Post-Intervention and Follow-up Phases.

Baseline: 1 week	Intervention: 2 weeks	Holidays 2 weeks	Intervention: 2 weeks	Post-Intervention: 1 week	Two week Follow-up:
Participants: Complete SSIS and FQQ	Social Skill One: Participants receive 2 individual sessions and 2 group sessions over a 2-week period		Social Skill Two: Participants receives 2 individual sessions and 2 group sessions over a 2-week period	Participants complete SSIS	Participants and Parents complete social validity semi-structured interview
Parents: Semi-structured interview on Friendship Quality & SSIS-P				Parents complete SSIS-P	
Teachers: SSIS-T					
Peers: Complete PATID & BIS				**Peers:** Complete PATID & BIS	
Baseline recording at the after-school activity trainings (once a week) and/or during class (once a week) and lunchtime (once a week) at school	Baseline recording at after-school activity trainings (once a week) and/or during class (once a week) and lunchtime (once a week) at school		Baseline recording at the after-school activity trainings (once a week) and/or during class (once a week) and lunchtime (once a week) at school	Baseline recording at the after-school activity trainings (once a week) and/or during class (once a week) and lunchtime (once a week) at school	
Frequency of opportunity prompts	Frequency of opportunity prompts for social skill two.		Frequency of opportunity prompts for social skill one	Frequency of opportunity prompts	

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Data Analyses

Direct Observations.

Analyses of the classroom observations: 340 minutes of data were analysed from video recordings of Gemma and Grayson interacting with their peers, teachers, teacher aides and other staff members in their classroom.

For the analyses of lunchtime observations, 295 minutes of data were analysed from direct observations of Gemma and Grayson interacting with their peers, teachers and teacher aides during lunchtime.

Four hundred and ten minutes of after-school activity observations were analysed from video recordings of all three participants interacting with their peers and after-school activity teacher(s) at their after-school activity session.

All the video observations were numerically analysed and the researcher counted the number and type of interactions occurring. Raw data for all of the direct observations was entered into Excel and visually displayed using line graphs.

Semi-structured interviews.

Data that was collected from the semi-structured interviews were analysed using Thematic analysis and recorded in a Word document.

Reliability. The inter-observer rater was a Masters of Arts student, who was trained in the coding and definitions of the interactions categories for after-school activity, classroom and lunch time observations. For each interaction category the researcher discussed with the inter-observer rater, the definitions and provided examples from the video recordings. Training was ceased once the student had achieved 80% accuracy.

For classroom data, 20% of the video recordings, which was 68 minutes of the 340 minutes, were used to determine inter-observer reliability. Three observation sessions for participant one and two observations sessions for participant three were randomly selected.

Twenty per cent of the lunchtime data was used to determine the reliability, that is, 59 minutes of the 295 minutes of lunchtime video recordings. Two sessions for both participant one and two were randomly selected.

Similar to the classroom and lunchtime data, 20% of the after-school activity data was used for the calculation of reliability. Of the 410 minutes, 86 minutes of video recordings was used,

The percentage reliability index was computed using the following equation:

$$\text{Reliability index (\%)} = \frac{\text{Number of agreements}}{\text{Number of agreements} + \text{number of disagreements}} \times 100$$

The mean inter-observer agreement over the three participant's direct observations was 96% agreement. Grayson completed all 36 observational sessions. Gemma was absent (unwell) from three recording sessions, one classroom, lunchtime and after-school activity. Caroline was absent from two after-school activity sessions due to school commitments and her after-school activity finishing the school term one week early.

CHAPTER FOUR

Results

The results obtained from the participants, parents, teachers and peers are presented under the following section headings: **Part I** Summary of prompt recording; **Part II** Participant results: (A) Direct observations, (B) Social Skills Informative System (SSIS), (C) Friendship Quality Questionnaire (FQQ); **Part III** Parent's results: (A) Skills Informative System (SSIS), (B) Friendship quality interview; **Part IV** Teacher results; **Part V** Peer Results, (A) Peer's attitudes towards individuals with disabilities and (B) Behavioural intentions; **Part VI** Social Validity.

Part I

Prompt Recordings

Summary:

During the baseline phase, the researcher administered specific prompts to Gemma, Grayson and Caroline to determine whether the participants were able to consistently produce the target behaviours but not initiate them. Prompts were administered during the intervention and generalisation phase to determine whether there were any changes in target behaviours. Results during baseline, showed that Gemma, Grayson and Caroline were able to produce the target behaviours when prompted but could not initiate them. For the intervention and generalisation phase, results suggest there were no changes in the target behaviours (See Appendix U (i) (ii) (iii) for results).

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Part II

Participant Results

The following section reviews Gemma, Grayson and Caroline's results for the following measures: direct observations, SSIS and FQQ.

A.   *Direct observations*

Direct observations were conducted across Gemma, Grayson and Caroline's generalisation settings (classroom, lunchtime, and/or after-school activity) during baseline, intervention and generalisation phases. For classroom and lunchtime observations, 6 x 5minute recording sessions were conducted each week, where as after-school activity trainings consisted of 4 x 5minute recording sessions. Direct observations measured the total frequency of interactions between Gemma, Grayson and Caroline and their peers, teachers, teacher aides and/or after-school activity teachers. In addition, the initiators of the interactions, whether the responses were positive or negative and the type of interaction that occurred.

Gemma. Table 11 indicates that the mean number of interactions for classroom were similar across baseline ($\mu= 9$) and intervention ($\mu= 8$) phases. These interactions decreased during the generalisation ($\mu= 5$) phase. Lunchtime observations indicate the mean number of interactions were similar during baseline ($\mu= 3$), intervention ($\mu= 3$) and generalisation phases ($\mu= 2$). The mean number of interactions for after-school activity increased from the baseline ($\mu= 2$) to intervention ($\mu=5$) phase and slightly increased during the generalisation phase ($\mu=6$).

The mean number of interactions initiated by Gemma were similar for classroom observations across baseline ($\mu=1$), intervention ($\mu=1$). However during generalisation the mean number of initiations by Gemma decreased ($\mu=0$).

Lunchtime observations showed that the mean number of interactions initiated by Gemma were similar for baseline ($\mu=1$), intervention ($\mu=1$) and generalisation phases ($\mu=1$). For after-school activity observations, the mean number of interactions initiated by Gemma slightly increased from baseline ($\mu=0$) during intervention ($\mu=1$) to the generalisation phases ($\mu=1$).

Negative behaviours for classroom, lunchtime and after-school activity increased from the baseline to intervention phase. However during the generalisation phase, there were no negative responses across the three generalisation settings.

For classroom results, the mean number of social interactions was similar during the baseline ($\mu=1$) intervention ($\mu=1$) and generalisation phases ($\mu=1$). Lunchtime results showed a slight decreases in the mean number of social interactions for baseline ($\mu=4$), intervention ($\mu=3$) and generalisation phases ($\mu=2$). However, for after-school activity, there were slight increases in the mean number of social interactions from baseline ($\mu=1$) and intervention ($\mu=1$) to generalisation ($\mu=2$).

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Table 11.
Total Frequency of Interactions, Initiators of Interactions, Responses and the Type of Interactions for Gemma during Classroom, Lunchtime and After-school Activity Observations across Baseline, Intervention and Generalisation Phases.

		Baseline Phase (1 week)			Intervention Phase (4 week)			Generalisation Phase (1 week)		
		Classroom	Lunchtime	After-school	Classroom	Lunchtime	After-school	Classroom	Lunchtime	After-school
Number and time of Observations.		3 x 5min	3 x 5min	4 x 5min	23 x 5min	23 x 5min	12 x 5min	6 x 5min	6 x 5min	2 x 5min
Total number of Interactions		27	10	12	179	63	65	32	11	13
Mean number of interactions per week:		$\mu=9$	$\mu=3$	$\mu=3$	$\mu=8$	$\mu=3$	$\mu=5$	$\mu=5$	$\mu=2$	$\mu=6$
	Whole class interaction (WC)	WC PI OI	WC PI OI	WC PI OI	WC PI OI	WC PI OI	WC PI OI	WC PI OI	WC PI OI	WC PI OI
Interaction Initiated by:	Participant (PI) Peer, teacher or teacher aide (OI)	7 4 16	0 3 7	5 0 7	46 30 102	0 20 43	38 2 25	12 2 18	0 1 10	5 1 6
Positive or negative responses:		Pos Neg	Pos Neg	Pos Neg	Pos Neg	Pos Neg	Pos Neg	Pos Neg	Pos Neg	Pos Neg
	Positive (Pos) Negative (Neg)	26 1	9 1	10 2	174 5	58 5	64 1	32 0	11 0	13 0
Nature of Interactions:	Social (S)	S A F P B	S A F B	S A F P B	S A F P B	S A F B	S A F P B	S A F P B	S A F B	S A F P B
	Academic (A) Functional (F) Procedural (P) Behavioural (B)	1 22 - - 4	10 - - -	1 9 - 1 1	10 126 6 10 17	56 1 2 4	9 24 - 20 12	3 25 - 4 -	9 - 2 -	3 6 - 4 -

Figure 2 indicates that Gemma's baseline data during classroom observations were variable (μ=9, range= 3-16). During the intervention phase, the total frequency of interactions decreased (μ=8), however, after the school holidays the frequency of interactions increased especially during sessions 19 and 25. During the generalisation period, the total number of interactions decreased below baseline levels (μ=5). The total frequencies of interactions for lunchtime observations were the same throughout baseline (μ=3) and intervention (μ=3) phases. There was a slight decrease in interactions during the generalisation phase (μ=2).
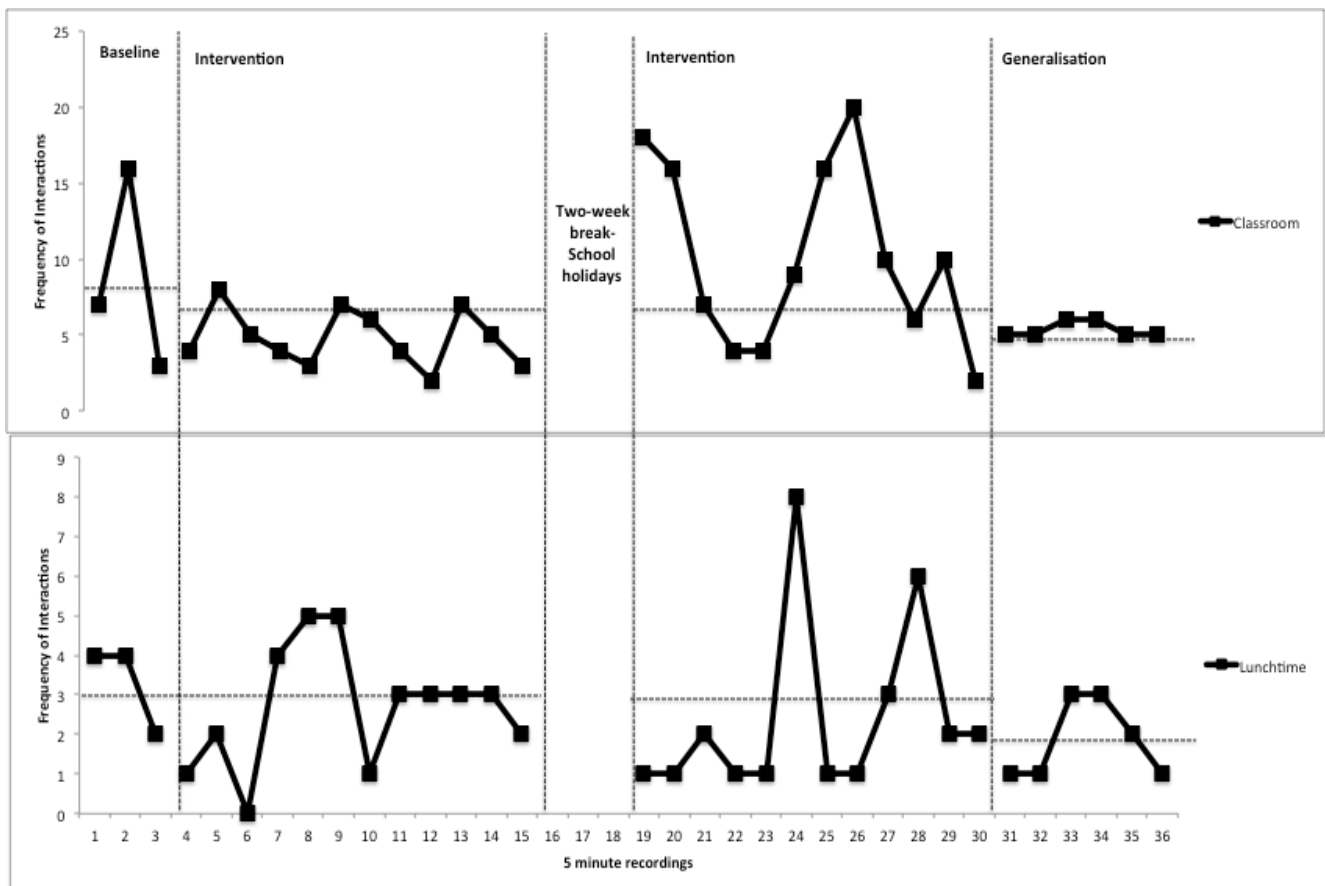
Figure 2. Frequency of interactions during classroom and lunchtime observations across baseline, intervention and generalisation phases for Gemma**.**

Gemma's after-school activity observations (Figure 3) showed increases in the total frequency of interactions from baseline (μ=3) to intervention (μ=5) and generalisation phases (μ=6). After the school holidays, the frequency of interactions during the intervention phase were variable (μ=5, range= 4-9).

Figure 3. Frequency of interactions during after-school activity observations across baseline, intervention and generalisation phases for Gemma.

Grayson. Table 12 indicates that the mean number of interactions for classroom observations, increased from baseline (μ= 4.5) to intervention (μ=5) and generalisation (μ= 7) phases. Lunchtime observations, suggest the mean number of interactions remained the same during baseline (μ= 2), intervention (μ= 2) and generalisation phases (μ= 2). The mean number of interactions for after-school activity increased from the baseline (μ= 4) to intervention (μ=7) and generalisation phases (μ=9).

The mean number of interactions initiated by Grayson, increased from baseline (μ=1) to intervention (μ=3). However during generalisation the mean number

of initiations by Grayson slightly decreased ($\mu=2$). Lunchtime observations showed that the mean number of interactions initiated by Grayson, increased from baseline ($\mu=1$) to intervention ($\mu=2$) and were similar through out the generalisation phases ($\mu=2$). For after-school activity observations, the mean number of interactions initiated by Grayson increased from the baseline ($\mu=1$) to intervention ($\mu=2$) and generalisation phases ($\mu=3$). Negative behaviours for classroom, lunchtime and after-school activity increased from the baseline to intervention phase. However during the generalisation phase, there were decreases in the number of negative responses across all three generalisation settings. For classroom results, the mean number of social interactions were similar during baseline ($\mu=1$) and intervention ($\mu=1$) phases, however there were slight increases in social interactions for the generalisation phases ($\mu=2$). Lunchtime results suggest that there were no changes in the mean number of social interactions across the baseline ($\mu=2$), intervention ($\mu=2$) and generalisation phases ($\mu=2$). Similar results were found for after-school activity, as there were also no changes in the mean number of social interactions across baseline ($\mu=1$) and intervention ($\mu=1$) to generalisation ($\mu=1$) phases.

Table 12

Total Frequency of Interactions, Responses, Initiators of Interactions and the Nature of Interactions for Grayson During Classroom, Lunchtime and After-school Activity Observations across Baseline, Intervention and Generalisation Phase.

		Baseline Phase (1 week)			Intervention Phase (4 weeks)			Generalisation Phase (1 week)		
		Classroom	Lunchtime	After-school	Classroom	Lunchtime	After-school	Classroom	Lunchtime	After-school
Number and time of Observations		6 x 5min	6 x 5min	4 x 5min	24 x 5min	23 x 5min	16 x 5min	6 x 5min	5 x 5min	4 x 5min
Total number of Interactions		27	12	17	125	58	114	47	14	38
Mean number of interactions per week:		μ= 4.5	μ= 2	μ= 4	μ=5	μ=2	μ=7	μ= 7	μ=2	μ=9
Interaction Initiated by:	Whole class interaction (WC) Participant (PI) Peer, teacher or teacher aide (OI)	WC PI OI 14 6 6	WC PI OI 0 2 10	WC PI OI 0 5 12	WC PI OI 13 66 43	WC PI OI 0 41 18	WC PI OI 9 36 69	WC PI OI 5 16 26	WC PI OI 0 10 4	WC PI OI 5 11 22
Positive or negative responses:	Positive (Pos) Negative (Neg)	Pos Neg 26 1	Pos Neg 10 2	Pos Neg 13 4	Pos Neg 114 11	Pos Neg 57 1	Pos Neg 108 6	Pos Neg 47 0	Pos Neg 14 0	Pos Neg 37 1
Nature of Interactions:	Social (S) Academic (A) Functional (F) Procedural (P) Behavioural (B)	S A F P B 3 13 1 - 9	S A F B 12 - - -	S A F P B 4 13 - - -	S A F P B 32 57 - 12 24	S A F B 43 1 4 11	S A F P B 12 61 1 4 36	S A F P B 13 23 - 3 8	S A F B 12 - - 2	S A F P B 6 17 - 1 14

Figure 4 indicates that interactions during classroom observations showed a slight

increase during the intervention phase. After the school holidays, the total number of

interactions remained higher than baseline levels until session 24 and 26 where

interactions decreased. Lunchtime observations showed little changes in the total

frequency of interactions across all three phases.
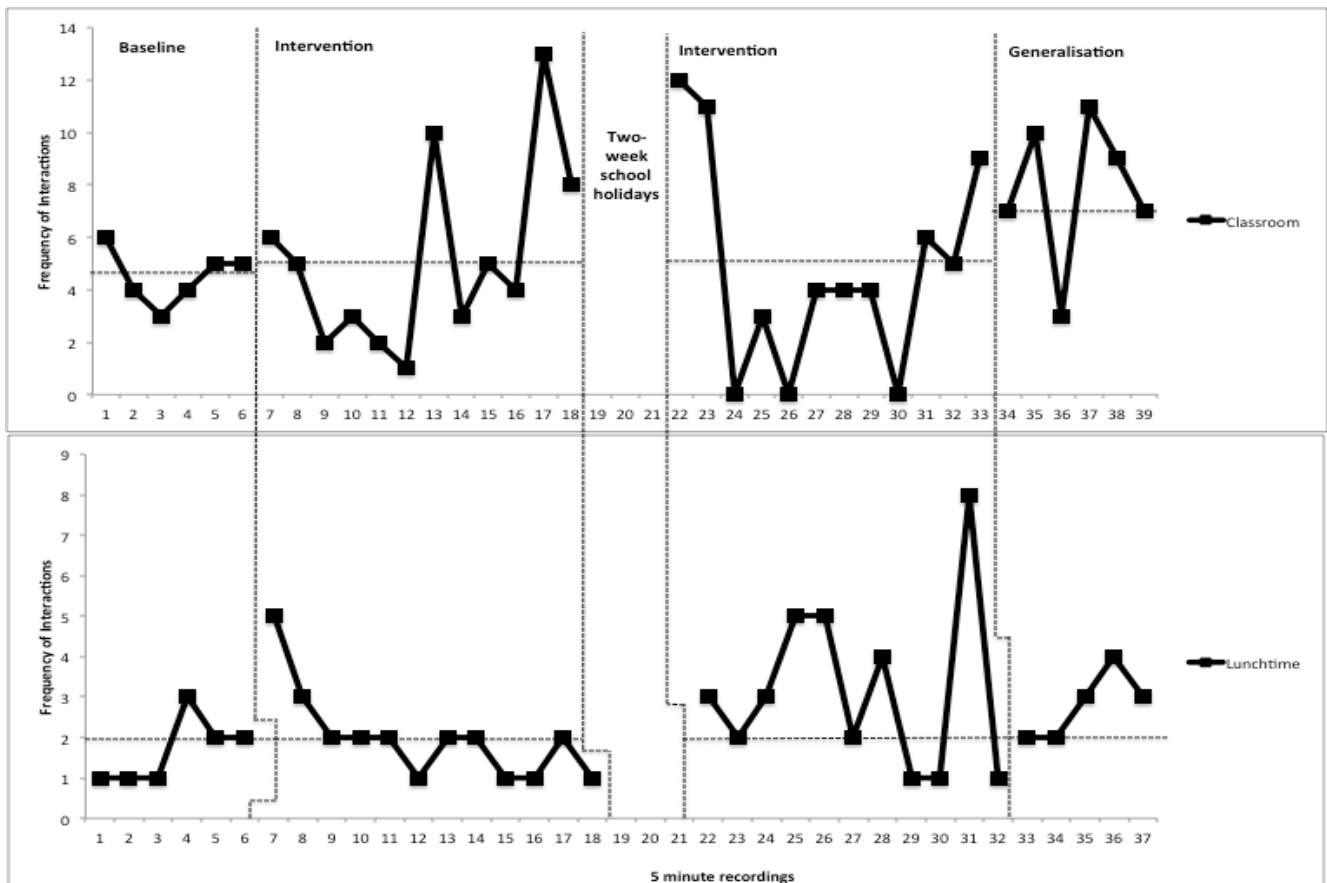
Figure 4. Frequency of interactions during classroom and lunchtime observations
across baseline, intervention and generalisation phases for Grayson

For after-school activity observations during the intervention phase (Figure 5), the

total frequency of interactions started to increase until session 8 where frequencies

started to decrease. After the school holidays during the intervention period the

frequency of interactions were variable (range, 4-12). During the generalisation phase,

the frequencies of interactions decrease. Despite these findings from the

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generalisation phase, the mean number of interactions during this phase (μ=9) still remains above the baseline mean (μ=4).

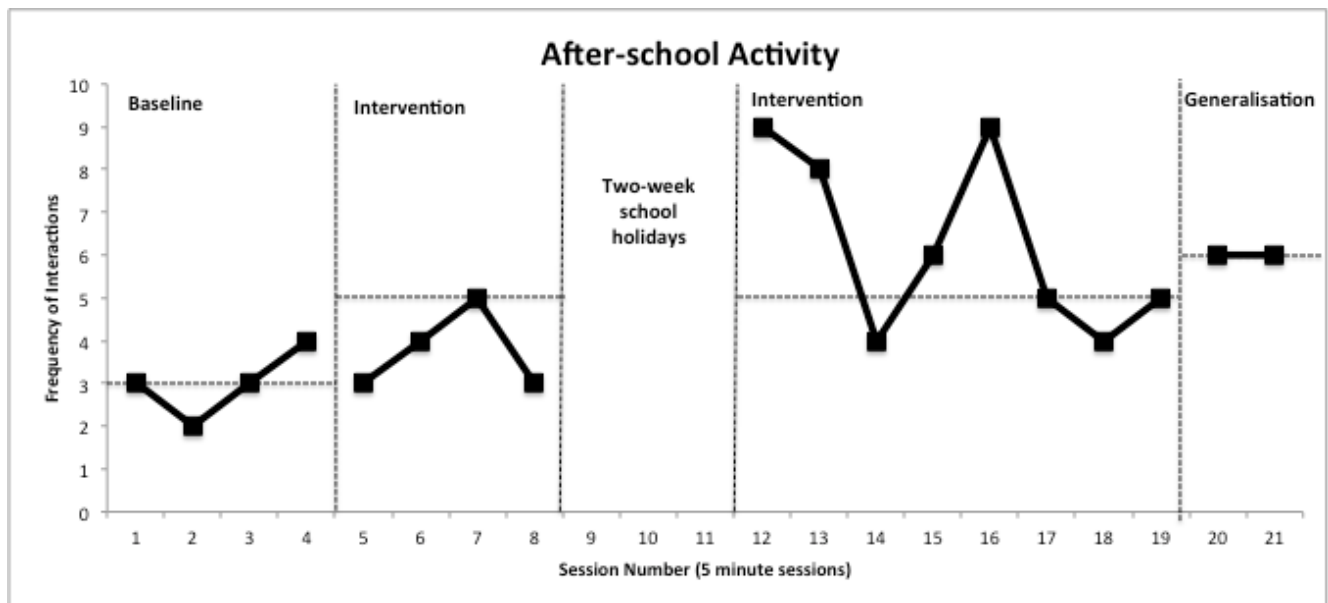*Figure 5* Frequency of interactions during after-school activity observations across baseline, intervention and generalisation phases for Grayson

Caroline. Table 13 indicates that the mean number of interactions for after-school activity one slightly increased from baseline (μ= 4) to intervention (μ= 5) and were similar during the generalisation phase (μ= 5). Similar results were found for after-school activity two, where the mean number of interactions for after-school activity two increased from the baseline (μ= 5) to intervention (μ=8) phase and remained alike during the generalisation phase (μ=8). The mean number of interactions initiated by Caroline during after-school activity one, slightly increased from baseline (μ=0) to intervention (μ=1). Interactions continued to increase slightly during the generalisation (μ=2) phase. For after-school activity two, the mean number of interactions initiated by Caroline slightly increased from baseline (μ=0) during intervention (μ=2) to the generalisation phases (μ=2). Negative behaviours for both

after-school activities remained the same from the baseline to intervention phase. However during the generalisation phase, there were no negative responses across the two generalisation settings. For after-school activity one, the mean number of social interactions was similar during the baseline ($\mu=1$) intervention ($\mu=1$) and generalisation phases ($\mu=1$). However, for after-school activity two, there were slight increases in the mean number of social interactions from baseline ($\mu=1$) to intervention ($\mu=2$) phases. During the generalisation ($\mu=1$) phase, the mean number of social interactions decreased.

Table 13.

Total Frequency of Interactions, Responses, Initiators of Interactions and the Nature of Interactions for Caroline During After-school Activity One and Two Observations across Baseline, Intervention and Generalisation Phase.

		Baseline Phase (1 week)		Intervention Phase (4 weeks)		Generalisation Phase (1 week)	
		After-school activity 1	After-school activity 2	After-school activity 1	After-school activity 2	After-school activity 1	After-school activity 2
Number and time of Observations		4 x 5min	4 x 5min	12 x 5min	12 x 5min	4 x 5min	4 x 5min
Total number of Interactions		16	21	64	97	23	33
Mean number of interactions per week:		μ= 4	μ= 5	μ=5	μ=8	μ=5	μ=8
		WC PI OI	WC PI OI	WC PI OI	WC PI OI	WC PI OI	WC PI OI
Interaction Initiated by:	Whole class interaction (WC) Participant (PI) Peer, teacher or teacher aide (OI)	10 1 5	6 3 12	36 10 18	41 32 24	10 5 8	12 9 12
		Pos Neg	Pos Neg	Pos Neg	Pos Neg	Pos Neg	Pos Neg
Positive or negative responses:	Positive (Pos) Negative (Neg)	15 1	19 2	63 1	96 1	23 0	33 0
		S A F P B	S A F P B	S A F P B	S A F P B	S A F P B	S A F P B
Nature of Interactions:	Social (S) Academic (A) Functional (F) Procedural (P) Behavioural (B)	- 9 - 5 2	3 11 - 2 5	16 31 - 4 13	28 52 2 5 10	5 10 - 5 3	2 17 - 5 9

Figure 6 indicates that after-school activity one shows that frequency of interactions during baseline and intervention phases were alike (μ=4, μ=4). After the school holidays during the intervention period the frequency of interactions were variable (range, 4-12). During the generalisation phase, the frequency of interactions began to decrease. Despite these generalisation findings the mean number of interactions during this phase (μ=9) remained above the baseline mean. For after-school activity two, the frequency of interactions increased from the baseline (μ=5) to intervention phase (μ=9). After the school holidays during the intervention phase, the frequency of interactions were variable (range= 5 to 11) and the mean number of interactions began to decrease (μ=7). Similar variability's to the intervention phase were observed in the generalisation phase, but the mean number of frequency of interactions (μ=8) remains above the baseline mean (μ=5).
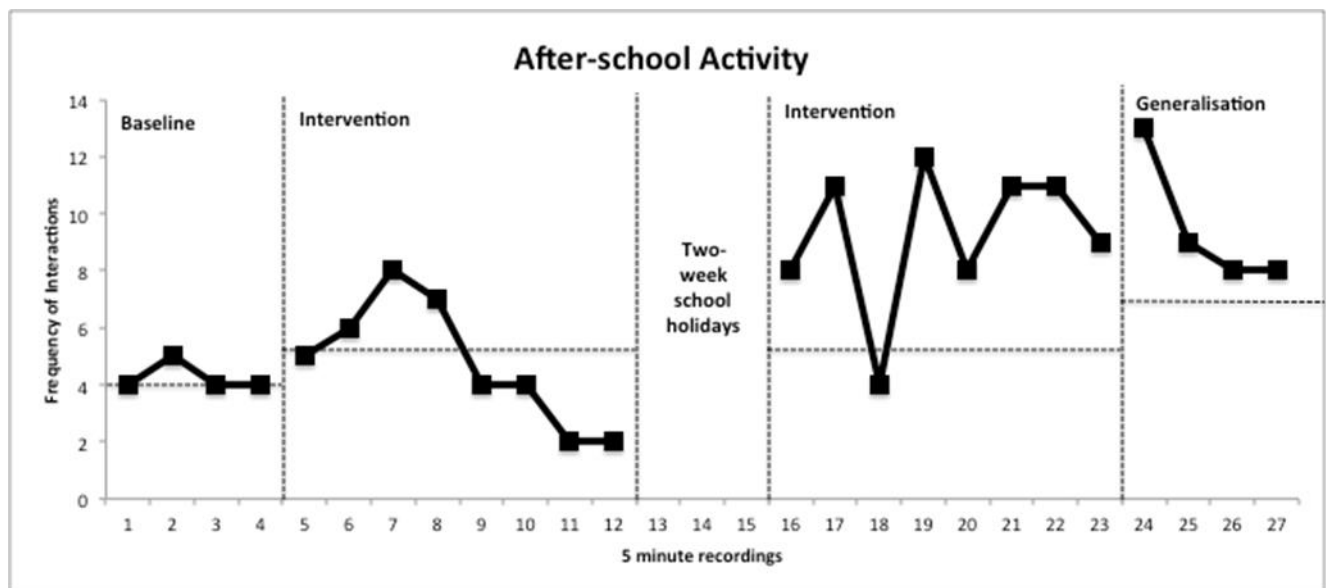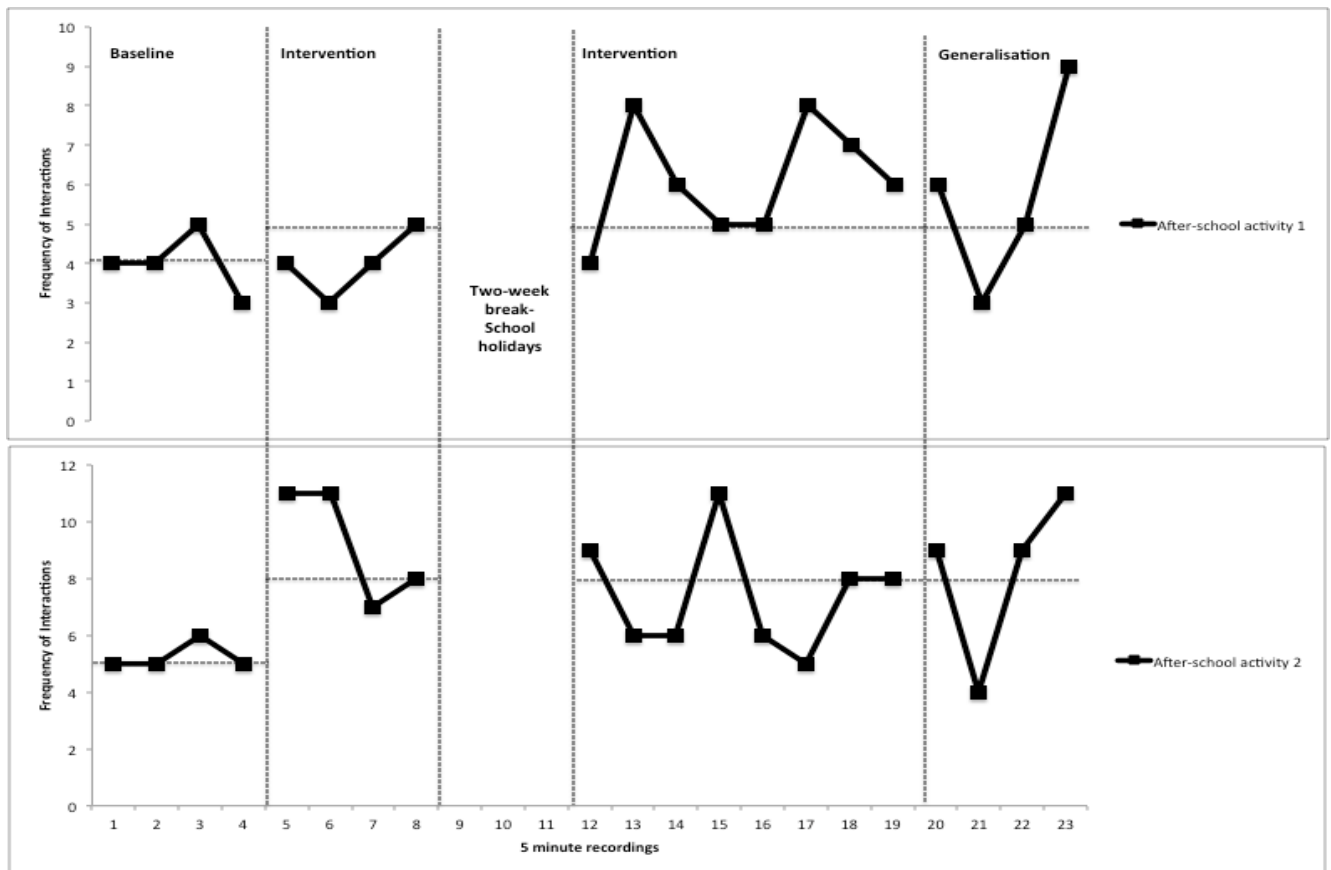
Figure 6 Frequency of interactions during after-school activity 1 & 2 observations across baseline, intervention and generalisation phases for Caroline.

B. *Social Skills Improvement System Student Form (SSIS-S).*

The following self-report measure was administered to Gemma, Grayson and

Caroline, during baseline and generalisation phases, to determine their perceptions on

their social and problem behaviours.

Table 14.
Social Skills Improvement System Student Form (SSIS-S): Gemma's Social Skills and Problem Behaviour Results during Baseline and Generalisation Phases.

	Baseline phase		Generalisation phase	
	Social Skills scale	Problem Behaviour scale	Social Skills scale	Problem Behaviour scale
Raw Score	117	34	92	20
Standard Score	116	115	98	101
Percentile	87	84	43	51
Confidence Interval	113-119	112-118	92-104	95-107
Behaviour Level	Above Average	Average	Above Average	Average

Gemma. Table 14 indicates that during the baseline phase, Gemma perceived her

social skills to be above average and her . problem behaviours to be about average for

females and males her own age.

Gemma's self-ratings during the generalisation phase were similar to her

baseline phase results. Gemma perceived her social skills to be average and her

problem behaviours to be about average for female and males her own age.

Table 15.
Social Skills Improvement System Student Form (SSIS-S): Grayson's Social Skills and Problem Behaviour Results during Baseline and Generalisation Phases.

| | Baseline phase | | Generalisation phase | |
	Social Skills scale	Problem Behaviour scale	Social Skills scale	Problem Behaviour scale
Raw Score	137	19	129	8
Standard Score	131	100	125	88
Percentile	>99	51	96	18
Confidence Interval	125-137	94-106	119-131	82-94
Behaviour Level	Above Average	Average	Above Average	Average

Grayson. Table 15 indicates that Grayson percieved his social skills to be above average and his problem behaviours to be about average for female and males his own age. During the generalisation phase, Grayson's ratings were similar to his baseline results. Grayson perceived his social skills to be above average and his problem behaviours to be about average for females and males his own age.

Table 16.

Social Skills Improvement System Student Form (SSIS-S) Caroline's Social Skills and Problem Behaviour Results during Baseline and Generalisation Phases

	Baseline phase		Generalisation phase	
	Social Skills scale	Problem Behaviour scale	Social Skills scale	Problem Behaviour scale
Raw Score	130	13	133	9
Standard Score	126	94	128	89
Percentile	97	33	98	21
Confidence Interval	120-132	88-100	122-134	83-95
Behaviour Level	Above Average	Average	Average	Average

Caroline. Table 16 indicates that during baseline, Caroline percieved her social skills to be well above average and her problem behaviours to be average for females and males her age. During generalisation phase, Caroline's self-rating social skill scores decreased and Caroline perceived her social skills to be average for females and males her age. There were no changes in Caroline's self-reports for her problem behaviour during the generalisation phase, as she believed her problem behaviours were average for females and males her age.

C. *Friendship Quality Questionnaire (FQQ)*

The following self-rating measures were administered to Gemma, Grayson and

Caroline during the baseline phase to determine their perceptions on the quality of

their friendship with their best friend.

Table 17.
*Gemma, Grayson and Caroline's Friendship Quality Questionnaire (FQQ) Results
during the Baseline Phase.*

Friendship Quality Questionnaire (FQQ) (Range:0-46)

Participant	Total Raw Score	Companionship (8)	Conflict (8)	Help (10)	Security (10)	Closeness (10)	Friendship Measure
Gemma	36	7	3	8	8	10	High quality
Grayson	20	4	0	2	6	8	Moderate
Caroline	31	7	1	7	6	10	High Quality

Note: The possible scores for each subscale are in the brackets above.

Gemma. Gemma believed her friendship with her best friend was of high quality.

This is apparent in the subscale rawscores, that show very high scores in

companionship, help, security and closeness scales, in addition, a very low score in

the conflict subscale.

Grayson. Grayson believed he had a moderately high quality friendship with his best

friend. The subscale raw scores were low for companionship and help, where as his

subscale scores for secruity and closeness were high. With a raw score of 0, Grayson

believed that there was no conflict in his friendship with his best friend

Caroline. Caroline's self rating scores suggest that she believed her friendship with

her best friend was high quality. Similar to Gemma's raw scores, Caroline's subscale

scores were high for companionship, help security and closeness. In addition,

Caroline's conflict subscale scores were considerable low.

Part II Parent Results

A.   *Social Skills Improvement System Parent Form (SSIS-P).*

The SSIS was administered to parents during the baseline and generalisation phase, to determine their perceptions on their child's social and problem behaviours.

The following section reviews Gemma, Grayson and Caroline's parent reports for the following measures: Social Skills Improvement System (SSIS) and a semi-structured interview on their child's friendship quality.

Table 18.
Social Skills Improvement System Parent Form (SSIS-P): Gemma's Parent Report Results for Social Skills and Problem Behaviour during Baseline and Generalisation Phase.

	Baseline phase		Generalisation phase	
	Social Skills scale	Problem Behaviour scale	Social Skills scale	Problem Behaviour scale
Raw Score	70	22	97	25
Standard Score	76	110	97	114
Percentile	7	78	42	83
Confidence Interval	70-82	104-116	91-103	111-120
Behaviour Level	Below Average	Average	Average	Average

Gemma. Parent report of Gemma's social skills during baseline, suggest that Gemma's parent perceived her child's social skills to be below average and her problem behaviuors to be about average. During the generalisation phase, parent report of Gemma's social skills increased as Gemma's parent perceived her social

skills to be average. Gemma's problem behaviours during generalisation were similar

to baseline as Gemma's parent percieved her problem behaviours to be about average.

Table 19.
*Social Skills Improvement System Parent Form (SSIS-P): Grayson's Parent Report
Results for Social Skills and Problem Behaviour during Baseline and Generalisation
Phase.*

	Baseline phase		Generalisation phase	
	Social Skills scale	Problem Behaviour scale	Social Skills scale	Problem Behaviour scale
Raw Score	86	24	75	31
Standard Score	88	113	80	121
Percentile	20	82	9	92
Confidence Interval	82-94	107-119	74-86	115-127
Behaviour Level	Average	Average	Below Average	Above Average

Grayson. Parent report of Grayson's Social Skills and Problem Behaviours during

baseline, suggest that Grayson's parent percieved his Social Skills and Problem

Behaviours to be average. During the generalisation phase, parent report of Grayson's

Social Skills decreased and Grayson's parent believed his Social Skills were below

average. Similar to baseline Problem Behaviour reports, Grayson's parent perceived

his Problem Behaviours to be average during the generalisation phase.

Table 20.

Social Skills Improvement System Parent Form (SSIS-P): Caroline's Parent Report Results
for Social Skills and Problem Behaviour during Baseline and Generalisation Phase.

	Baseline phase		Generalisation phase	
	Social Skills scale	Problem Behaviour scale	Social Skills scale	Problem Behaviour scale
Raw Score	98	16	90	12
Standard Score	98	103	91	98
Percentile	44	62	27	50
Confidence Interval	92-104	97-109	85-97	92-104
Behaviour Level	Average	Average	Average	Average

Caroline. Parent report of Caroline's Social Skills and Problem Behaviours suggest

that Caroline's parent percieved her Social Skills and Problem Behaviours to be

average. During the generalisation phase, the parent report of Caroline's Social Skills

and Problem Behaviours were similar to the baseline phase. Caroline's parent

percieved her Social Skills and Problem Behaviours to be average.

B. *Parent friendship quality semi-structured interview*.

The following measure was conducted during the baseline phase, with Gemma, Grayson and Caroline's parents, to determine their perceptions on the quality of their child's friendship with their best friend. Parents were asked eight open-ended questions that outlined the quality of their child's friendships. Thematic analysis identified five themes from these semi-structured interviews: companionship, closeness, security, help and conflict. Overall results showed that there are similarities and differences in the responses given by the parents. All three parents identified their child as having a best friend. Two of the three parents identified the same best friend as their child. Gemma and Caroline both met their best friends through their parents, who met through their early intervention service provider. Gemma's mother did not believe that Gemma would remember it for example, *"At school, actually they met at the [early intervention service provider]but I don't think they would remember it."* Grayson and his best friend met through their parents introducing themselves at the local swimming pool.

Companionship

All three parents identified how often their child and their best friend spent time together and activities that their child and best friend did when they were together. For example, Gemma's mother mentioned that Gemma and her best friend *"spend most of their time together at school and don't really hang out after school"*. In addition, Gemma's mother reported that when Gemma and her best do hang out they *"spend the whole time in her room dancing and playing games."* For Grayson, his mother stated that he *" only hangs out with his best friend at the social club"* and participates in *"what ever activities are going on at the social club."* Parents also identified other issues which impacted their child's ability to spend time with their

friend, for example, Caroline's mother reported that it was hard to arrange a good time for Caroline and her best friend to spend time together, because her best friend has a medical condition that requires a lot of knowledge and management. In addition, Caroline's mother mentioned that *"with her (best friend) medical condition it's hard for her to come over and stay the night at our house so Caroline usually goes over there."*

Closeness. Two parents reported that their child had a close bond with their best friend. For example, both Gemma and Caroline's parents believed that their child would *"miss her best friend if she wasn't around all the time."*

Security. Parents believed that their child and best friend would confide in each other about important things. For example, both Gemma and Caroline's mothers believed that their child and best friend would share secrets with each other but they could not recall a time where they have. Where as, Grayson's parent mentioned that he *"doesn't really have any secrets, he tends to tell people if there is something wrong or if he has done something".*

Help. All parents believed that their child would help their best friend when they needed it, for example, all mothers believed that their child and best friend *"would both stick up for each other."* Gemma and Caroline's parents could not recall a time where this may have occurred however, Grayson's mother stated that Grayson, *"has stuck up for a friend at school before".*

Conflict. All three parents reported how often their child had conflict with their best friend. For example, Gemma's mother reported that there were times that Gemma and her best friend would disagree, especially if her best friend was *"not doing something a way she (Gemma) wanted it to be done"*, but these disagreements would not occur often and if they did *"they wouldn't take long"* to make-up. Similarly, Caroline's

mother stated, *"there probably has been times that Caroline and her best friend have disagreed with each other"* but they would *"definitely"* resolve the issue quickly. Grayson's parent revealed that Grayson and his best friend did get into disagreements and cited that was one of the reasons why play dates stopped when they were younger. However she also mentioned that they *"would always make up quickly"* and that Grayson *"doesn't seem to hold grudges"*.

Part III Social Skills Improvement System Teacher Form (SSIS-T)

The following self-report measure was administered to Gemma and Grayson's classroom teachers to determine their perceptions of their student's Social Skills, Problem Behaviours and Academic Competence. The SSIS-T was distributed during the baseline phase, however these forms were not returned back to the researcher until the generalisation phase, therefore teacher reports during the generalisation phase were terminated for Gemma and Grayson.

Table 21.
Skills Improvement System Teacher Form (SSIS-T) Social Skills Scale Results during Intervention phase:

Child's Name	Raw Score	Standard Score	Percentile	Confidence Interval	Behaviour Level
Gemma	79	87	21	82-92	Average
Grayson	77	86	19	81-91	Average
SSIS-P: Problem Behaviours scale results during Intervention phase:					
Gemma	9	100	59	94-106	Average
Grayson	34	132	96	126-138	Well-above Average
SSIS-P: Academic scale results during Intervention phase:					
Gemma	2	60	1	54-66	Below Average

Gemma. Teacher report of Gemma's Social Skills and Problem behaviours indicate that Gemma's teacher believed her Social Skills and Problem Behaviours were average. In addition, Gemma's teacher reported that she believed Gemma's Academic Competence to be well below average.

Grayson. Teacher report of Grayson's Social Skills indicate that Grayson's teacher believed his social skills are average. In addition, Grayson's teacher believed that Grayson displayed more Problem Behaviours than average. Grayson's teacher did not feel comfortable rating Grayson's academic compentencies due to limited teaching opportunities with him.

Caroline. Caroline's classroom teacher did not report her Social Skills, Problem Behaviours and Academic Competence due to a lack of consent being obtained from Caroline's school.

<center>Part IV Peer Results</center>

The following section reviews the peer results for the following measures: Peers Attitudes Towards Individuals with Disabilities (PATID) and Behavioural Intention Scale (BIS). Table 22 and Table 23 indicate the overall results for attitudes and behavioural intentions of six peers towards individuals with disabilities. Peers 1 and 2 had intellectual disabilities and peers 3 -6 were typically developing. Peer 1 and 2 were recruited from Gemma's classroom and peers 3 to 6 were recruited from Grayson's classroom.

A. Peer Attitudes Towards Individuals with Disabilities (PATID) Results:

There were three different domains of disabilities used in the PATID: Physical,

Intellectual and Behavioural.

Table 22.
Peer Attitudes Towards Individuals with Disabilities (PATID): n=6

Peer	Total Raw Score (150)	Physical Raw score (60)	Intellectual Raw Score (50)	Behavioural Raw Score (40)	Percentile Rank	Attitude Measure
P1	108	47	42	19	26-75	Average Attitude
P2	124	51	46	27	93-99	Very positive attitude
P3	122	58	43	21	76-92	Very positive attitude
P4	118	51	44	23	76-92	Above average attitude
P5	124	45	46	33	93-99	Very positive attitude
P6	141	57	47	37	93-99	Very positive attitude

Table 22 indicates that all peers achieved a total raw score between 108- 141. The

average total raw score was 122, suggesting 'very positive attitude' towards

individuals with disabilities.

B. Behavioural Intention Scale (BIS)

The BIS used four examples of individuals with physical and intellectual disabilities.

Examples 1 and 3 were individuals with cerebral palsy and examples 2 and 4 were

individuals with Down syndrome. For example, 'Jane is 15 years old and has cerebral

palsy. Jane uses a wheel-chair to get around, especially when she goes to school. Jane

loves horse riding and chatting to friends. She often phones them in the evening.' (See

Appendix R for further details)

Table 23.
Behavioural Intention Scale (BIS)

Peer	Total Score (120)	CP 1 score (30)	DS 2 score (30)	CP 3 score (30)	DS 4 score (30)	Attitude Measure
P1	119	29	30	30	30	High intentions
P2	108	21	27	30	30	High intentions
P3	79	19	20	19	21	Moderate intentions
P4	76	20	17	22	17	Moderate intentions
P5	60	15	16	16	13	Moderate intentions
P6	96	19	24	27	26	High intentions

Notes: CP 1: example 1 cerebral palsy; DS 2: example 2 Down syndrome; CP 3: example 3 cerebral palsy; DS 4: example 4 Down syndrome.

Table 23 indicates that all peers achieved a total raw score between 60- 119. Half of the participants had high behavioural intentions towards individuals with disabilities, and the other half had moderate behavioural intentions. The average total raw score of 90, indicated that overall peers had high behavioural intentions towards individuals with disabilities.

Part V Social Validity Interviews

The following semi-structured interviews were conducted during the follow-up phase. Participants and parents were asked 11 open-ended questions on the enjoyment and helpfulness of the intervention.

Participants.

Two of the participants, Gemma and Grayson revealed that they liked participating in the individual and group training sessions and enjoyed talking with

the researcher. They also found those sessions helpful and were able to apply the social skills they learnt.

However Caroline, found that the individual sessions were relatively boring but she really enjoyed the group sessions at the mall and social club. For example, *"half of it was boring but the other half was good"*, she mentioned that she *"loved"* the group sessions at the mall because she *"found them helpful"* and got to *"hang out with the you (researcher) all day."*

All participants found the pictorial prompts and role-plays useful when remembering and practicing the social skill steps, describing the role-plays as *"interesting"* and the pictures as *"helpful."*

Initiating social interactions

All participants believed that they acquired the skills to initiate social interaction with their peers. For example, Gemma stated that she *"would go up to her (best friend) and ask, but she hasn't done it yet because she (best friend) has been away"*, Caroline said she *"definitely would ask someone"*. However Grayson said that he *"might ask someone for help"* but he *"would"* ask someone to hang out with him.

Conversational Skills

Similar responses were also apparent for the acquisition of conversational skills, for example, Grayson stated that he is "*good at waiting for people to finish speaking"* now. Both Caroline and Gemma stated that they *"would be able to have a conversation with someone."*

Parents

Change in behaviour

Two out of the three parents found that their child's social behaviour had changed during and after the intervention.

Gemma's mother reported that Gemma *"tends to be talking more, like more one-on-one conversations. I noticed that in the car going to the social club."*

Caroline's mother reported a change in Caroline's behaviour during and after the intervention, for example, *"she seems to more aware of people around her and how to act. She is using a lot more intuition, is seeing things need to be done and going and doing them."*

Grayson's mother was not able to identify changes in social behaviour post-intervention stating *"I don't think I have noticed any changes, but I am sure there must have been, I just haven't been very observant."*

Conversation skills

All three parents believed that their child had improved in their conversational skills in environments such as school and home and provided examples of changes to their child's skills level in relation to social rules and the needs of the conversational partner. Gemma's mother noted an increase in Gemma's apparent interest in the experiences of others that had not been observed pre-intervention, for example, *"she always comes home from school and asks what I have been doing and how work was."* Caroline's mother reported a more deliberate focus on maintaining eye contact during conversational exchanges, for example,*"she has been making a conscious effort to look at people more when she is having conversations with friends at school."*

Grayson's mother identified an increase in the awareness of the conventions of turn taking during conversation and believed he had been making an effort to wait for his turn, for example *"he is trying not to interrupt people when he is talking to them…. it's in the back of his mind."*

Initiating social interactions

Two parents were able to recall a time where their child had asked someone to help them or "hang out" with them during or after the intervention. Gemma's mother reported that Gemma initiated a social interaction in order to spend time with her best friend, "*she asked if her best friend could come and play and I told her to ask her friend's mum so she went up to her and asked if she was allowed to come over.*" Similar results were reported by Caroline's mother, who stated "*she is pretty good at that….she has been asking kids to hang out with her at school and they have been.*" Grayson's mother reported that she had not observed her child asking a friend to hang out with him but believed that the idea was in his mind, stating *"there hasn't been a time but there have been times where he has said to me, we could do this and he has maybe assumed I am going to follow up with it…..it is in his mind but he hasn't initiated anything*." Grayson's mother believed the study duration may have been a factor, stating "*if the study were longer he would be more inclined as it takes quite a lot of input before the outcome comes.*" She identified that Grayson undertook many after-school activities which reduced the opportunities to organise a play date, commenting *"life is busy….the only day that we would be free is Friday nights. I have thought about it but the reality is that it will take me to be the proactive one but then possibly once its happened he'd be like more inclined."* One parent took the opportunity to discuss an important variable that can influence play date opportunities between her child and his peers. For example,

"There have been a couple of times where people at school have had him over or they have been over here and there has been you know birthday parties that he has been invited to but the reality is for someone from school to do that, its reaching out. It's a non-formal situation and they feel like its something they should do and they are

probably waiting for it to end. I mean that's just the reality I don't feel resentment about that. Its sad but I can totally understand where they are coming from, absolutely. Cause a normal play date is just you guys doing this and I'm doing my thing, they would feel like they would have to manage it. Most parents are exhausted and busy."

CHAPTER FIVE

DISCUSSION

The aim of this study was to explore the impact of a brief social skills intervention, on social interactions and generalisation of social skills for Gemma, Grayson and Caroline. Data were gathered from individuals, parents, teachers and peers over a 6-week period.

Frequency of interactions

The first research question concerned the effects of a social skills training intervention on the frequency of interactions between an adolescent with Down syndrome and their peers, teachers and teacher aides. Overall, results suggest an increase in the frequency of interactions in at least one generalisation setting for all participants. To determine the frequency of interactions, baseline data were collected in three 5-minute observations for all participants.

Gemma

For Gemma, baseline data during classroom observations were variable. This variability may indicate that these interactions are an emerging skill that is not yet apparent at every opportunity. This variability may also be attributable to fewer available data points, due to Gemma being absent from school because of illness. Fewer data points reduces the chance for a more stable pattern to emerge. Additionally, observations may have been influenced by the presence of the researcher. During intervention phase part one, the mean number of interactions decreased, however, after the school holidays the frequency of interactions increased especially during recording sessions 19 and 25. This may have been due to the classroom being separated into smaller groups, therefore providing Gemma with more opportunities to interact with her peers. During the generalisation phase, the mean

number of interactions per session regressed back to baseline levels. These findings were similar to results from Tofte-Tipps and colleagues' (1982) study, which found variability in the frequency of compliments during the post-intervention phase.

The total frequency of interactions for lunchtime observations remained the same throughout baseline and intervention periods. There was a slight decrease in interactions during the generalisation phase, which may be attributed to Gemma being unwell and could have affected her motivation for initiating and participating in social interactions.

Gemma's after-school activity observations showed increases in the total frequency of interactions during intervention and generalisation. After the school holidays, the frequency of interactions during the intervention phase was variable. During this phase of the intervention specifically sessions 12 and 16, observations were conducted at the start of the after-school activity lesson, suggesting that opportunities for interactions occur at the start of the lesson.

Grayson

For Grayson, baseline was low but stable. Interactions during classroom observations increased slightly during the intervention phase. After the school holidays, the total number of interactions remained higher than baseline levels until session 24 and 26 where interactions decreased to zero due to the lesson content involved the class watching a video. Lunchtime observations for Grayson showed there were no changes in the total frequency of interactions across all three phases. These results suggest that Gemma and Grayson may have required more time and guidance from the researcher in order to master the independence of the skill and as Vygotsky (1978) noted, this is an important component in development and guiding behaviour.

An unexpected element was identified during an individual training session with Grayson, in relation to his time spent interacting with his peers at lunchtime. Grayson reported to the researcher that he preferred to play alone and observe his peers playing basketball rather than joining in. Thus Grayson may have had no desires to interact with his school peers, which could explain why the total frequency of interactions was low during this phase.

For after-school activity observations during the intervention phase, the total frequency of interactions started to increase until session 8 where frequencies started to decrease. After the school holidays during the intervention period, the frequency of interactions were variable. During the generalisation phase, the frequencies of interactions decreased, however the mean number of interactions during this phase still remained above the baseline mean.

Caroline.

For after-school activity one, the mean number of interactions during baseline were stable. During the intervention phase the mean number of interactions remained at baseline levels. After the school holidays there were increases in the frequency of interactions, which continued to increase throughout the generalisation phase. For after-school activity two the baseline mean was stable and interactions increased from the baseline to intervention phase. After the school holidays during the intervention phase, the frequency of interactions were variable and the mean number of interactions decreased. For the generalisation phase, the mean number of interactions increased. The variability in Caroline's performance and lack of change may be the due to an emerging skill for Caroline which may require more sufficient support in order to be present.

The variability of performance from the three participants underscores the importance of providing sufficient support, time and opportunity for skills to be learned and demonstrated.

Generalisation

The second research question investigated the generalisation of the skills from taught contexts to generalisation settings. Results suggest that a developing skill was apparent in some situations but not uniformly.

Initiating social interactions

For Gemma, there were no changes in the frequency of interactions initiated by Gemma, across all three-generalisation settings. For Grayson, the total number of interactions initiated by Grayson increased, across intervention and generalisation phases for all three-generalisation settings. These results suggest that Grayson managed to acquire he independent production of initiating social interactions, without the guidance of the researcher.

For Caroline, the mean number of interactions initiated by her during after-school activity one, slightly increased from baseline to intervention. Interactions continued to increase slightly during the generalisation phase. For after-school activity two, the mean number of interactions initiated by Caroline slightly increased from baseline during intervention to the generalisation phases.

Social Interactions

For Gemma, the total number of social interactions remained stable during the baseline and intervention phases. The total number of social interactions increased during generalisation for after-school activity observations.

For Grayson, there were increases in the total number of social interactions across all three phases for classroom observations. In contrast, observations of Caroline revealed the number of social initiations increased during intervention and generalisation phase for both generalisation settings.

Training sessions provided a more supportive environment for participants to socially interact. Further scaffolding may have supported Grayson to increase the frequency of interactions he initiated with his peers, teachers and teacher aide. Generalisation probes for Caroline showed a reduction in the frequency of social interactions, following the removal of the environment supports after the intervention. This suggests that Caroline had not yet mastered the independent production of this skill.

The results relating to research question one and two allude to the importance of both time and opportunity in the development of new skills by participants. The variability of performance across all parts of the study and across participants, the time between the intervention and any observable change in performance, and the impact of the supportive environment all suggest the need to examine these two factors closely. The study aimed to support students to demonstrate skills independently that they had previously only been able to demonstrate with support. The results of this study suggest that a less ambitious time frame with increased opportunities to practice and embed the new skills may be required.

Friendships

The third research question, explored the perceptions of adolescents with Down syndrome and their parents on the quality of their friendships. Overall results suggest that participants and their parents had both similar and different perceptions of the quality of friendships.

All parents were able to identify their child as having a best friend and all three participants met their best friends through their parents. Caroline and Gemma's mothers reported their daughters enjoyed spending time with their best friends and identified more than one context in which they spend time with their best friend. These reports are inline with Gemma and Caroline's self-reports on having high quality relationships with their best friends.

In contrast, the majority of literature suggests that adolescents with intellectual disabilities have poor quality friendships in comparison to typically developed individuals (Heiman, 2000; Tipton et al., 2013). Heiman indicated typically developing adolescents are more likely to form greater intimacy with their friends by sharing secrets and thoughts, where as adolescents with disabilities believe that friendships are for help and entertainment purposes.

The results for Grayson present a somewhat different picture. Grayson believed he had a moderately high quality friendship, which was also consistent with his mother's report. Grayson's mother identified a different best friend to Grayson and Grayson only spends time with his best friend in one context for example. Time and opportunity again emerge as important variables that influence the child's chances of forming and maintaining quality friendships. Grayson's mother identified that Grayson undertook many after-school activities, and although these kept him busy and occupied in a broader social sense, they reduced the opportunities to

organise a play date with a close friend. In addition, Grayson's mother also reported that for play dates to occur, she would have to facilitate it and that opportunities for Grayson actually demanded time and opportunity for her as well.

The roles of parents and contexts in facilitating their child's friendships are similar to findings in a study undertaken by Matheson and colleagues, (2007), which found that 56% of their participants reported spending time with their friends in more than one context and majority of the participants in this study met their friend through family or school. They also reported that parents influence their child's friendships by being facilitators of social activities with their friends. Children usually get to choose their own friends, however this is not the case in the current study. Although these parent facilitated friendships may be positive and fulfilling, equally they may not always be positive. The results suggest that for Grayson there may be some ambiguity about the friendship with his reported best friend and they may spend little time together.

What this study did not investigate in depth was the participants' understanding of friendship quality, however the results suggest an examination of this understanding could make a useful contribution to developing supports to develop and maintain friendships in adolescents with DS.

Peer attitudes and behavioural intentions

The fourth research question was concerned with the attitudes and behavioural intentions of peers towards individuals with disabilities. Findings from the current study indicated that all six peers had positive attitudes and high behavioural intentions towards individuals with disabilities and this was consistent with Law and Kelly (2005), who reported attitudes of typically developed peers were positive and behavioural intentions were high towards individuals with physical and intellectual disabilities.

One explanation for this could be that the peers in the current study attended inclusive schools and therefore have knowledge and a better understanding of individuals with disabilities. This interpretation is consistent with results from a meta-analyses conducted by Nowick and Sandieson (2002) in which indicated that typically developing children attending inclusive classrooms were more accepting of individuals with disabilities than children attending non-inclusive classrooms.

In contrast, there is considerable literature examining the attitudes of typically developing peers towards individuals with disabilities, which suggests peers have negative attitudes (de Boer & Pijl, 2016; Rosenbaum et al., 1988; Siperstein et al., 2007). de Boer and Pijl found that typically developing adolescents had negative attitudes and low behavioural intentions towards individuals with physical and intellectual disabilities. Rosenbaum and colleagues and Siperstein and colleagues reported that many adolescents are less like to interact and associated with individuals with disabilities.

There could be two explanations for these differences. Firstly, the current study included only six peers. Two of the peers had intellectual disabilities and four had typical development. This small number limits the generalisability of these

findings to typically developing peers. Secondly, the majority of literature does not report the amount of contact typically developing peers have with individuals with disabilities. These negative attitudes could be associated with their lack of experience with individuals with disabilities.

Given the strong focus on inclusive schools in New Zealand, the positive attitudes of peers reported in the current study, are encouraging.

Features of the study

There are two unique strengths identified in the current study, which warrant discussion. Firstly, the design of the study used individual and group training contexts. These sessions provided participants with an intervention that was adapted to their specific social skill deficits and an environment where they could practice these skills with other participants. Much of the previous literature used group-training contexts due to the natural social context it provides and other members of the group serve as models for appropriate social skills (Rao et al., 2008; Smith et al., 2010; Soresi & Nota 2000; Tse et al., 2007; Webb et al., 2004). In addition, participants were exposed to a variety of stimuli and responses, which could assist in the generalisation of target behaviours (Smith et al., 2010). Although these variables are beneficial, group-training settings are only valuable if all of the participant's levels of functioning and social skill deficits are similar. In comparison, individual settings allow researchers to manipulate the intervention in a way to fit with the needs of the participant. In addition, researchers can monitor the individual's progress and implement the intervention at a rate that is suited to the participant (Smith et al., 2010 Tofte-Tipps et al., 1982).

Secondly, the current study used multiple contexts on a continuum of familiarity. The most familiar of the contexts was the school environment. The

familiarity and the knowledge of routines and systems of the school day provided the most support, the after school/ extra-curricular contexts were less familiar but still provided structure and routine as support. The least familiar context in the study was the local mall in which there was less structure. The use of multiple contexts not only provided participants with interactions in their own authentic environments, it also served as a mechanism for manipulating the level of environmental support gradually, as participants learnt to demonstrate the taught skills independently. As detailed above, the variables of time and opportunity emerged as critical to the success of the intervention. Situating the current study in multiple contexts attempted to meet both these demands in order to support participants to learn and generalise their new skills.

Limitations of the study

There were a number of limitations of the current study. First, this was small study with only three participants, a 4-week intervention period and a 6-week observational period. This is a limited amount of time to implement two social skills and to capture participants interacting in their familiar environments. A longer duration could have promoted further generalisation to other settings. When administering the semi-structure interview to participants, the researcher found it difficult to prompt participants to elaborate on open-ended questions. Therefore, the use of a Likert scale may have been an efficient method in measuring the participant's perceptions on the validity of the intervention.

Nonetheless, this study although introductory, addressed an important issue with regards to time and opportunities and identifies future research directions.

Future research

An area for future research includes measuring generalisation in untrained environments that are unfamiliar to the participant, to determine whether they can generalise target skills to new environments. In addition in depth investigations into the participants' understanding of friendship quality could help develop interventions to promote high quality friendships in adolescents with Down syndrome.

Conclusion

This study is somewhat unique in the field as it examines the effectiveness of a brief generalisation intervention on social interactions for adolescents with Down syndrome. Participants showed gains in social interactions in at least one generalisation setting and generalisation of at least one skill was observed. Participants and parents showed similarities and differences in their perceptions of friendship quality and peers showed positive attitudes and behavioural intentions towards individuals with disabilities.

It can be concluded from this study that adolescents with disabilities can generalise social skills to other familiar environments, however time and opportunities can influence social interactions, friendships and attitudes. Future research should extend this study by measuring generalisation in untrained environments unfamiliar to the participant, to determine whether they can generalise target skills to new environments.

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APPENDIX A: Educational Research Human Ethics Committee approval

HUMAN ETHICS COMMITTEE

Secretary

Email

Ref: 2015/45/ERHEC

11 January 2016

Gabrielle Fifield
School of Health Sciences
UNIVERSITY OF CANTERBURY
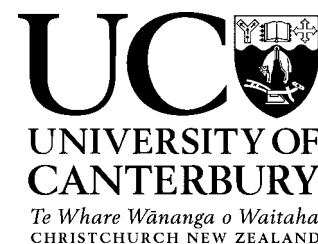
Dear Gabrielle

Thank you for providing the revised documents in support of your application to the Educational Research Human Ethics Committee. I am very pleased to inform you that your research proposal "The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome" has been granted ethical approval.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 18 December 2015.

Should circumstances relevant to this current application change you are required to reapply for ethical approval.

If you have any questions regarding this approval, please let me know. We wish you well for your research.

Yours sincerely

Patrick Shepherd

Chair

Educational Research Human Ethics Committee

APPENDIX B (i): Information sheet for XXX club coordinator

Telephone:
Email:

Date:
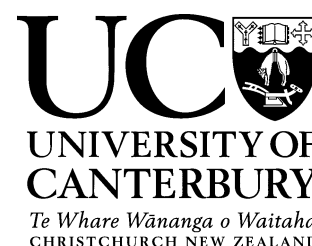
The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

My name is Gabrielle Fifield and I am a student at the University of Canterbury undertaking my thesis for my Masters of Science. (name of participants) and their parent(s) have agreed to participate in my study that examine the effects of a social skills intervention on social interactions, peer attitudes and friendship quality for adolescents with Down syndrome

Adolescents with disabilities tend to have difficulties maintaining and acquiring high quality friendships due to a lack of sophisticated social skills and the opportunity to use these. Unless specifically taught in other environments, these skills are often 'lost'. The aim of my study is to use generalisation techniques to teach social skills at home and at the XXXXX club events to see whether (add students name) remembers and uses these skills at school and at after-school activity trainings. The intervention period will last up to 4 weeks between June and July 2016.

I am seeking your permission to be able to use the XXXXX club event facilities as one of the training locations for my research project. Training sessions at the XXX club will consist of the participants practicing their learnt social skills with each other. These training sessions will occur once a week over a 4-week period during June and July 2016.

A summary of the overall project findings will also be available at the end of the project. The results of this project may be published or used for future presentations but your details will be confidential to my supervisors, my research assistant and myself. Due to the nature of the research it is considered confidential by not anonymous. The XXX club will be given a pseudonym to anonymise its identity however there is a small Down syndrome community in XXXX that may mean that it is possible for participants to be identified. Please do not share the names and details of those involved in this project with people outside of the project. Data will be stored in a locked filing cabinet at the University of Canterbury for 5 years and then it will be destroyed. Participation is voluntary so if the XXX club agree to participate they have the right to withdraw from this study at any point in time without penalty.

If you have any questions about the study please contact me (details above) or my senior supervisor XXXXX. If you have a complaint about the study, complaints may be addressed to the Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch. Email: human-ethics@canterbury.ac.nz

If you are interested in participating in this project please read and sign the consent form attached and please return in the attached envelope by (date to be determined).

Thank you for considering taking part in this research.

Yours Sincerely,

Gabrielle Fifield.

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CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

☐ I have read and understood the description of the above named project. On this basis I agree for the researcher to use the XXXXX club facilities for her training sessions.

☐ I understand what will be required of the XXXXX club if I agree to take part in this project

☐ I understand that the XXXXX club's participation is voluntary and we may withdraw from this project at any time, without penalty.

☐ I understand that any information provided will be kept confidential to the researcher, her research assistant and her supervisors and that any published or reported results will not identify the XXXXX club.

☐ I understand that the nature of the research and the small Down syndrome community in XXXXX may mean it is possible for participants to be identified.

☐ I understand that I should not share the names and details of those involved in this project with people outside of the project

☐ I understand that all data collected for this study will be kept in locked and secure facilities at the University of Canterbury for a period of five years and will then be destroyed.

☐ I understand that, if requested, the XXXXX club can receive a summary of the project to the email provided below.

☐ I understand that I can get more information about this project from the researcher, and that I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee if I have any complaints about the research.

By signing below, I agree to participate in this research project

Your Name:_____Date: _____

Signature: _____

Email Address: _____

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

My name is Gabrielle Fifield and I am doing a project at the University to help people with Down syndrome learn new social skills. This means that I will be working with you, your parents, your teacher/teacher aide and your after-school activity teacher/coach.

Once a week I will meet with you at your house to teach you social and friendship skills. I will also meet up with you and two other participants with Down syndrome at the weekly XXX club events to practice the skills you learnt that week. You will participate in 8 training sessions (twice a week for 4 weeks) and this will be between June and July 2016. You will be asked to fill out two questionnaire forms which will tell me about your current social skills and your friendships with your peers from school and your after-school activities (e.g. XXXX). Some of your friends from your school or after-school activities will be asked some questions about their thought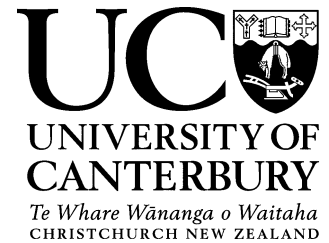s and behaviours towards people with disabilities. You will also take part in an interview with your parents to determine whether you enjoyed the intervention.

Three times a week I will observe you interacting with your peers at your school and at your after-school activities. When you are at school and at your after school activities you and your peers will be asked to wear a coloured wristband during observations so it is easy to identify those involved in the study. These observations will be videotaped so that I can record and analyse this footage
Only my two supervisors, my research assistant and I will see the videos. The videos will be locked away safely in a cupboard at the University of Canterbury so that no one can see them. After five years these videos will be destroyed.

My individual results and an overall summary of the projects results can be available to you and your parents/caregivers. The result may be published or used for future presentations but will be kept private to my supervisors, my research assistant and myself. If you choose to participate you will be given a code name so no one will know your real name, your teacher/teacher aide's name, your after-school activity coordinator's name or the name of your school. There is a small Down syndrome community in XXXXX that may mean it is possible for you to be identified. If you choose to participate please do not share the names and details of those involved in this project with people outside of the project.

If you have any questions about the study you can talk to your parent/caregiver or contact me (details above). At any time you can leave this project if you want to. If you change your mind that is fine too you can just tell your parent/caregiver. If you have a complaint about the study, complaints may be addressed to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch. Email: human-ethics@canterbury.ac.nz

Thank you for considering taking part in my research project.

Gabrielle Fifield

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CHRISTCHURCH NEW ZEALAND

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

☐ I have read (or had read to me) the information sheet and understand what will be required of me if I agree to take part in this project.

☐ I understand that my participation is voluntary and I may withdraw from this project at any time without penalty.

☐ I understand that videoing will occur at my school and after-school trainings.

☐ I understand that my friends from my school and after-school activities will be invited to participate in this project and will be asked some questions about their thoughts and behaviours towards individuals with disabilities.

☐ I understand that any published or reported results will not identify myself, nor my school or the staff at my school in any presentations or publications.

☐ I understand that all information provided will only be accessed by the researcher and that it will be kept confidential to the researcher and her supervisors and held for a period of five years at the University of Canterbury.

☐ I understand that there is a small Down syndrome community in XXXX may mean it is possible for participants to be identified.

☐ I understand that I should not share the names and details of those involved in this project with people outside of the project

☐ I understand that I can get more information about this project from the researcher, and that I can contact the University of Canterbury Ethics Committee if I have any complaints about the research.

☐ I understand that, if requested, my parents can receive a summary of the projects results and my own individual results.

☐ I agree to participate in this research and my parents have also given consent on their consent form.

Your Name:_____Date: _____

Class: _____

Teacher: _____

Signature: _____

APPENDIX D (i) Information sheet for participant's parents.

The effect of generalisation intervention on social interaction for individuals with Down syndrome

My name is Gabrielle Fifield and I am a student at the University of Canterbury undertaking my thesis for my Masters of Science. I am conducting a study that examines the effects of a social skills intervention on social interactions, peer attitudes and friendship quality for adolescents with Down syndrome. I would like to invite you and your child to participate in this study. Adolescents with disabilities tend to have difficulties maintaining and acquiring high quality friendships due to a lack of sophisticated social skills and the opportunity to use these. Unless specifically taught in other environments, these skills are often 'lost'. The aim of my study is to use generalisation techniques to teach social skills at home and at the XXXX club events to see whether (add students name) remembers and uses these skills at school and at after-school activity settings. Teaching sessions will take place at the XXX club events and at the participant's home for two sessions per week over a 4-week period.

What this means is that:

- You and your child will be asked to answer questions on the Social Skills Rating Scale (SSRS).
- Your child will be asked to fill out a friendship quality questionnaire and you will be asked to take part in a semi-structured interview on your child's friendships.
- Your child will take part in a one-on-one social skills training session at home and a group training session at the XXX club events.
- During school time and after-school activity training, your child's teacher and after-school activity coordinator will verbally and physically prompt your child to elicit six social skills.
- I will observe your child at their school and after-school activity training to see whether the frequency of social interactions with peers increases and whether they respond appropriately to generalisation prompts.
- You and your child will be asked to participate in a semi-structured interview on social validity to see whether you and your child enjoyed the intervention.
- Two of your child's peers, one from school and one from their after-school activity will be asked to fill out two questionnaires, about their thoughts and behavioural intentions towards individuals with disabilities.

Observations of your child interacting with their peers will be videotaped to see whether their socialisation and friendships skills are improving. Your child will be asked to wear a wristband when observations are being undertaken, in order to easily identify those participating in the study. These observations will be videotaped so that I can record and analyse this footage. The semi-structured interview on friendship quality will be audiotaped and transcribed. Before analysing this data I will check you are happy with the transcription. The recordings and any other data that comes from my project will be stored in a locked filing cabinet and/or password protected computer at the University of Canterbury for five years following the study and will be destroyed.

A summary of the overall project findings will be sent to you via email. If requested you may receive your child's results by indicating on the consent form and including your email address. The results of this project may be published or used in future presentations but your details will be confidential to my supervisors, my research assistant and myself. Due to the nature of the project it is considered confidential but not anonymous. You and your child will be given a pseudonym to anonymise your identity, however there is a small Down syndrome community in XXXX that may mean that it is possible for participants to be identified. Please do not share the names and details of those involved in this project with people outside of the project. Participation in this study is voluntary and if you and your child want to participate you have the right to withdraw at any time without penalty.

If you have any questions about the study please contact me (details below) or my senior supervisor XXXX (details below) If you have a complaint about the study, complaints may be addressed to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch. Email: human-ethics@canterbury.ac.nz

If you and your child are interested in participating in this project please read and sign both of the consent forms attached and please return in the attached envelope by (date to be determined).

Thank you for considering taking part in this research.

Yours Sincerely,
Gabrielle Fifield.

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

<u>Declaration of Consent for Participant's Parents:</u>

☐ I have read and understood the description of the above named project and have been given the opportunity to ask questions. On this basis I understand what will be required of me and my child if we agree to take part in this project.

☐ I understand that mine and my child's participation is voluntary and we may withdraw from this project at any time without penalty.

☐ I understand that my child will be videotaped at school and at their after-school activity trainings.

☐ I understand that two of my child's peers will be invited to participate in this project and will be asked some questions on their thoughts and behaviours towards individuals with disabilities.

☐ I understand that all information will be kept confidential to the researcher, her research assistant and her supervisors and that any published or reported results will not identify myself or my child.

☐ I understand that the nature of the research and the small Down syndrome community in XXX may mean it is possible for participants to be identified.

☐ I understand that I should not share the names and details of those involved in this project with people outside of the project.

☐ I understand that all data collected for this study will be kept in locked and secure facilities at the University of Canterbury and will be destroyed after five years.

☐ I understand that, if requested, I will receive a summary of the project to the email address provided below.

☐ I understand that, if requested I will be sent my child's individual results from this project to the email address provided below.

☐ I understand that I can get more information about this project from the researcher, and that I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee if I have any complaints about the research.

By signing below, I agree to participate in this research project

Your Name:_____Date: _____

Signature: _____

Email Address   _____

APPENDIX E (i) Information sheet for BOT

Telephone:
Email:

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

Information Sheet- Board of Trustees

My name is Gabrielle Fifield and I am a student at the University of Canterbury undertaking my thesis for my Masters of Science. XXX and his parent has agreed to participate in my study that examines the effects of a social skills intervention on social interactions, peer attitudes and friendship quality for adolescents with Down syndrome.

Adolescents with disabilities tend to have difficulties maintaining and acquiring high quality friendships due to a lack of sophisticated social skills and the opportunity to use these. Unless specifically taught in other environments, these skills are often 'lost'. The aim of my study is to use generalisation techniques to teach social skills at home and at the XXX club events to see whether XXX remembers and uses these skills at school and at after-school activity trainings. The intervention period will last up to 4 weeks.

I am seeking your permission to be able to work in your school and approach XXX teacher /teacher aide if given permission, then work in your school with the student, teacher and teacher aide (if applicable) to video the social interactions and request your teacher, when applicable to prompt XXXX to engage in social interactions with his/her peers.

All observations will be videotaped to see whether XXXX socialisation and friendships skills are improving. XXXX peers, teacher and/or teacher aid and after-school activity coordinator may appear in the video footage. Your students will be asked to wear a wristband when observations are being undertaken, in order to easily identify those participating in the study. The video footage and any other data that comes from my project will be stored in a locked filing cabinet and/or password protected computer at the University of Canterbury for five years following the study and will be destroyed. A summary of the overall project findings will also be available at the end of the project. The results of this project may be published or used for future presentations but your details will be confidential to my supervisors, my research assistant and myself. Due to the nature of the project it is considered confidential but not anonymous. The school, your students and staff will be given a pseudonym to anonymise your identities, however there is a small Down syndrome community in XXXX that may mean that it is possible for participants to be identified. Please do not share the names and details of those involved in this project with people outside of the project. Participation is voluntary so if the school agrees to participate they have the right to withdraw from this study at any point in time without penalty.

If you have any questions about the study please contact me (details above) or my senior supervisor XXXXX (details below). If you have a complaint about the study, complaints may be addressed to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch. Email: human-ethics@canterbury.ac.nz

If you are interested in participating in this project please read and sign the consent form attached and please return in the attached envelope by (date to be determined).

Thank you for considering taking part in this research.

Yours Sincerely,

Gabrielle Fifield.

APPENDIX E (ii) Consent form for BOT

Telephone:
Email:

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

<u>Declaration of Consent- Chair - Board of Trustees:</u>

☐ I have read and understood the description of the above named project. On this basis I agree for the researcher to approach the Principal and request permission to approach the student's teacher, teacher aide and activity co-coordinator and request their permission to take part in the Master of Science study.

☐ I understand that the Boards participation is voluntary and we may withdraw from this project at any time without penalty.

☐ I understand that videoing will occur in the school and be specific to XXX their peers and their teacher, teacher aid and/or after-school activity coordinator.

☐ I understand that all information will be kept confidential to the researcher, her research assistant and her supervisors and that any published or reported results will not identify the students, the staff or the school.

☐ I understand that the nature of the research and the small Down syndrome community in XXX may mean it is possible for participants to be identified.

☐ I understand that the Board should not share the names and details of those involved in this project with people outside of the project.

☐ I understand that all data collected for this study will be kept in locked and secure facilities at the University of Canterbury and will be destroyed after five years.

☐ I understand that, if requested, the Board will receive a summary of the project to the email provided below.

☐ I understand that I can get more information about this project from the researcher, and that I can contact the University of Canterbury Ethics Committee if I have any complaints about the research.

By signing below, I agree to participate in this research project.

Your Name:_____Date: _____

Signature: _____

Email Address: _____

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Telephone:
Email:

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

Information Sheet- School Principal

My name is Gabrielle Fifield and I am a student at the University of Canterbury undertaking my thesis for my Masters of Science. XXXX and her parents have agreed to participate in my study that examines the effects of a social skills intervention on social interactions, peer attitudes and friendship quality for adolescents with Down syndrome.

Adolescents with disabilities tend to have difficulties maintaining and acquiring high quality friendships due to a lack of sophisticated social skills and the opportunity to use these. Unless specifically taught in other environments, these skills are often 'lost'. The aim of my study is to use generalisation techniques to teach social skills at home and at the XXX club events to see whether XXXX remembers and uses these skills at school and at after-school activity trainings.

I am seeking your permission to be able to work in your school and approach XXXX teacher /teacher aide if given permission, then work in your school with the student, teacher and teacher aide (if applicable) to video the social interactions and request your teacher, when applicable to prompt XXXX to engage in social interactions with her peers.

All observations will be videotaped to see whether XXXX socialisation and friendships skills are improving. XXXX peers, teacher and/or teacher aid may appear in the video footage. Your students will be asked to wear a wristband when observations are being undertaken, in order to easily identify those participating in the study. The video footage and any other data that comes from my project will be stored in a locked filing cabinet and/or password protected computer at the University of Canterbury for five years following the study and will be destroyed. A summary of the overall project findings will also be available at the end of the project. The results of this project may be published or used for future presentations but your details will be confidential to my supervisors, my research assistant and myself. Due to the nature of the research it is considered confidential but not anonymous. You, your students and the school will be given pseudonym to anonymise your identity, however there is a small Down syndrome community in XXXX that may mean that it is possible for participants to be identified. Please do not share the names and details of those involved in this project with people outside of the project. Participation is voluntary so if the school agrees to participate they have the right to withdraw from this study at any point in time without penalty.

If you have any questions about the study please contact me (details above) or my senior supervisor, XXXXX (details below). If you have a complaint about the study, complaints may be addressed to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch. Email: human-ethics@canterbury.ac.nz

If you are interested in participating in this project please read and sign the consent form attached and please return in the attached envelope by (date to be determined).

Thank you for considering taking part in this research.

Yours Sincerely,

Gabrielle Fifield.

Telephone:
Email:

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

<u>Declaration of Consent for School Principal</u>:

☐ I have read and understood the description of the above named project. On this basis I agree for the researcher to approach the student's teacher, teacher aide and activity co-coordinator and request their permission to take part in the Master of Science study.

☐ I understand that the schools participation is voluntary and we may withdraw from this project at any time without penalty.

☐ I understand that videoing will occur in the school and be specific to XXXX and their teacher and teacher aid.

☐ I understand that all information will be kept confidential to the researcher, her research assistant and her supervisors and any published or reported results will not identify students or the school.

☐ I understand that the school should not share the names and details of those involved in this project with people outside of the project

☐ I understand that all information collected for this study will be kept in locked and secured facilities at the University of Canterbury and will be destroyed after five years.

☐ I understand that, if requested, I will receive a summary of the project to the email provided below.

☐ I understand that I can get more information about this project from the researcher, and that I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee if I have any complaints about the research.

By signing below, I agree to participate in this research project.

Your Name:_____Date: _____

Signature: _____

Email Address:_____

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Telephone:
Email:

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

<u>Information Sheet- Teacher and/or Teacher-aide</u>

My name is Gabrielle Fifield and I am a student at the University of Canterbury undertaking my thesis for my Masters of Science. XXX and his parent have agreed to participate in a study that examines the effects of a social skills intervention on social interactions, peer attitudes and friendship quality for adolescents with Down syndrome. I would like to invite you to participate in this study as well.

Adolescents with disabilities tend to have difficulties maintaining and acquiring high quality friendships due to a lack of sophisticated social skills and the opportunity to use these. Unless specifically taught in other environments, these skills are often 'lost'. The aim of my study is to teach generalisation skills at home and at the XXXX club events to see whether XXX remembers and uses these skills at school and at after-school activity settings. The intervention period will last up to 4 weeks.
Your participation will involve:

- Social Skills Rating Scale (SSRS)- you will be requested to rate the student's social skills during baseline, post-intervention and one month follow up
- Generalisation Prompts: I will provide you with training in administrating the six verbal and/or gesture prompts which code for the six target behaviours (greetings/farewells, eye contact, initiating social interactions, answering questions and asking questions and manners).

Observations of the student interacting with their peers will be videotaped to see whether their socialisation and friendships skills are improving. You may be in this video footage. Your students will be asked to wear a wristband when observations are being undertaken, in order to easily identify those participating in the study. The video footage and any other data that comes from my project will be stored in a locked filing cabinet and/or password protected computer at the University of Canterbury for five years following the study and will be destroyed.

A summary of the overall project findings will also be available at the end of the project. The results of this project may be published or used for future presentations but your details will be confidential to my supervisors, my research assistant and myself. Due to the nature of the research it is considered confidential but not anonymous. You, your students and the school will be given pseudonym to anonymise your identities, however there is a small Down syndrome community in XXXX that may mean that it is possible for participants to be identified. Please do not share the names and details of those involved in this project with people outside of the project. Participation in this study is voluntary and if you do participate you have the right to withdraw at any time without penalty.

If you have any questions about the study please contact me (details above) If you have a complaint about the study, complaints may be addressed to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch.
Email: human-ethics@canterbury.ac.nz

If you are interested in participating in this project please read and sign the consent form attached and please return in the attached envelope by (date to be determined).

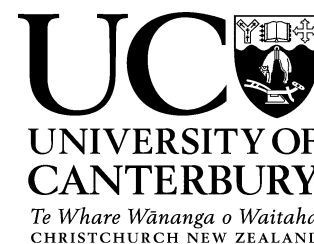Thank you for considering taking part in this research.

Yours Sincerely,

Gabrielle Fifield.

APPENDIX G (ii) Consent form for teacher and/or teacher-aide

Telephone:
Email:

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

Declaration of Consent for Teacher and/or Teacher-aide:

☐ I have read and understood the description of the above named project and have been given the opportunity to ask questions. On this basis I understand what will be required of me if I agree to take part in this project.

☐ I understand that my participation is voluntary and I may withdraw from this project at any time without penalty.

☐ I understand that videoing will occur in the school and be specific to XXXX and myself.

☐ I understand that all information will be kept confidential to the researcher, her research assistant and her supervisors and any published or reported results will not identify myself, my students or the school.

☐ I understand that the nature of the research and the small Down syndrome community in XXXX may mean it is possible for participants to be identified.

☐ I understand that I should not share the names and details of those involved in this project with people outside of the project

☐ I understand that all information collected for this study will be kept in locked and secured facilities at the University of Canterbury and will be destroyed after five years.

☐ I understand that, if requested, I will receive a summary of the project to the email provided below.

☐ I understand that I can get more information about this project from the researcher, and that I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee if I have any complaints about the research.

By signing below, I agree to participate in this research project

Your Name:_____Date: _____

Signature: _____

Email Address: _____

Telephone:
Email:

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

Information Sheet- After-School Activity Coordinator

My name is Gabrielle Fifield and I am a student at the University of Canterbury undertaking my thesis for my Masters of Science. XXXX and her parents have agreed to participate in a study that examines the effects of a social skills intervention on social interactions, peer attitudes and friendship quality for adolescents with Down syndrome. I would like to invite you to participate in this study as well.

Adolescents with disabilities tend to have difficulties maintaining and acquiring high quality friendships due to a lack of sophisticated social skills and the opportunity to use these. Unless specifically taught in other environments, these skills are often 'lost'. The aim of my study is to use generalisation techniques to teach social skills at home and at the XXXX club events to see whether XXX remembers and uses these skills at her after-school activity settings. The intervention period will last up to 4 weeks.

 Your participation will involve:

- Generalisation Prompts: I will provide you with training in administrating six verbal and/or gesture prompts which code for the six target behaviours (greetings/farewells, eye contact, initiating social interactions, answering questions and asking questions and manners).

Observations of XXX interacting with her peers will be videotaped to see whether their socialisation and friendships skills are improving. You may be in this video footage. Your students will be asked to wear a wristband when observations are being undertaken, in order to easily identify those participating in the study. The video footage and any other data that comes from my project will be stored in a locked filing cabinet and/or password protected computer at the University of Canterbury for five years following the study and will be destroyed.

A summary of the overall project findings will also be available at the end of the project. The results of this project may be published or used for future presentations but your details will be confidential to my supervisors, my research assistant and myself. Due to the nature of the project it is considered confidential but not anonymous. You and your students will be given a pseudonym to anonymise your identity, however there is a small Down syndrome community in XXX that may mean that it is possible for participants to be identified. Please do not share the names and details of those involved in this project with people outside of the project. Participation in this study is voluntary and if you do participate you have the right to withdraw at any time without penalty.

 If you have any questions about the study please contact me (details above) or my senior supervisor, XXXX (details below). If you have a complaint about the study, complaints may be addressed to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch.
Email: human-ethics@canterbury.ac.nz

If you are interested in participating in this project please read and sign the consent form attached and please return in the attached envelope.

Thank you for considering taking part in this research.

Yours Sincerely, Gabrielle Fifield.

APPENDIX H (ii) Consent form for After-school activity coordinator
Telephone:
Email:

The effect of a generalisation intervention on social interaction for individuals with Down syndrome

<u>Declaration of Consent- After-School Activity Coordinator:</u>

☐ I have read and understood the description of the above named project and have been given the opportunity to ask questions. On this basis I understand what will be required of me if I agree to take part in this project.

☐ I understand that my participation is voluntary and I may withdraw from this project at any time without penalty.

☐ I understand that videoing will occur at trainings and be specific to XXXX.

☐ I understand that all information will be kept confidential to the researcher, her research assistant and her supervisors and any published or reported results will not identify me or my students.

☐ I understand that the nature of the research and the small Down syndrome community in XXXX which may mean it is possible for participants to be identified.

☐ I understand that I should not share the names and details of those involved in this project with people outside of the project

☐ I understand that all information collected for this study will be kept in locked and secured facilities at the University of Canterbury and will be destroyed after five years.

☐ I understand that, if requested, I will receive a summary of the project to the email provided below.

☐ I understand that I can get more information about this project from the researcher, and that I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee if I have any complaints about the research.

By signing below, I agree to participate in this research project

Your Name:_____Date: _____

Signature: _____

Email Address:_____

Telephone:
Email:

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

<u>Information sheet- Peers</u>

My name is Gabrielle Fifield and I am doing a project at the University to help people with Down syndrome learn new social skills and looking at their peer's attitudes towards individuals with disabilities. Your classmate, XXXX has agreed to participate in this study and I would like to invite you to participate.

Observations of XXXX socially interacting with you and your peers will be taken twice a week at your school. All observations will be videotaped to see whether XXX socialisation and friendships skills are improving. You may be in these video recordings however you will not be the main focus of them. You will be asked to wear a wristband when observations are being undertaken, in order to easily identify those participating in the study

You also have the option of filling out two questionnaires, which examine your attitudes and behavioural intentions towards individuals with disabilities. Both questionnaires will need to be filled out twice, once before the intervention and again after the intervention.

The video footage and any other data that comes from my project will be stored in a locked filing cabinet and/or password protected computer at the University of Canterbury for fiver years following the study and will be destroyed.

A summary of the overall project findings will also be available at the end of the project. The results of this project may be published or used for future presentations but your details will be confidential to my supervisors, my research assistant, and myself. Due to the nature of the project it is considered confidential but not anonymous. You and your school will be given a pseudonym to anonymise your identity, however there is a small Down syndrome community in XXXX that may mean that it is possible for participants to be identified. Please do not share the names and details of those involved in this project with people outside of the project. Participation is voluntary so if you choose to participate you may leave at any point in time during the research project.

If you have any questions about the study please contact me (details above) or my senior supervisor XXXX. If you have a complaint about the study, complaints may be addressed to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch. Email: human-ethics@canterbury.ac.nz

If you are interested in participating in this project please read and sign the consent form attached and please return in the attached envelope by (date to be determined).

Thank you for considering taking part in this research.

Yours Sincerely,

Gabrielle Fifield.

APPENDIX I (ii)Consent form for peers
Telephone:
Email:

The effect of a generalisation intervention on social interaction for individuals with Down syndrome

<u>Declaration of Consent for Peer:</u>

☐ I have read and understood the information sheet and I understand what will be required of me if I agree to take part in this project

☐ I understand that my participation is voluntary and I may withdraw from this project at any time without penalty;

☐ I understand that videoing will occur at my school and/or after-school activity trainings and that I may or may not be 'in shot'

☐ I understand what will be required of me if I agree to fill out the attitudes and behavioural intentions questionnaire

☐ I understand that all information will be kept confidential to the researcher, her research assistant and her supervisors and any published or reported results will not identify me or my school.

☐ I understand that the nature of the research and the small Down syndrome community in XXXX may mean it is possible for participants to be identified.

☐ I understand that I should not share the names and details of those involved in this project with people outside of the project

☐ I understand that all information collected for this study will be kept in locked and secured facilities at the University of Canterbury and will be destroyed after five years.

☐ I understand that, if requested, I can receive a summary of the project to the email provided below.

☐ I understand that I can get more information about this project from the researcher, and that I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee if I have any complaints about the research;

☐ I agree to participate in filling out the attitudes and behavioural intentions questionnaires

☐ I agree to participate in this research and my parents have also given consent on their consent form.

By signing below, I agree to participate in this research project

Your Name:_____Date: _____

Signature: _____

APPENDIX J (i) Information sheet for peers

Telephone:
Email

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

Information sheet- Peers

My name is Gabrielle Fifield and I am doing a project at the University to help people with Down syndrome learn new social skills and looking at their peer's attitudes towards individuals with disabilities. Your teammate XXXX has agreed to participate in this study and I would like to invite you to participate.

I will observe XXXX interacting with you and your peers, once a week at your lessons. You will be asked to wear a coloured wristband during these interactions so that I can identify those participating in this project. These interactions will be videotaped to see whether XXXX socialisation and friendships skills are improving. You might be in these video recordings but you will not be the main focus.

You also have the option to answer some questions about your thoughts and behaviour towards individuals with disabilities. You will be asked these questions twice.

The video footage and any other data that comes from my project will be stored in a locked filing cabinet and/or password protected computer at the University of Canterbury for five years following the study and will be destroyed.

A summary of the overall project findings will be available to you and your parents at the end of the project. The results of this project may be published or used for future presentations but will be kept private to my supervisors, my research assistant and myself. If you choose to participate, you will be given a code name so no one will know your real name but because there is a small Down syndrome community there is a chance that you may be identified. If you decide to participate please do not share the names and details of those involved in this project with people outside of the project.

If you have any questions about the study you can talk to your parent/caregiver or contact me (details above). If you have a complaint about the study, complaints may be addressed to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch. Email: human-ethics@canterbury.ac.nz

At any time you can leave this project if you want to. If you change your mind that is fine too you can just tell your parent/caregiver.

Thank you for considering taking part in this research.

Yours Sincerely,

Gabrielle Fifield.

Telephone:
Email:

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

Declaration of Consent for Peers:

☐ I have read (or had read to me) the information sheet and understand what will be required of me if I agree to take part in this project.

☐ I understand that my participation is voluntary and I may withdraw from this project at any time without penalty.

☐ I understand that videoing will occur at my basketball trainings and that I may or may not be 'in shot.'

☐ I understand what will be required of me if I agree to fill out the attitudes and behavioural intentions questionnaire

☐ I understand that any published or reported results will not identify myself, nor my basketball team or the staff at my basketball trainings in any presentations or publications.

☐ I understand that there is a small Down syndrome community in XXX may mean it is possible for participants to be identified.

☐ I understand that I should not share the names and details of those involved in this project with people outside of the project

☐ I understand that all information provided will only be accessed by the researcher and that it will be kept confidential to the researcher and her supervisors and held for a period of five years at the University of Canterbury.

☐ I understand that I can get more information about this project from the researcher, and that I can contact the University of Canterbury Ethics Committee if I have any complaints about the research.

☐ I understand that, if requested, my parents can receive a summary of the projects results.

  ☐ I agree to participate in answering some questions on attitudes and behaviours towards individuals with disabilities.

☐ I agree to participate in this research and my parents have also given consent on their consent form.

Your Name:_____Date: _____

Teacher Name: _____

Signature: _____

Telephone:
Email:

The effect of a generalisation intervention on social interaction for individuals with Down syndrome

Information Sheet- Peer's Parents

My name is Gabrielle Fifield and I am a student at the University of Canterbury under taking my thesis for a Master of Science. I will be studying the effects of a social skills intervention on social interactions, peer attitudes and friendship quality for adolescents with Down syndrome. A student from your child's basketball team, XXX has agreed to participate in this study and I would like to invite your child to participate.

Your child's involvement:
- Your child may or may not be 'in shot' therefore I need to seek you and your child's permission just in case they are recorded. Please be assured that your child will not be the main focus of the recordings, XXX social interactions will be. Your child will be asked to wear a wristband when observations are being undertaken, in order to easily identify those participating in the study
- Your child also has the option of participating as a peer participant where they will be given a questionnaire, which examines their attitudes towards individuals with disabilities. In addition a behavioural intention scale will also be administered to peers and both questionnaires will be administered during baseline and post-intervention.

The video footage and any other data that comes from my project will be stored in a locked filing cabinet and/or password protected computer at the University of Canterbury for five years following the study and will be destroyed.

A summary of the overall project findings will also be available at the end of the project. The results of this project may be published or used for future presentations but your details will be confidential to my supervisors, my research assistant and myself. Due to the nature of the project it is considered confidential but not anonymous. You and your child will be given a pseudonym to anonymise your identity, however there is a small Down syndrome community in XXXX that may mean that it is possible for participants to be identified. Please do not share the names and details of those involved in this project with people outside of the project. Participation in this study is voluntary and if your child wants to participate you have the right to withdraw from this research project at any time without penalty.

If you have any questions about the study please contact me (details above) or my senior supervisor, XXXX. If you have a complaint about the study, complaints may be addressed to the Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch.
Email: human-ethics@canterbury.ac.nz

If you are interested in participating in this project please read and sign the consent form attached and please return in the attached envelope by the 23rd of June 2016.

Thank you for considering taking part in this research.

Yours Sincerely,

Gabrielle Fifield.

APPENDIX K (ii) Consent form for peer's parents

Telephone:
Email:

The effect of a generalisation intervention on social interaction for individuals with Down syndrome

<u>Declaration of Consent for Peer's Parents:</u>

☐ I have read and understood the description of the above named project and have been given the opportunity to ask questions. On this basis I understand what will be required of my child if we agree to take part in this project.

☐ I understand that my child's participation is voluntary and he/she may withdraw from this project at any time without penalty.

☐ I understand that videoing will occur at basketball training and my child may or may not be 'in shot'

☐ I understand that all information will be kept confidential to the researcher, her research assistant and her supervisors and any published or reported results will not identify myself or my child.

☐ I understand that the nature of the research and the small Down syndrome community in Christchurch may mean it is possible for participants to be identified.

☐ I understand that I should not share the names and details of those involved in this project with people outside of the project

☐ I understand that all information collected for this study will be kept in locked and secured facilities at the University of Canterbury and will be destroyed after five years.

☐ I understand that, if requested, I will receive a summary of the project to the email provided below.

☐ I understand that I can get more information about this project from the researcher, and that I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee if I have any complaints about the research.

By signing below, I agree to participate in this research project

Your Name:_____Date: _____

Signature: _____

Email Address: _____

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Telephone:
Email:

The effect of a generalisation intervention on social interaction for individuals with Down syndrome

Information Sheet – Postgraduate Research Assistant

My name is Gabrielle Fifield, and I am currently completing my Master of Science through the University of Canterbury. My Master's thesis involves a research project that examines the effects of a social skills intervention on social interactions, peer attitudes and friendship quality for adolescents with Down syndrome. Adolescents with disabilities tend to have difficulties maintaining and acquiring high quality friendships due to a lack of sophisticated social skills and the opportunity to use these. Unless specifically taught in other environments, these skills are often 'lost'. The aim of my study is to use generalisation techniques to teach social skills at home and at the XXX club events to see whether adolescents with Down syndrome remembers and uses these skills at school and at after-school activity trainings.

I would like to invite you to help me with this project. This would involve the following:

1) The coding of children's behaviour from video footage.
   a) The videos will be of the participants working in their classroom and playing during lunchtime. A behaviour rating scale will be used to code the child's interactions with their teacher and peers. Generalisation probes will also be video-recorded. This footage will also be of the participant's teacher aid and/or activity coordinator prompting their student to elicit six social skills (greetings/farewells, initiating social interactions, eye contact, manners and conversational skills: asking and answering questions) A observation generalisation recording sheet will be used to record whether the behaviour was present or absent and socially appropriate. You will be trained to use the behaviour rating scale and generalisation recording sheet to be able to record these interactions.
   b) All children will be wearing wristbands. One colour will be allocated to those children who have parental consent to be recorded. Children wearing a different coloured wristband do not have parental permission to be recorded, so you will not code any video segments where we have directed the camera away from these children.

2) As your coding will be used to calculate inter-rater reliability, you will only be required to code 20% of the videos. This will be approximately four 15-minute videos per week, for four weeks (i.e. approximately an hour of video to code each week).

3) You will need to keep all information from this project confidential.

Participation in this study is voluntary and you can withdraw at any point with no consequences. All information will be kept in a locked file cabinet or in a password protected document. All data will be destroyed five years after the study. Due to the nature of the research it is confidential but not anonymous. You will be given a pseudonym, however there is a small Down syndrome community in XXXX that may mean that it is possible for participants to be identified.

Please do not share the names and details of those involved in this project with people outside of the project. You will receive a report on the study. The results of this study will be published in my Master's thesis, which will become a public document on the University of Canterbury's library website. The results of this project may be used in a conference presentation and/or published articles. If you have any questions, please contact my supervisor, XXXX, or myself. Complaints may be addressed to The Chair, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch, or human-ethics@canterbury.ac.nz.

Thank you for considering taking part in this research.

Yours Sincerely,

Gabrielle Fifield.

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CHRISTCHURCH NEW ZEALAND

Telephone:
Email:

The effect of a generalisation intervention on social interaction for individuals with Down syndrome

Declaration of Consent- Postgraduate Research Assistant

☐ I have been given a full explanation of this project and have been given an opportunity to ask questions

☐ I understand what will be required of me if I agree to take part in this project

☐ I understand that I will be provided with training to undertake this position

☐ I understand that all information from the study needs to be kept confidential

☐ I understand that participating in this study is voluntary and that I may withdraw at any stage without penalty.

☐ I understand that any published or reported results will not identify me unless I give permission.

☐ I understand that I should not share the names and details of those involved in this project with people outside of the project

☐ I understand that the nature of the research and the small Down syndrome community in XXX may mean it is possible for participants to be identified.

☐ I understand that all data collected for this study will be kept in locked and secure facilities at the University of Canterbury, and will be destroyed after five years.

☐ I understand that I will receive a report on the findings of this study. I have provided my email details below for this.

☐ I understand that if I require further information I can contact the researcher, Gabrielle Fifield, or her senior supervisor, XXXX.

☐ I understand that if I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee.

By signing below, I agree to the above

Name: _____   Date: _____

Signature: _____ Email: _____

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The effects of generalisation intervention on social interactions for individuals with Down syndrome

Research Assistant – Confidentiality Agreement

This project is being undertaken for a Masters of Science thesis. My supervisors are XXX and XXX. The purpose of this project is to gather information about how children in mainstream classrooms interact with their peers who have Down syndrome.

Your role will be to code videos of the generalization responses and students interacting in both their classroom and their after-school activity training

☐ I understand that all the material I will be asked to view and record is confidential.

☐ I understand that the contents of any forms, video files, audio files or interview notes can only be discussed with Gabrielle Fifield or with her supervisors, XXX or XXX.

☐ I will store all relevant material securely while it is in my possession.

☐ I will delete all audio and video files off my computer after coding and/or transcription.

☐ I will not keep any copy of the information, nor allow third parties to access them.

☐ I understand that if I require further information I can contact Gabrielle Fifield, or her senior supervisor XXXX If I have any complaints, I can contact the Chair of the University of Canterbury Educational Research Human Ethics Committee.

By signing below, I agree to the above conditions

Name: _____

Date: _____

Signature: _____

Yours Sincerely,

Gabrielle Fifield.

APPENDIX L (i)Demographic information questionnaire for participants

The effect of a generalisation intervention on friendships and social interaction for individuals with Down syndrome

Demographic Information Questionnaire- Participant

Full Name:	
Date of Birth:	
Age:	
Ethnicity:	
Gender:	
High School:	
What extra curricular activities do you participate in?	
What do you enjoy doing in your spare time?	
What do you not like doing in your spare time?	
Who is your best friend?	

Gabrielle Fifield   XXXXX
Phone: XXXX   Phone: XXX
Email:XXXX   Email: XXXX

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The effect of a generalisation intervention on social interaction for individuals with Down syndrome

Demographic Information Questionnaire- Participant's Parents:

Full Name:	
Ethnicity:	
What extra curricular activities does your child participate in?	
What does your child enjoy doing in their spare time?	
What does your child do not like doing in their spare time?	
What primary school(s) and preschool(s) did your child attend?	
Has your child participated in any previous social skills or friendship interventions? If yes please describe below	

| Out of the social skills described below which two social skills would you like your child to work on?

Eye contact during conversations

Conversation skills- Responding to questions and asking questions during conversations

Greetings- Hello and Goodbye

Manners- please and thank you.

Initiating social interactions with other people, for example, asking a peer to hang out/play with them or asking someone for help.	

Gabrielle Fifield
Phone:
Email:

XXXXX
Phone:
Email:

APPENDIX M Pictorial Prompts

ASK

Wait

Do

thank you

LOOK!

MOVE YOUR BODY!

3

4

2
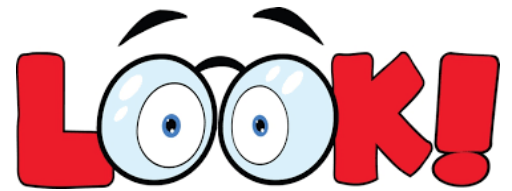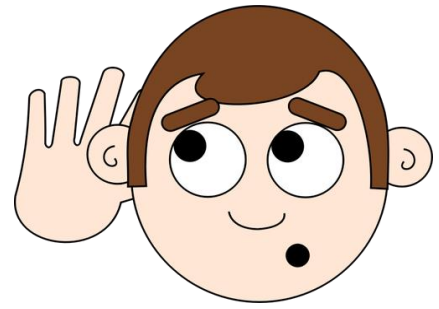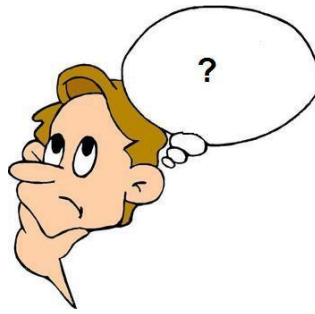
1

APPENDIX N (i) Prompt Recording Form

	Number of Prompts:	Response (R)/ Inaccurate Response (IR)/ No Response (NR)
Greetings/Farewells: "Hello"		
Greetings/Farewells: "Good bye"		
Manners: "Please"		
Manners: "Thank you"		
Conversational Skills: Asking Questions		
Conversational Skills: Answering Questions		
Initiating Interactions: Asking for help		
Initiating Interactions: Asking for to play with others		
Initiating Interactions: Asking to be partners with someone		
Eye contact		

APPENDIX N (ii) Prompts

<u>Greetings:</u>

At the start of session
 "Hello (students name), how are you?"
or
"Why don't you go and say hello to (insert child's name)"

At the end of session
 "Bye (students name), will see you later"
or
"Why don't you go and say hello to (insert child's name)"

<u>Conversation Skills:</u>

Have a conversation with the student about their weekend or anything relevant

Answering Questions:
e.g. How was your weekend? Did you get up too much?

Asking Questions:
e.g. "How about you go over there and ask Sophie whether she had a good weekend?

<u>Eye Contact/Paying Attention to Others:</u>
Use pictures of eyes to remind them about eye contact whilst having a conversation with them.
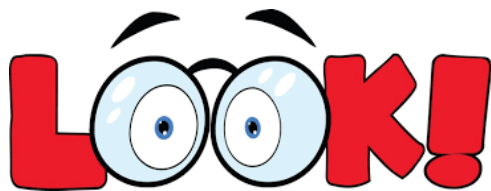
<u>Manners:</u>

Offer help

e.g. "would you like some help there, (child's name)

Or give the participant something (ball, exercise sheet, pen)

e.g. "Here is your exercise sheet"

<u>Initiating Interactions:</u>

Ask the students to get into pairs for activities/exercises

e.g. "Why don't you go and ask (another students name) to be your partner"

Suggest that the child go and play with other people

e.g. "(students name) why don't you go and dance with (another student) over there"

Suggest that the participant goes and asks another one of their peers to help them.

e.g. "why don't you ask (another students name) to help you"

APPENDIX O (ii) After-school Activity Behavioural Coding System

<u>After-school activity Behavioural Coding System</u>

During after-school activity lessons, observations of the focus student interacting with their teacher, peers and other staff members will be conducted.

Each student will be observed for 10 minutes and a new form will be used for each observation session with the focus student.

At the top of the page the date, time and session number will be recorded along with the number that identifies the student, before observations begin.

The researcher will keep at least a 2-metre distance from the focus student and their peers to make sure that they do not interfere with any normal lesson behaviours or interactions, and that lessons continue as usual.

Interactions:

The following interactions described below could be initiated by, the after-school activity teacher (AT), the focus child's peers (P), the focus child (FC) or other people (O) such as parents or after-school activity staff members etc.

Academic Interactions: An interaction that is applicable to after-school activity lesson, for example, dance instruction, basketball drill instructions, how to use the gymnastic equipment. Academic interactions can be instructional (e.g. Can you please shoot four hoops for me) or non-instructional (e.g. Your technique was really good, good work)

Functional Interactions: An interaction that is related to independent or community living, self-care, recreation or personal safety. There can be interactions that are academic and functional, for example, counting money. These combinations will be coded as functional. There can be instructional, (e.g. make sure that you write your name) and non-instructional (e.g. do you need help tying your shoe laces up) functional interactions.

Behavioural Interactions: An interaction that refers to the student's behaviour. When the interaction involves teaching appropriate behaviours to the student it is coded as instructional (e.g. putting your hands down your pants is unhygienic and not appropriate in public) If the students behaviour has been modified through praise, reprimands or redirections this interaction is coded as non-instructional (e.g. I like how you have been sitting there quietly, waiting for your turn)

Social Interactions: An interaction that involves socialising or encourages socialisation. When a student is encouraged or given a direct instruction to social with another person, this is coded as instructional (e.g. why don't you ask Jack if he can be your partner for this exercise). Interactions that show general socialisation are classified as non-instructional (e.g. I really like your necklace, where did you get it from?)

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Procedural Interactions: An interaction, which pertains routine activities or everyday classroom management and is not related to the student's individual behaviour (e.g. Right time to do our warm dance)

Column 1: Identify who the initiator of the interaction is, for example, focus child (FC), after-school activity teacher (AT), peers (P), or others (O).

Column 2: Identify who the initiator would like to interact with, for example the focus child could interact with any of the following people, after-school activity teacher, peers or others. Only these people initiating interactions with the focus child will be recorded.

Column 3: Circle the nature of the interaction from the focus child, teacher, teacher aide, after-school activity teacher, peer or other. As described above, the nature of the interactions could be the following, academic (A), functional (F), behavioural (B), social (S), or procedural (P).

Column 4: Circle the response that the responder gives back to the initiator. The following responses could be circled:
Appropriate Response (AR)- the responder greets, questions or interacts with the initiator.
Inappropriate Response (IR)- the responder has a negative to the initiator. This includes swearing, name calling, failing to comply or physical aggression (pushing, kicking, hitting, spitting or throwing objects)
Redirect (R)- the responder redirects the initiator to go and do something else, for example, "go away", "sit down". Physical gestures can also be included, for example finger pointing in another direction.
Ignore (I)- the responder ignores the initiator by looking away or not responding to the initiator.
Inaudible Response (IR)- a response that is unable to be heard.

Column 5: Circle the response that the initiator gives back to the responder. The following responses could be circled:
Appropriate Response (AR)- the responder greets, questions or interacts with the initiator.
Inappropriate Response (IR)- the responder has a negative to the initiator. This includes swearing, name calling, failing to comply or physical aggression (pushing, kicking, hitting, spitting or throwing objects)
Redirect (R)- the responder redirects the initiator to go and do something else, for example, "go away", "sit down". Physical gestures can also be included, for example finger pointing in another direction.
Ignore (I)- the responder ignores the initiator by looking away or not responding to the initiator.
Inaudible Response (IR)- a response that is unable to be heard.

After-school Activity Observation Sheet

Date:

Participant:

Start/end time:

Session number:

Initiator	Initiate With	Nature of Interaction	Response	Response of Initiator
Focus Child (FC)	AT P O	A F B S P	AR IR R I IR	AR IR R I IR
	AT P O	A F B S P	AR IR R I IR	AR IR R I IR
	AT P O	A F B S P	AR IR R I IR	AR IR R I IR
	AT P O	A F B S P	AR IR R I IR	AR IR R I IR
	AT P O	A F B S P	AR IR R I IR	AR IR R I IR
	AT P O	A F B S P	AR IR R I IR	AR IR R I IR
After-school activity teacher (AT)	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
Peers (P)	Focus Child	A F B S P	AR IR R I IR	AR IR R I IR
		A F B S P	AR IR R I IR	AR IR R I IR
		A F B S P	AR IR R I IR	AR IR R I IR
		A F B S P	AR IR R I IR	AR IR R I IR
		A F B S P	AR IR R I IR	AR IR R I IR
		A F B S P	AR IR R I IR	AR IR R I IR
Others (O)	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR
	FC WC	A F B S P	AR IR R I IR	AR IR R I IR

Lunch-time Observation Sheet:

During lunchtime, observations of the focus student interacting with their peers, teachers or other staff members will be conducted.

Each student will be observed for 15 minutes and a new form will be used for each observation session with the focus student.

At the top of the page the date, time and session number will be recorded along with the number that identifies the student, before observations begin.

The researcher will keep at least a 2-metre distance from the focus student and their peers to make sure that they do not interfere with any normal lunchtime behaviours or interactions.

Definitions:

The following interactions described below could be initiated by the teacher (T), teacher aide (TA), peer (P), focus child (FC) or other (O) such as classroom visitor, principal etc.

Functional Interactions: An interaction that is related to independent or community living, self-care, recreation or personal safety. There can be instructional, (e.g. can you please wash your hands) and non-instructional (e.g. do you need help washing your hands) functional interactions.

Behavioural Interactions: An interaction that refers to the student's behaviour. When the interaction involves teaching appropriate behaviours to the student it is coded as instructional (e.g. putting your hands down your pants is unhygienic and not appropriate in public) If the students behaviour has been modified through praise, reprimands or redirections this interaction is coded as non-instructional (e.g. I like how you have been sitting at your desk quietly all day)

Social Interactions: An interaction that involves socialising or encourages socialisation. When a student is encouraged or given a direct instruction to social with another person, this is coded as instructional (e.g. why don't you ask Jack if he has any plans for this weekend). Interactions that show general socialisation are classified as non-instructional (e.g. I really like your necklace, where did you get it from?)

Unoccupied Behaviour:
The focus student is not engaged in any form of interaction with another person. This may mean the child is standing, sitting, facing away from other students or engaged in an activity that doesn't involve interactions with other people for example, eating or reading books.

Column 1: Identify who the initiator of the interaction is, for example, focus child (FC), teacher (T), teacher aide (TA), peers (P), or others (O).

Column 2: Identify who the initiator would like to interact with, for example the focus child could interact with any of the following people, teacher, teacher aide, peers or others. Only these people initiating interactions with the focus child will be recorded.

Column 3: Circle the nature of the interaction from the focus child, teacher, teacher aide, after-school activity teacher, peer or other. As described above, the nature of the interactions could be the following, academic (A), functional (F), behavioural (B), social (S), or procedural (P).

Column 4: Circle the response that the responder gives back to the initiator. The following responses could be circled:
Appropriate Response (AR)- the responder greets, questions or interacts with the initiator.
Inappropriate Response (IR)- the responder has a negative to the initiator. This includes swearing, name calling, failing to comply or physical aggression (pushing, kicking, hitting, spitting or throwing objects)
Redirect (R)- the responder redirects the initiator to go and do something else, for example, "go away", "sit down". Physical gestures can also be included, for example finger pointing in another direction.
Ignore (I)- the responder ignores the initiator by looking away or not responding to the initiator.
Inaudible Response (IR)- a response that is unable to be heard.

Column 5: Circle the response that the initiator gives back to the responder. The following responses could be circled:
Appropriate Response (AR)- the responder greets, questions or interacts with the initiator.
Inappropriate Response (IR)- the responder has a negative to the initiator. This includes swearing, name calling, failing to comply or physical aggression (pushing, kicking, hitting, spitting or throwing objects)
Redirect (R)- the responder redirects the initiator to go and do something else, for example, "go away", "sit down". Physical gestures can also be included, for example finger pointing in another direction.
Ignore (I)- the responder ignores the initiator by looking away or not responding to the initiator.
Inaudible Response (IR)- a response that is unable to be heard.

Lunchtime Observations:

Participant:

Session number:

Initiator	Initiate With	Nature of Interaction	Response	Response of Initiator
Focus Child (FC)	T TA P O	F B S	AR IR R I IR	AR IR R I IR
	T TA P O	F B S	AR IR R I IR	AR IR R I IR
	T TA P O	F B S	AR IR R I IR	AR IR R I IR
	T TA P O	F B S	AR IR R I IR	AR IR R I IR
	T TA P O	F B S	AR IR R I IR	AR IR R I IR
	T TA P O	F B S	AR IR R I IR	AR IR R I IR
Teacher (T)	Focus Child	F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
Teacher Assistant (TA)	Focus Child	F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
Peers (P)	Focus Child	F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
Others (O)	Focus Child	F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR
		F B S	AR IR R I IR	AR IR R I IR

Initiator:	Nature of Interaction:	Time (e.g. 30 seconds)							
Focus Child (FC)	UB								

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The effect of generalisation intervention on social interaction for individuals with Down syndrome

Friendship Quality Questionnaire (FQQ)

Name:

Please complete the questionnaire below. Remember to think about each question carefully and then tick the box that you agree with.

	Never True	Sometimes True	Always True
(name of best friend) and I spend all our free time together.			
(name of best friend) and I do fun things together.			
(name of best friend) and I go to each others houses after school and on the weekends			
(name of best friend) and I pick each other as partners for things			
I can get into fights with (name of best friend).			
(name of best friend) can bug or annoy me even though I ask him/her not to			
(name of best friend) and I argue a lot			
(name of best friend) and I disagree about many things			
(name of best friend) and I loan each other things all the time.			
(name of best friend) helps me when I am having trouble with something			

(name of best friend) would help me if I needed it.			
If other kids were bothering me, (name of best friend) would help me.			
(name of best friend) would stick up for me if another kid was causing me trouble			
If I have a problem at school or at home, I can talk to (name of best friend) about it.			
If there is something bothering me, I can tell (name of best friend) about it even if it is something I cannot tell to other people.			
If I said I was sorry after I had a fight with (name of best friend), he/she would still stay mad at me.			
After a fight (name of best friend) and I make up.			
If (name of best friend) and I have a fight or argument we can say "I'm sorry" and everything will be all right.			
If (name of best friend) had to move away I would miss him/her			
I feel happy when I am with (name of best friend)			
I think about (name of best friend) even when he/she is not around.			
When I do a good job at something (name of best friend) is happy for me.			
(name of best friend) does things for me, or makes me feel special.			

APPENDIX Q Friendship Quality Semi-structured Interview:

Date:

Name: Child's Name:

1) Who would you classify as your child's best friend?

2) How did they meet?

3) How often do your child and their best friend hang out?

      a)   Would you say that they miss each other when they don't hang out?

4) What kind of activities do they participate in when they hang out together?

5) Do you think your child and their best friend would confide in each other about secrets or other important things?

6) Has there ever been a moment where your child or their best friend has stuck up for one another or helped each other out?

If not, do you think that your child or their best friend has stuck up for one another?

7) Does your child and their best friend often get into disagreements or arguments?

If yes,
      a) How often?

      b) Do they tend to make-up pretty quickly?

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The effect of generalisation intervention on friendships and social interaction for individuals with Down syndrome

Behavioural Intention Scale (BIS)

Jane is 15 years old and has cerebral palsy. Jane uses a wheel-chair to get around, especially when she goes to school. Jane loves horse riding and chatting to friends. She often phones them in the evening.

	'no'	'probably no'	'probably yes'	'yes'
I would go up to him/her and say hello	1	2	3	4
I would sit beside him/her in class	1	2	3	4
I would hang out with him/her during lunch time	1	2	3	4
I would offer to share	1	2	3	4
I would choose him/her to be on my team during PE	1	2	3	4
I would work with him/her on a class project	1	2	3	4
I would go to his/her house to hang for dinner	1	2	3	4
I would go to the movies with him/her	1	2	3	4
I would share a secret with her /him	1	2	3	4
I would invite him/her to my house to hang out.	1	2	3	4

Josh is 14 years old and has Down syndrome. Josh takes longer to learn new things in the class-room. It is sometimes difficult to understand Josh when he talks. Josh loves singing along to pop songs and playing rugby with his friends

	'no'	'probably no'	'probably yes'	'yes'
I would go up to him/her and say hello	1	2	3	4
I would sit beside him/her in class	1	2	3	4
I would hang out with him/her during lunch time	1	2	3	4
I would offer to share	1	2	3	4
I would choose him/her to be on my team during PE	1	2	3	4
I would work with him/her on a class project	1	2	3	4
I would go to his/her house to hang for dinner	1	2	3	4
I would go to the movies with him/her	1	2	3	4
I would share a secret with her /him	1	2	3	4
I would invite him/her to my house to hang out.	1	2	3	4

Sam is 17 years old and has cerebral palsy. Sam uses crutches to get around, especially when he goes to school. Sometimes it is hard to understand Sam. Sam is a huge All Blacks fan, his favourite player is Richie McCaw.

	'no'	'probably no'	'probably yes'	'yes'
I would go up to him/her and say hello	1	2	3	4
I would sit beside him/her in class	1	2	3	4
I would hang out with him/her during lunch time	1	2	3	4
I would offer to share	1	2	3	4
I would choose him/her to be on my team during PE	1	2	3	4
I would work with him/her on a class project	1	2	3	4
I would go to his/her house to hang for dinner	1	2	3	4
I would go to the movies with him/her	1	2	3	4
I would share a secret with her /him	1	2	3	4
I would invite him/her to my house to hang out.	1	2	3	4

Grace is 13 years old and has Down syndrome. Grace doesn't talk much and sometimes finds it hard to follow instructions in class. She loves to swim and would like to represent New Zealand for swimming one day. Grace also enjoys art at school, especially painting.

	'no'	'probably no'	'probably yes'	'yes'
I would go up to him/her and say hello	1	2	3	4
I would sit beside him/her in class	1	2	3	4
I would hang out with him/her during lunch time	1	2	3	4
I would offer to share	1	2	3	4
I would choose him/her to be on my team during PE	1	2	3	4
I would work with him/her on a class project	1	2	3	4
I would go to his/her house to hang for dinner	1	2	3	4
I would go to the movies with him/her	1	2	3	4
I would share a secret with her /him	1	2	3	4
I would invite him/her to my house to hang out.	1	2	3	4

APPENDIX S Social Validity and Novel Environment Interview

1) Did you enjoy it when I would come round on Mondays and teach you some social skills?

   a) What was your favourite part?

2) Did you enjoy it when we would go to XXX early and go over the social skills you learnt on Monday?

a) Did you find these sessions helpful?

3) Did you like going to the mall with XXX, XXX and I?

a) Did you find it helpful?

4) Did you find the pictures for each of the social skill steps helpful?

5) Did you find the role-plays that we did in a group helpful?

6) Do you think you could ask someone for help if you needed it?

7) Do you think you could ask someone to hang out with you all by your self if you wanted to?

8) Do you think you could go up to a friend and have a conversation with them?

Parent Questions:

b) Have you noticed any change in your child's behaviour after the intervention or even during?

c) Can you recall a time during or after the intervention where your child asked someone to hang out/play with them or asked for help?

d) Can you recall a time during or after the intervention that you noticed your child asking and answering questions during a conversation?

APPENDIX T: Treasure Hunt

Shoe Connection: XXX
- Need to find Converse shoes.
- Need to find information desk.

Information desk: XX
- Need to find paper plus

Paper Plus: XX
- Need to find envelopes.
- Need to find Warehouse.

The Warehouse: XXX

- Need to find knitting wool.
- Need to find Countdown

Countdown: XXX
- Need to find sundried tomatoes.
- Need to find pasta

Acquisitions: XXX
- Need to find handbags
- Need to find Hallensteins.

TREASURE HUNT

WE ARE GOING ON AN ADVENTURE. WE HAVE TO FIND EACH OF THE STORES AND ITEMS ON THE LIST BY ASKING PEOPLE FOR HELP. AT THE END OF THE TREASURE HUNT YOU WILL FIND THE GOLD.

	TICK:
SHOE CONNECTION: CONVERSE SHOES	
INFORMATION DESK:	
PAPER PLUS: ENEVLOPES	
THE WAREHOUSE: CRAFTS	
COUNTDOWN: SUNDRIED TOMATOES PASTA	
ACQUISITIONS: HANDBAGS	
HALLENSTEINS	

APPENDIX U (i) Gemma's prompt recording results.

	Baseline Phase			Intervention Phase			Generalisation Phase		
	Number of Opportunities	Positive Responses	Negative Responses	Number of Opportunities	Positive Responses	Negative Responses	Number of Opportunities	Positive Responses	Negative Responses
Total Number	18	18	-	30	29	1	12	12	-
Greetings	2	2	-	-	-	-	2	2	-
Manners	3	3	-	-	-	-	2	2	-
Initiating Interactions	1	1	-	6	6	-	2	2	-
Conversation Skills	8	8	-	24	23	1	6	6	-
Eye contact	-	-	-	-	-	-	-		

APPENDIX U (ii) Grayson's prompt recording results.

	Baseline Phase			Intervention Phase			Generalisation Phase		
	Number of Opportunities	Positive Responses	Negative Responses	Number of Opportunities	Positive Responses	Negative Responses	Number of Opportunities	Positive Responses	Negative Responses
Total Number	13	13	-	29	29	-	11	11	-
Greetings	2	2	-	-	-	-	2	2	-
Manners	3	3	-	-	-	-	2	2	-
Initiating Interactions	1	1	-	10	10	-	3	3	-
Conversation Skills	6	6	-	19	19	1	4	4	-
Eye contact	-	-	-	-	-	-	-	-	-

APPENDIX U (iii) Caroline's prompt recording results.

	Baseline Phase			Intervention Phase			Generalisation Phase		
	Number of Opportunities	Positive Responses	Negative Responses	Number of Opportunities	Positive Responses	Negative Responses	Number of Opportunities	Positive Responses	Negative Responses
Total Number	14	14	-	34	34	-	16	16	-
Greetings	2	2	-	-	-	-	2	2	-
Manners	6	6	-	-	-	-	3	3	-
Initiating Interactions	1	1	-	10	10	-	4	4	-
Conversation Skills	9	9	-	13	23	-	7	7	-
Eye contact	-	-	-	1	1	-	-	-	-

APPENDIX V Recruitment Poster.

Masters Degree Research Project!

Is your child:
Aged 13-18?
Attending a mainstream XXXX school?
Involved in an extra-curricular activity?

In 2016 we will be running a study to teach social skills at home and at the XXX club events to see whether adolescents with Down syndrome remember to use these skills in other settings.

This will include us observing your child interacting with their peers during school and extra curricular activity trainings.

This project will be running from June till July 2016.

If you are interested in participating or would like more information please contact Gabrielle at:

XXXXXXX

This study has been approved by the University of Canterbury Human Ethics Committee and is part of a Master's thesis project.