Enhancing Prosocial Interactions in an Adult with Multiple Challenges through

Social Skills Training

by

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DEDICATION

I would first like to dedicate this thesis to the participant of my study, the underlying reason for its success. Secondly, to all the others I have had the pleasure of working with throughout the past four years. Each one of them has been an inspiration, and has positively changed my life.
ABSTRACT

This single-case study focused on increasing appropriate initiations of conversations in a 46-year-old woman with an intellectual disability, Noonan’s Syndrome, Obsessive Compulsive Disorder and a hearing impairment. The intervention selected was social skills training which involved social stories, effective praise, and behavioural rehearsals in supported social environments. The research design chosen was a multiple baseline design. This design was selected as it is useful when teaching a nonreversible skill and also helps to minimize the threat of any extraneous variables. Data collection was completed using partial-interval recording to record the percentage of appropriately initiated conversations during a half hour time period at three different settings. Results were examined using percentage of nonoverlapping data (PND), revealing the treatment to be highly effective. There were changes in the intervention throughout implementation that may have contributed to the promising results. These, along with strengths, limitation, additional recommendations and areas for improvements will be explored in detail in this report.
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Chapter I: Introduction

The way in which one acts in a social situation influences the way others choose to respond in subsequent exchanges (Raymond & Matson, 1989). In order to build satisfying relationships, people must have the appropriate skills in their repertoire to display prosocial behaviour. It has been suggested that some individuals with a hearing impairment display low levels of the ability to consider the perspective of others (Weisel & Bar-Lev, 1993). This, in turn, limits their success in reciprocal relationships. Individuals who have an intellectual disability also tend to show deficits in social interaction skills (Cutts & Sigafoos, 2001). These disadvantages create multiple barriers in building and maintaining friendships for individuals with both a hearing impairment and an intellectual disability.

Social skills has been defined by Spence as “those components of social behaviour which are necessary to ensure that individuals achieve their desired outcome from a social interaction” (1980, p. 9). Social Skills training has become an increasingly used, effective intervention for multiple populations (Duan & O’Brien, 1998). Developing a social story is one technique that can be used to teach social skills. Social stories are short narratives which describe the aspects of social situations and illustrate appropriate responses to social cues (Gray, 1993). Social stories and social skills training have been extensively applied to children and those with Autism Spectrum Disorder. Behavioural Rehearsals have also been used when teaching conversation and interaction skills (Bellini, 2006).

Praise is often used when teaching a skill and is something that is enjoyed by many individuals. General praise could include statements like, “good job” or “well done”. For some individuals, these general statements may not be valuable because they don’t specifically identify the behaviour that is receiving the recognition. Effective praise has been developed to specifically identify the behaviour being praised (Dowd, & Tierney, 2005). Effective praise includes five precise steps to ensure that the individual knows why they are being praised and why they should continue the behaviour.

It is proposed that social skills training involving social stories, effective praise, and behavioural rehearsals provided in supportive social environments will enhance prosocial interactions in a middle-aged adult with an intellectual disability, Noonan’s Syndrome, Obsessive Compulsive Disorder and a hearing impairment. As there is limited research on this unique combination of deficits, it is important to further investigate these techniques, with an adult who could benefit from learning appropriate interaction skills.

This thesis will include: an extensive review of the literature; the methodology of the current study; the results and an overall discussion and conclusion.
Chapter II: Literature Review

The current literature review looks at social interaction difficulties in the hearing impaired population and those with an intellectual disability. Additional information is explored on Obsessive Compulsive Disorder and Noonan’s Syndrome. Interventions that have previously been used for increasing appropriate social interactions are also examined to identify the best practice to use with an individual who has a hearing impairment, an intellectual disability, Obsessive Compulsive Disorder and Noonan’s Syndrome. What follows is an in depth look at the research and a rationale for the current study.

Social Interactions and Hearing Impairment

It has been suggested that individuals with hearing impairments may have difficulty learning and expressing social behaviours (Raymond & Matson, 1989). Raymond and Matson suggested that a key reason for this was the large importance auditory cues have on the understanding of information presented by the hearing community. Raymond and Matson also noted that the lack of cues received by those individuals with hearing impairments may result in them experiencing less reciprocal social interactions. These authors performed a series of studies to identify variables that are relevant in the acquisition of social skills in individuals with hearing impairments. These studies only focused on those individuals with hearing impairments, excluding any individual that had any other diagnosis. This leads to the question of the combined effects of having a hearing impairment and other disabilities on the attainment of socially appropriate behaviour and what has been done, or can be done, to teach these skills.

Social Interactions and Intellectual Disabilities

Carter & Hughes (2005) conducted a critical analysis which identified effective interventions designed to increase social interactions in individuals with intellectual disabilities. Many of the studies analyzed involved participants who had comorbid disabilities or impairments such as a hearing loss. Carter and Hughes believed that this population has challenges carrying out appropriate social skills such as: adapting to new social situations; carrying out a communication exchange; or understanding pertinent social cues. They observed that one’s relationships and conversations with others are critical to enable learning, practicing, and perfecting social skills.

Background Information on Obsessive Compulsive Disorder

Social skill difficulties may be further identified if one has an Obsessive Compulsive Disorder. Obsessive Compulsive Disorder is a type of Anxiety Disorder (American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders, 1994). With this disorder, the brain has difficulty dealing with any amount of worry and doubt. There are many different things people can worry about. These worries occupy an individual’s thoughts for long periods of time and are recurrent. These
constant worries are called obsessions and the results of these obsessions (i.e. excessive hand washing) are called compulsions. Compulsions (or rituals) are what people do to try and make the obsessions go away. As a result, compulsions are repeated with more intensity to try and relieve the anxiety which underlie the obsessions (Wagner, 2006). The rituals an individual performs are not something they want to do; rather they feel they must (Nemours Foundation, 2007). Due to this constant worry and preoccupation, individuals have a hard time doing the fun things they enjoy, including making friends.

Individuals with an intellectual disability may not have the typical symptoms of Obsessive Compulsive Disorder as they often lack the ability for abstract thought (King, Stravrakaki, & Gedye, 2007). An individual with an intellectual disability, especially if he or she is deaf, may be unlikely to verbally express obsessions, but may partake in nonverbal compulsive ritualistic behaviour. Unlike individuals with average intelligence, those individuals with an intellectual disability may not have the awareness to understand that their compulsive behaviour is disapproved by the society, therefore may not try to lessen this behaviour.

Background Information on Noonan’s Syndrome

Another disability that can be combined with a hearing impairment, Obsessive Compulsive Disorder, and an intellectual disability is Noonan’s Syndrome. This is a congenital disorder with an assortment of physical features (Fakouri & Fakouri, 1998). Fakouri and Fakouri’s research with children who have Noonan’s syndrome showed that they react well when their surroundings are consistent and structured. Due to these findings, behaviour modification was suggested as an appropriate intervention.

Social Stories

One behavioural technique that has shown promise is social stories, which are short narratives written in the first person. They were developed by Carol Gray to support understanding of social situations for children with Autism Spectrum Disorders (Rust & Smith, 2006). Social Stories often result in improved social understanding as they are written after considering the perspective of individuals with Autism Spectrum Disorders, identifying pertinent information that is needed for the individual to understand a specific skill, concept, or situation (Gray, 1993). These stories are individualized, describing the “what, when, how, and why” of the chosen topic (Rust & Smith, 2006). Four types of sentences were outlined to be used in the formation of social stories: descriptive, perspective, directive, and affirmative. Descriptive sentences are essential as they pertain to the “what, when, and why” questions described earlier. Perspective sentences are used in order to address feelings or internal states that another individual has, for example, “staff are happy when I wait my turn”. Directive sentences associate a specific response to a given situation, for example, “when two people are talking, I will say excuse me or wait until they are finished”. Lastly, the affirmative sentence emphasizes the critical message and also supports the behaviour, for example, “this is the proper thing to do”. Carol Gray suggested that a ratio of between two and five descriptive, perspective, and/or affirmative sentences be used for every one directive sentence (Gray, 1993). Specific
inclusion of the required sentence types, as well as content, make social stories unique from other behavioural techniques such as task analyses, social scripts, and visual strategies.

Social stories have been effective when used in combination with other techniques, although a review of the literature highlights that there is limited research showing the effects social stories alone have on behaviour change (Scattone, Tingstrom & Wilczynski, 2006). Due to this lack of literature, Lorimer, Simpson, Myles & Ganz (2006) used this technique as the sole intervention to address tantrums, motivated by attention and tangible reinforcers, in a 5-year-old boy diagnosed with mild to moderate autism. Two stories were developed for this boy. One focused on his need for adult attention and the other on waiting. These stories were read to him each morning, before each therapy session, just before two adults were about to start a conversation, or any other time he requested such. Event recording was utilized with an ABAB design (with A being baseline and B being intervention) which showed social stories to be an effective intervention when used alone to decrease tantrum behaviours. This intervention took place in the client’s home setting (Lorimer et al, 2006). However, generalization of the behaviour was not studied, and has left this area open to future research.

**Multiple Baseline Design and Social Stories**

One way in which to show generalization of a technique is to create a multiple baseline design across settings. A multiple baseline design is helpful in minimizing the threat of extraneous variables (Hayes, Barlow & Nelson-Gray, 1999). Multiple baselines are useful when teaching skills as skills are often nonreversible therefore lessening the efficacy of other designs such as the return to baseline (Carter & Hughes, 2005). A multiple baseline design is completed by recreating the phase in more than one series, whether it is with different clients, behaviours, or settings (Hayes et al, 1999). A multiple baseline across settings sets out to establish experimental control by applying an intervention to the same participant across different times or settings (Bailey & Burch, 2002).

Scattone et al. (2006) used social stories in a multiple baseline design in hopes to increase social interactions across three participants who each had an Autism Spectrum Disorder. Those authors focused on social stories as the sole intervention, but concentrated on increasing an appropriate social interaction rather than decreasing an inappropriate behaviour. This target behaviour was chosen, because much of the literature to date has involved decreasing inappropriate behaviours.

In order to determine the exact effects of this intervention alone, social stories were in black and white and did not include any illustrations (Scattone et al, 2006). There was a teacher training component including behavioural rehearsals to determine their understanding of the procedures and to decide on the most successful location to read. Questions were also developed regarding the story and each participant was asked the questions to assess comprehension. If 100% accuracy was not obtained, a second reading was needed and delivered. In addition, treatment integrity was calculated by
dividing the number of days the story was read by the total number of days the intervention phase was in place. Results with three clients showed an increase in social interactions which ranged from 4% to 39%.

Although a very traditional approach to a social story was used in the preceding intervention using only black and white and non-illustrated stories, there are many ways in which one can develop a social story. Bellini (2006), talked about social stories as being a strategy which promoted skill acquisition. He felt that by using pictures, it would add to the concept being taught. There can even be a personal touch added in which the pictures used in the story are real life photos of the participant.

Soenkson and Alper (2006) went beyond the traditional format of a social story when trying to teach a child to appropriately gain peer attention. Both verbal and visual cues were used to develop a story entitled, “getting my friend’s attention”. This story was read at the beginning of each target setting, taking approximately five minutes to complete. This social skills training took place in a school using a multiple baseline design across three settings; recess, choice time, and math. Results indicated a positive increase in the frequency of appropriately gaining peer attention across the three settings. A limitation to this study was that although the intervention was implemented in three different settings, they were all within the school environment.

Overall, research involving social stories has been heavily focused on the ASD population. Social stories have not been studied with other populations. Scattone et al. defend social stories by stating that the field may not have, “yet identified the population that may benefit the best from this intervention for increasing appropriate social skills” (2006, p. 219).

**Social Stories and Behavioural Rehearsal**

Behavioural rehearsals are another behaviour modification technique that has been used with hearing-impaired children to determine if they enhance their narrative production (story retelling) (Pakulski & Kaderavel, 2001). By narrative production, they meant the children’s ability to summarize and retell details of a story that was read to them. This study was conducted due to the limited research on narrative development within the deaf or hard of hearing population and to identify specific techniques that are useful when working with these individuals. It was hoped that story role-play would allow for greater understanding of the text. Grammar scores across two conditions were compared. The conditions were: repeated book reading only; and repeated book reading plus role-plays. The addition of the role-play had a highly significant effect on narrative production. These results may suggest that paraprofessionals and other educators should utilize role plays to facilitate learning through narratives. The results however should be reviewed with caution as the stories were read (not signed) to these children who are deaf or hard of hearing. The behavioural rehearsals may have been effective because they are more like their natural language of sign. There wasn’t any mention in the article of the use of sign language, or the children’s level of comprehension to spoken language.
**Effective Praise**

Effective praise is used to allow an individual to understand why they are being praised (Dowd & Tierney, 2005). Dowd & Tierney outlined the five components that must be included in an effective praise statement. The statement must begin with brief praise, followed by a description of the appropriate behaviour that was shown. The individual would then be given an explanation for using this behaviour and then be asked for acknowledgement to ensure comprehension. Finally, one should end with a positive consequence, in order to increase the likelihood that the appropriate behaviour will continue in the future. Dowd and Tierney (2005) suggested that effective praise be used when an individual has displayed behaviour they already know and it is preferred that they continue making small improvements to the behaviour. Effective praise can also be used when positive attempts were made at a new skill being taught.

Effective praise was used in a study by Marchant, Young, and West (2004) as a component of compliance training with children. Parents were first trained by a coach in the different techniques to be incorporated within the compliance training. Compliance training consisted of effective praise, instructive praise, direct teaching sequence, and corrective teaching sequence. Children were being measured on their compliant behaviour which involved them looking at the person, saying, “okay”, doing the task quickly and completing it. Compliance training was delivered by the parents to their children. Results showed that effective praise was one component which contributed to the positive increase in compliance. There was limited data to reveal how beneficial effective praise would be on its own, as only the combined effects were measured. Similarly a second study by Marchant & Young (2001), which involved effective praise as one component parents used with their noncompliant children, found parents to be successful in increasing their children’s compliance. When parents showed the correct skills, there was a parallel increase in the children’s compliance.

**Staff Training**

When working as a behavioural consultant, partnership is vital to create a relationship of trust with those involved in an individual’s life (Sheridan & Kratochwill, 2008). Sheridan and Kratochwill laid out the framework for working collaboratively with the educational system, although the information delivered could be easily transferred to group home staff or parents. In order to effectively create this collaborative relationship there must have been: two-way positive and frequent communication; supportive, clear, mutual roles; shared goals; equality; and parity. Equality referred to, “the willingness to listen to, respect, and learn from one another” (Sheridan & Kratochwill, 2008, p. 4) and parity referred to, “the blending of knowledge, skills, and ideas to enhance the relationship and outcomes (Sheridan & Kratochwill, 2008, p. 4).

An early research study looked at staff performance in implementing behavioural programs (Pommer & Streedbeck, 1974). They researched the effects of implementing antecedent changes and rewards for staff, and how this compared to their job performance in a residential setting. One-way mirrors as well as random supervisor visits
were used to observe staff performance. The antecedent manipulations were postings of specific jobs for each staff. Reinforcement was in the form of a slip that could be later exchanged for monetary value. Pommer & Streedbeck looked at the effects of the posting alone, combined with slips, removal of slips and then reintroduction. Results from baseline observations showed that staff completed an average of 42% of the jobs and implemented 40% of the behavioural procedures (Pommer & Streedbeck, 1974). Instant improvements were made after public posting were put into place, although these results declined with time. The public postings resulted in an overall average of 77% for both job completion and program implementation. Further improvements resulted from the introduction of job slips, which indicated that using both public postings and jobs slips was more beneficial then either one alone.

This research provides evidence for the possibility of increasing staff follow-through on behavioural procedures (Pommer & Streedbeck, 1974). It is important to note that results from this study were strongest directly after the introduction of the procedures (public postings and job slips) yet declined with time. This showed that research is needed to show the long-term effects and the procedures that would be advantageous to keep staff continuously engaged, as monetary awards may not always be feasible.

One research study specifically looked at the effects of staff training on the development and implementation of social stories (Quilty, 2007). By using a multiple baseline design across subjects, the author investigated whether paraprofessionals, after being trained, could accurately design and deliver effective social stories to individuals with ASD. The paraprofessionals involved had limited, if any, previous training in this area and the students who were matched with each paraprofessional also had minimal experience with this intervention. Training totaled 3 hours in length which included: discussion around communication difficulties experienced by those individuals with Autism Spectrum Disorders, the steps involved in a social story, examples of social stories, and a video developed by Carol Gray. This study found that paraprofessionals were not only able to design and implement a social story effectively; the stories also decreased the frequency of the target behaviours of those individuals with ASD. This study further supports the usefulness of social stories as an intervention.

Along with paraprofessionals, parents can also implement interventions with the correct training. In one study which involved parent coaches, parents were given support through feedback, modeling, and follow-up calls (Marchant et al, 2004). Near the end of training more informal contact was used as a way to fade the coach’s role. Parents were also supplied with a manual which provided them with steps and instructions, along with recording forms to self-monitor behaviour.

Parents have been shown to effectively implement social stories in particular. A single case design was used with a 7-year-old boy with ASD to address 4 inappropriate behaviours: crying, falling, hitting, and screaming (Adams, Gouvousis, VanLue, & Waldron, 2004). Since these behaviours all appeared to serve the same function (escape from homework), only one story was developed. An ABAB design was used (with A being baseline, and B being the social story intervention) with notable results. Results
from the intervention were as follows: 48% decrease in crying; 61% decrease in screaming; 74% decrease in falling; and 60% decrease in hitting.

Although this intervention was within the home setting, carry-over effects were looked at within the school environment (Adams et al, 2004). Anecdotal reports from the boy’s classroom teacher showed that the teacher believed he had better responses to difficulties as a result of the social story. Expressive language also increased subsequent to the introduction of the social story.

**Rationale for Current Study**

The literature review revealed that social stories have been extensively applied to those individuals with an Autism Spectrum Disorder (ASD). There has been much success with this technique when applied to this population, and children in particular. Social stories seemed to address the barriers experienced by this particular population by providing a concrete meaning to specific situations. The addition of visual cues into a social story also personalizes the story and presents a supplementary information source.

There is limited research investigating the benefits of social stories with other populations despite the success they have shown with the ASD group. The next logical step would be to examine the effectiveness of social story techniques with other populations. As discussed, individuals with hearing impairments and intellectual disabilities have difficulty in social situations. These difficulties are shared with the Autism population. Children with ASD misunderstand social cues and lack reciprocal relationships (Adams, et al, 2004). Because social stories can be used to teach appropriate social skills, it seems logical that they would be beneficial for individuals with an intellectual disability, Noonan’s Syndrome, Obsessive Compulsive Disorder and a hearing impairment. Individuals with intellectual disabilities have been identified in the literature as having difficulties with social exchanges, understanding social cues, and adapting to new situations. Hearing impaired individuals may also have difficulty with social behaviour. These skills could be used as content to create a social story similar to those used with the ASD population. Individuals with Noonan’s syndrome have been recognized as benefiting from structure. Social stories are a very structured intervention with a specific criterion being used to develop one.

Generalization and maintenance are concerns when using social stories as a sole intervention. By using a multiple baseline design across settings, it should decrease some of the problems of generalization. Moreover, including effective praise delivered by staff for appropriate behaviour conveyed in the social story, should increase generalization of appropriately initiated conversations to other situations and maintain over time. If this is successful, it is anticipated that other stories will be developed which will enhance the overall quality of life within the individual. It is hypothesized that by using social skills training involving a social story, effective praise, and behavioural rehearsals for further clarification will increase the regularity of appropriately initiated conversation in an individual with an intellectual disability, hearing impairment, Obsessive Compulsive Disorder and Noonan’s Syndrome.
Chapter III: Method

Participants and Setting

The current study consisted of a single participant who was a 46-year-old female with an array of diagnoses. Glenda Walker\(^1\) was referred by her behavioural consultant who had concerns about her friendship skills. She was described as being bossy, and lacking the understanding of give and take in relationships. It was believed that Glenda would benefit from training in regard to initiating conversations. It was hoped that her quality of life would be enhanced by the development of meaningful relationships.

At the age of 25 Glenda was diagnosed with Noonan’s syndrome. She has also been diagnosed with aphasia. This communication disorder lessons the ability for language as a result of damage to the areas of the brain which specialize in language; both production and comprehension. Psychological testing completed in 1982 as well as 1986 showed a developmental delay in the mild range. Glenda has moderate to moderate/severe bilateral hearing loss, because of which she requires hearing aids although, refuses to wear them. Glenda also has Obsessive Compulsive Disorder. She obsesses over anything “cute”, and especially likes dogs and stuffed animals. Rituals that Glenda participates in involve wrapping her stuffed animals in yarn, writing all over them in magic marker, and demanding them to be mailed away. Anecdotal reports from staff identify that there is a noticeable decrease in anxiety when Glenda believes that her things have been mailed away.

Glenda did not acquire any real speech as a child. She attended school for a short period until her disruptive and aggressive behaviours prevented her from being allowed to continue. She lived with her parents until the age of 12 when she moved into an institution. She moved from the institution in March of 1998 when she began to receive services from a community agency. This agency provides assistance to the deaf and hard of hearing population. Glenda currently resides in a group home through this organization. Glenda goes home to her parents for family visits, usually for Christmas, a week in duration. She also has two sisters and one brother.

Glenda attends a day program Monday through Friday. This program provides activities for individuals to occupy their day. Activities focus on such things as leisure, recreation, social skills and communication. Individuals attending this day program also have the opportunity to partake in woodworking and gardening. Within the program there is also a “Collective Kitchen” program in which the individuals have the opportunity to learn new recipes and prepare meals.

In addition, Glenda is involved in a weekly outing to a “puppy park” with a volunteer. This excursion allows Glenda the social opportunity to get out, meet new people and to satisfy her interest in seeing “cute” things. Other outings that Glenda is sporadically involved in are dances or going out for a coffee. To date, there has not been any programming for Glenda regarding social skills.

\(^1\) For reasons of confidentiality all client names used in this report are fictional
The Behavioural Psychology Program’s standard informed consent letter that is designed for those students working with adults and doing a thesis was used (Appendix A). The letter was explained to the Glenda’s mother, signed and returned prior to the start of intervention. This approach was recommended by the agency team leader, as it wasn’t certain Glenda would understand the contents of the consent form. Assent was also obtained by the individual by verbally asking if it was okay to work with her on “making friends”. In addition, this research study was approved by the Research Ethics Committee for Psychology (REC-P) at St. Lawrence College, and the agency’s consulting psychologist.

**Design**

The current study used a multiple baseline design across settings. Partial-interval recording was used to record the percentage of appropriately initiated conversations displayed in three different settings. The three settings were Puppy Park, home and day program. An AB design was used, with “A” being baseline. During this time observations and recordings were made on the naturally occurring behaviour. The “B” phase was when the intervention, being social stories and effective praise, were implemented with recordings and observations still continuing. An additional “C” phase involving social skills training: role-playing; behavioural rehearsal; or feedback (e.g. practicing an initiation, receiving recommendations) was considered as an option, although it wasn’t necessary after the effects from the “B” phase were examined.

 Appropriately initiated conversations were the dependent variable in the study. This was operationally defined as: any spontaneous or self-initiated communication directed toward another individual (i.e. peers and staff) including helping or sharing. This will not be said to occur if she joins in on two or more other individuals who are already engaged in conversation.

 Making new friends requires a lot of skill. It is felt that Glenda will benefit in social situations by developing these friendship skills. It is felt that if she learns the skill of initiating a conversation, Glenda will later be able to develop other communication and friendship skills. For example, initiating a conversation may include the friendship skill of offering help. By teaching one skill at a time, it is anticipated that Glenda will feel a sense of mastery and have a positive learning experience.

 The intervention was carried out by front-line staff. In order for the program to be beneficial for Glenda, it was important that staff delivered the intervention because of the communication barriers between this author and Glenda. Communication with Glenda is done by a combination of American Sign Language and loud spoken vocalizations. Key workers were identified and asked if they were willing to participate. Training consisted of general information on the techniques being used. Handouts and examples were also provided for further clarification. Appendix B provides a sample handout on effective praise. Data sheets were also made available, although this author collected the data presented in this report.
**Measures and Data Collection**

The functional assessment consisted of: a file review, a functional assessment interview with the behavioural consultant, a questionnaire with front-line staff, and a sequence (ABC) analysis for interrupting. The file review was completed to allow this author to become familiar with Glenda’s background information as well as to identify any relevant information that would contribute to the success of a behavioural program. O’Neill et al.’s (1997) Functional Assessment Interview was adapted to use with an adult client and completed with Glenda’s behavioural consultant in order to gain knowledge regarding schedules, communication, reinforcers, and any other applicable information. The questionnaire that was used was a short, Likert scale consisting of questions that pertained to Glenda’s social behaviour. Naturalistic observations took place to determine how Glenda communicates with others and what the antecedents and consequences were for these social exchanges. This sequence analysis was collected one morning at Day Program.

Baseline assessment consisted of partial-interval recording at Puppy Park, day program and home. Thirty minute intervals were chosen at all three settings (Day Program, Home and Puppy Park). These intervals were divided equally into six, five-minute time periods. If, within one of those time periods, Glenda displayed the appropriate behaviour an “X” was indicated on the recording sheet. The percentage of appropriately initiated conversations per interval was then calculated by dividing the number of “X’s” by the total number of time periods (6) for each interval.

The intervention techniques and procedures were chosen based on the results from the functional assessment and baseline data presented in the results section.

**Procedure**

Intervention consisted of the development of social stories to assist Glenda in appropriately initiating conversations. Effective praise was also taught to staff in order for them to deliver this to Glenda when she displayed the appropriate components that were conveyed in her story.

**Social Stories.** Social stories were used with Glenda to teach the friendship skill of initiating a conversation. Two stories were developed with Glenda as the main character. See a sample of one of these stories in Appendix C. Pictures of Glenda and her real life surroundings were incorporated into the narrative. One story was designed for intervention at day program, and the other was for use in the home. Comprehension questions were printed at the bottom of most pages of the story. These questions were used by staff to determine if Glenda understood what was read to her. If clarification was needed, a second reading of the story was provided.

**Effective Praise.** Observations of Glenda showed whether the material within the stories transferred to real-life situations. Additional praise was given when these transfers were seen. Effective praise is one way to let individuals know what they have
done correctly, why they should continue doing it and provides a positive outcome (Dowd & Tierney, 2005). Effective praise was to be given immediately after a desirable behaviour was shown. This allowed Glenda to associate praise with appropriate social exchanges. Feedback was also delivered to offer advice on what types of behaviour would like to be seen from Glenda in the future. In conclusion, social stories and effective praise were both utilized, so as to strengthen Glenda’s appropriate social interactions.
Chapter IV: Results

In this section the results from the assessment procedures will be examined individually and the baseline results will be presented. Based on the findings from the assessment methods, goals and objectives were established which will also be outlined, and ending with an analysis of the intervention results.

Functional Assessment Results

Functional Assessment Interview with behavioural consultant (23/09/08).
Appendix D presents the completed Functional Assessment Interview used in the current study. With regard to medical conditions, Glenda has had two knee replacements along with having osteoporosis. It has been observed that pain appears to worsen her Obsessive Compulsive Disorder symptoms. When these symptoms are present, Glenda stays up all night talking to herself until she becomes hoarse.

Concerning the structure of Glenda’s day, it is felt that her schedule is highly predictable. She attends day program five days a week, Puppy Park on Sundays and consistently has the evening routine of exercises, bath, dinner, TV and bed. Glenda does not seem bothered by crowded places or noise. Day program has a ratio of two clients to one staff, whereas her home has seven clients to two or three staff. Glenda enjoys a 1:1 worker on both Wednesdays and Thursdays at Day program.

When looking for a functionally equivalent behaviour to replace interrupting, it is noted that Glenda is able to have reciprocal social interactions with others. Glenda utilizes a variety of strategies to communicate. These include; vocalizations, signing, pointing, leading, grabbing, moving close, facial expressions, and aggression. Her behavioural consultant identifies that Glenda is capable of following a spoken request, responding to signed instructions and imitating a physical model.

When working with this individual it is important to: avoid exposing her to “cute things”; withhold reinforcement for negative behaviour; and not force Glenda to do something. Activities that Glenda does enjoy were also discussed in the interview as possible reinforcers.

Social behaviour questionnaire with front-line staff (15/09/08). Spence’s (1980) Social Behaviour Questionnaire was adapted for use in the current study. The questionnaire was completed with a front-line staff regarding Glenda’s social behaviour (Appendix E). The question that applies the most to the intervention in question is whether Glenda starts up conversations appropriately. This was answered as “sometimes”. Interestingly, it is felt that Glenda appropriately initiates conversation with staff and does so at an appropriate time. It was also mentioned that Glenda can become verbally aggressive towards staff and agitated when told to wait. This reflects the information gathered on communication through the functional assessment interview. Lastly, the questionnaire revealed that while Glenda had several friends, she only sometimes joined in activities or talks freely with peers.
Sequence (ABC) analysis for interrupting (15-09-08). Appendix F summarizes the naturalistic observations that were made one morning at Day program. Within a period of one hour there were six instances of dialogue from Glenda. During each dialogue two or more individuals were talking (whether it be staff, or staff and clients), when Glenda came over and interrupted. Interrupting was recorded when Glenda began to communicate while others were talking without waiting her turn or contributing to the current topic. This behaviour resulted in different consequences depending on the individual involved. The more desirable response, which only occurred two of the six times, was that she was ignored. When Glenda interrupted the other four times, staff stopped what they were doing and directed their attention to Glenda. This showed that when Glenda interrupts, she gains attention from staff, which is reinforcing this behaviour.

Baseline Assessment Results

Partial-Interval Recording of Appropriately Initiated Conversations. This author completed the data collection using partial-interval recording. See Appendix G for a sample data sheet. These sheets were used to record the percentage of appropriately initiated conversations during a half hour period. These time periods were chosen for day program and home as they were identified as times when Glenda did not initiate very often and were based on availability for Puppy Park. Table 1 outlines the summary statistics obtained during baseline assessment.

Table 1 presents the baseline data in all settings. During Day program, the target behaviour occurred an average of 9.5% of the intervals. After 7 days of data collection a stable trend was identified as the last 3 data points were all 0%. At home, Glenda initiated a conversation on an average of 25.0% of the interval. This data was obtained over 7 days, showing stability as 5 of the last 6 days of collection were 33.3% initiated conversations. There were only two opportunities to record data at Puppy Park, but, the target behaviour was recorded during 100.0% of the intervals each time, showing stability as both data points were identical. These results are represented in Figure 1.

<table>
<thead>
<tr>
<th>Summary Statistics for Baseline Data</th>
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<tbody>
<tr>
<td>Baseline</td>
</tr>
<tr>
<td>Day Program</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Median</td>
</tr>
<tr>
<td>Standard Deviation</td>
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</tbody>
</table>
**Goals and Objectives**

Appropriate conversation initiations (Accelerate): While at Day program Glenda will appropriately initiate a conversation 50% of the intervals.
Objective: Glenda will appropriate initiate a conversation:

1. 15% of the interval
2. 30% of the interval
3. 50% of the interval

   Each objective will be successfully achieved once Glenda has met the criteria for 3 consecutive sessions at which time the next objective will be worked on.

Appropriate conversation initiations (Accelerate): While at Home Glenda will appropriately initiate a conversation 50% of the intervals.
Objective: Glenda will appropriate initiate a conversation:

4. 15% of the interval
5. 30% of the interval
6. 50% of the interval

   Each objective will be successfully achieved once Glenda has met the criteria for 3 consecutive sessions at which time the next objective will be worked on.

**Intervention Results**

Intervention began at day program. The social story was introduced to Glenda with much success. Glenda appeared to be excited about having her own book, especially the pictures that were included of people that she knew. Feedback from other staff explained that Glenda did really well with the components of her social story and that the comprehension questions were answered with accuracy and creativity. When Glenda was asked for ideas on things she can do with her friends, she answered with a wide array of activities.

Figure 1 presents the graph of appropriate initiations of conversations across settings. Appendix H displays available data from all three settings and Appendix I presents a summary of this data. Appendix J includes the same graph with the addition of both trend and median lines. Table 2 highlights the summary statistics obtained from both baseline and intervention.
An automatic increase in appropriately initiated conversations was recorded subsequent to the reading of the social story. Within the first 3 days of intervention at day program all 3 objectives were met, which reached the goal of 50% appropriately initiated conversations. From baseline to intervention, there was an 839% increase in appropriately initiated conversations at the day program, as this behaviour increased from 9.5% to 89.2%. As shown in Figure 1, there is a noticeably accelerating trend in the graph of the data when comparing intervention to baseline. The data collected established a stable trend for the last 3 days of intervention as results reached 100% on 3 consecutive days. A stable trend was also established at day program between day 12 and day 18 of data collection (day 5 of intervention at day program). At this time 80% of the data points fell within a 15% range of the median level. Since stability was shown, intervention was then introduced at home as well.

Figure 1 also shows that from baseline to intervention there was a 256% increase in appropriately initiated conversations at home. These results indicate a marked increase with the mean increasing from 25% during baseline to 88.9% during intervention. The last 4 data points created a stable trend, which can be seen in Figure 1.

Intervention was not implemented at Puppy Park due to an unforeseen circumstance. The 2 data points for baseline that are available help highlight that Glenda had already had the skill of appropriately initiating conversations in her repertoire, and she was just needed some different strategies in order for her to demonstrate this in multiple settings.

**Percentage of Nonoverlapping Data (PND).** In addition to descriptive statistics and visual analysis, the percentage of nonoverlapping data (PND) was used to examine intervention effectiveness. This is one way to explore effect within single case research (Scruggs, Mastropieri, & 1987). PND is calculated by taking the number of data points in the intervention phases that did not overlap the most extreme data point in the baseline phase and dividing it by the total number of data points in the intervention phase. This

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Intervention</th>
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<tbody>
<tr>
<td></td>
<td>Day Program</td>
<td>Home</td>
</tr>
<tr>
<td>Mean</td>
<td>9.5%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Median</td>
<td>0.0%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>16.2%</td>
<td>12.6%</td>
</tr>
</tbody>
</table>
was calculated separately for both the day program and home settings with results of 100% for both settings. It has been suggested that a PND higher than 90% constitute a highly effective intervention. Although there is unknown reliability with PND, there are some strengths to this analysis (Parker, Hagan-Burke, & Vannest, 2007). PND is easy to calculate, it is a component of visual analysis and it can be applied to any single-case research design.

**Treatment Integrity**

Mediator training was used throughout the intervention to ensure treatment integrity. Front-line staff read the social story to Glenda although this author gathered the majority of the data presented in this report. Appendix K includes written instructions of the interventions for mediators. Feedback was given to ensure clarification. A presentation of the use of social stories was successful in educating staff about the technique. The handout on effective praise was also reported as beneficial by front-line staff.
**Figure 1.** Partial-interval recording of appropriate initiation of conversations across settings
Chapter V: Discussion

As shown in the results chapter, social skills training involving social stories, modelling and prompting contributed to significant improvements in the behaviour of focus. These results expand and validate the recommendation made by Scattone et al. to use social stories with other populations in order to determine if the positive effects extend across multiple populations (2006).

In this section, any changes that were made to the program throughout the intervention will be identified and explored, analysing their effect on the overall results. Plans for maintaining and generalizing the skills are also discussed. This section also presents some strengths and limitations, as well as challenges of this program and its design based on a multilevel systems perspective. This chapter ends with a look at the contributions this study has made to the field of behavioural psychology, leaving the reader with some recommendations for future research.

Program Changes

The behavioural rehearsals (role-plays) were not needed as an additional intervention. However, staff at the day program had difficulty translating some of the sentences of the social story into sign language. The front-line staff had extensive discussions with each other as well as this author to determine ways that would best explain the content of the social stories to Glenda. The conclusion was to utilize modelling, while implementing the social stories as a means to assist Glenda in understanding the content. Thus, staff and clients acted out scenarios while Glenda observed. Although Glenda wasn’t actively involved in this demonstration, it seemed to aid her understanding. This addition was only used in the first reading of the social story at day program, as from then on it wasn’t deemed necessary, since Glenda showed adequate understanding.

Prompting was also used, in addition to the social stories, modelling and effective praise. Staff would use verbal prompts, as well as gestural prompts after the story was read. Examples of these prompts included recommending a friend with whom Glenda could talk to, or handing Glenda a deck of cards (or equivalent), while suggesting someone she could ask to play with her.

Lastly, there should be mention of the final change that was made to the social story when data recorded of appropriate initiation of conversations at day program dropped to a frequency of 50%. On day 22, Glenda was read the social story and had identified who it was that she wanted to approach. She discussed this and then went to look for this individual. As she asked this individual if she wanted to play a game, a staff member told Glenda that this individual was busy and that she would have to choose someone else. Glenda was noticeably disappointed and chose not to initiate any more that day. This drop in appropriate initiations can be seen in Appendix D.
As a means to minimize this type of disappointment from happening in the future, an additional page was added to Glenda’s day program social story. This page explained that there were many people with whom Glenda could talk. The page also included pictures of six different individuals that also attended day program. In addition, there was a small picture of Glenda on this page attached with Velcro. Glenda was able to move the picture of herself and place it on any other piece of Velcro that corresponded with one of the six individuals. Data from day 22 forward show an increasing trend, suggesting that this addition was beneficial.

**Maintenance and Generalization**

Since social interactions can happen anywhere, another story was developed for Glenda. As mentioned previously Glenda attended a monthly dance where there are lots of opportunities for interaction. This author was fortunate enough to attend this dance on October 10, 2008. This evening was an especially social event as it was a Halloween theme and the majority of the people came in costume. Naturalistic, informal, observations of Glenda showed that she interacted well with a select few, although does not interact with everyone. Although there is nothing inappropriate about having a few close friends, Glenda has been described by staff as one who seeks out vulnerable individuals, particularly those in wheelchairs. A social story was made for Glenda regarding socializing at dances and will be left as a way to generalize and maintain the target behaviour. The existing social stories were also left with staff to read at their discretion or upon Glenda’s request.

**Strengths and Limitations**

The results described have demonstrated that social stories may be beneficial not only with the typical population of children with Autism, but also with older individuals with intellectual disabilities. The social story developed was individualized for Glenda to fit the areas that would benefit from an improvement. The multiple baseline across settings design provided evidence to show that gains could be made across locations. Although there are limited ways to analyze results from a single-case design, the use of Percentage of Nonoverlapping Data (PND) added to the analysis and highlighted the effectiveness of this intervention.

One limitation of the current study is that it was only a single-case design. Even though the multiple baseline shows generalization across settings, the same may not be true across participants.

The time of data collection should also be looked at with caution. The percentage of appropriately initiated conversations was only recorded for the half an hour directly after presentation of the social story. Even though the immediate effects were promising, there is only anecdotal evidence to support the conclusion that one reading of a social story lead to increased interactions throughout the day. In the future, data could be collected at varying times throughout the day to measure for any long-term effects.
In addition, the development of a visual schedule for Glenda which was introduced at Day Program during intervention may have acted as a confounding variable. This schedule was to be created each morning in order for Glenda to have the opportunity to choose what she wanted to do. This supplemental aid may have contributed on its own to Glenda’s gains, although follow-through with this schedule was minimal. While the addition of the visual schedule could limit the strength of the conclusions drawn, the inconsistencies in its delivery appear to have contributed very little to the positive impact the social stories had on Glenda’s appropriately initiated conversations.

**Challenges within a Multilevel Perspective**

Challenges will be looked at individually within the client level, the program level, the organizational level, as well as the societal level.

**Client level.** Communication barriers were the biggest challenge at the client level. This author had limited previous knowledge of American Sign Language (ASL) which was one of the main methods Glenda used to communicate. As a result, exchanges in communication between Glenda and this author were usually done through an interpreter, which can create challenges in itself. In addition to the communication barriers, the client had fluctuating intensities of her Obsessive Compulsive Disorder symptoms. An example of when these symptoms challenged implementation, was when Glenda was given the natural consequence of not being able to go to day program after she had refused to wear proper footwear and insisted on wearing her slippers. Intervention could not be implemented as Glenda did not come to day program.

**Program level.** A very common challenge that was evident at the program level was staff consistency with implementing the intervention. The social story was not initially being read to Glenda in a consistent manner. This author’s presence began to act as a prompt for staff to read the story. Due to this observation, it was requested that the guidelines to the intervention be added to the “day book” which lists all the responsibilities and tasks that staff need to complete throughout the day. Each item completed on the list in the day book required a staff signature to create some ownership and responsibility for the tasks.

Along with consistency, there were varying degrees of staff knowledge regarding behavioural techniques. Prior to intervention, many staff were unaware of the correct use and purpose of social stories. As a result, an effort was made to train all individual mediators by providing a presentation to agency staff. Lastly, at the program level, communication barriers continued to be a challenge. Since the agency Glenda resides in is a deaf and hard of hearing community, many of the staff that work within the agency are deaf as well.

**Organizational level.** As well, limited knowledge and understanding of behavioural techniques can be challenging at the organizational level. It is important to address any misunderstandings early on to ensure that intervention runs as smoothly as
possible. These misunderstandings should be explained to supervisors and team leaders in the hope that the appropriate information can be delivered to front-line staff.

Societal Level. When addressing issues at the societal level, the chosen intervention needs to be examined for appropriateness. It may not be looked at as socially acceptable, in this case, for a 46-year-old woman to be carrying around an illustrated book. This programming can be done more discreetly by reading the story prior to an event in the community (such as the dance). Lastly, at the societal level, there is the ongoing challenge that deaf and hard of hearing individuals face around stereotypes. In this particular agency, open discussion about this topic was made so individuals could express any thoughts or feelings about this matter.

Contributions to the Field of Behavioural Psychology

This research adds to the field of behavioural psychology as it introduces the feasibility and potential benefits of implementing social stories with an alternative population than who they were designed to help. Along with Autism, social stories seem to be helpful for those with intellectual disabilities, Obsessive Compulsive Disorder, and within the deaf and hard of hearing community. It is hoped that this intervention will be further explored and adapted to evaluate its utility for multiple populations.

Recommendations for Future Research

Some recommendations for future work with Glenda, or for anyone creating a social story intervention, are around strengthening mediator adherence to the intervention protocol. One suggestion to address mediator adherence would be a documentation system for the mediators to fill out once the story has been read, where they can note any observations they have seen. Also, when more than one strategy is used in an intervention, it is difficult to determine which component was most effective, or if it was the combination of techniques that allowed for the treatment gains. In the future, one could do a multiple baseline across treatment components. Isolating the intervention variables would help determine each one’s contribution to the overall results. In addition, by doing this, you could manipulate different combinations to develop the most effective, least intrusive treatment.

In the current study, it is unclear just how often effective praise was used. Developing a charting system which recorded each time an effective praise statement was used would help determine its usefulness. An additional treatment that can be tried along with social stories is video modelling. Like social stories, video modelling is an antecedent intervention, and a form of priming. One could even go beyond this by creating a social story within a video.

Lastly, even though focusing on the positive is the ideal, it would have been useful to have recorded an inappropriate behaviour (i.e. interrupting) along with the appropriate behaviour to illustrate that the appropriate behaviour increased while the inappropriate behaviour decreased. Overall, Glenda made significant improvement in
understanding her role in an interaction which was shown through her answers to the comprehension questions. One suggestion for the future is that since Glenda has mastered this story, she should now be ready to move on to another skill. Staff have been provided with the training on social stories which has given them the ability to develop new stories, and it is hoped that they will be able to do so. To facilitate this, these suggestions have been given to Glenda’s behavioural consultant and follow-up is planned between this consultant and this author. The two goals for follow-up are to ensure that mediators are implementing the social story, and also that new stories are being created. The behavioural consultant working with this agency has agreed to provide reinforcement if these goals are being met and also to provide any necessary support that is needed in order for these goals to be achieved. This author will follow-up with the consultant via email.

Word Count Literature Review: 3438
Word Count Overall Thesis: 8993
References


Dear Mrs W

I am a student in the Bachelor’s Degree in Behavioural Psychology program at St. Lawrence College. This four-year degree program is based on a behavioural framework, which has been demonstrated to be effective in developing positive skills with a wide range of individuals. Currently, I am completing an Applied Thesis that involves an intervention that I will summarize in a written report.

My intervention, social skills training, will include assessment, data collection, and intervention. Social skills training will consist of a story about appropriate ways to initiate a conversation. Praise will be delivered when it is noticed that this behaviour is displayed. If it is felt that your daughter is not benefiting from this intervention, role-plays will be introduced to allow practice of the skill. This training will be delivered twice a week at home and Day Program and Sundays at Puppy Park. It is anticipated to begin the week of September 29 until December 5. This client-focused intervention will be developed in collaboration with your daughter, the agency’s staff, and team members.

The benefits of participating in this project are that friendship skills will be further developed. There will also be more opportunities to receive praise. Through the use of stories, role-playing and praise, it is hoped that your daughter will be more confident in initiating conversations, leading to increased friendships. The risks of participating in this project are minimal although it can not be said with certainty that there will be a change in behaviour.

This project has been approved by the agency and by the Research Ethics Board at St. Lawrence College. The intervention will be developed under the supervision of Dr. Gary Bernfeld, my supervisor from St. Lawrence College and in collaboration with Shauntel King, your daughter’s behavioural consultant.

I would like your permission to implement the intervention/procedures described above. All information collected will be kept strictly confidential. The information will be coded and stored in a locked cabinet. Upon request, we will gladly share a copy of a brief report of the intervention. Participation in this project is voluntary and your daughter may withdraw at anytime without incurring undue biases to current or future treatment. She will also be asked if she wishes to participate in the project (assent), she may refuse to participate.

If you agree for your daughter to participate in the project, please complete the form at the bottom of this letter and return it to me as soon as possible. A copy of this signed document will be given to you for your own records.

I sincerely appreciate your cooperation. If you would like to receive more information about the project or have additional questions or concerns, please contact my College Supervisor, Dr. Gary Bernfeld, Behavioural Psychology Program Coordinator, 1-613-544-5532 ext. 1676.
Effective Praise

Effective praise is used to ensure that an individual knows why he/she is receiving praise, and why they should continue it. Effective praise leads to higher self-esteem, and if used frequently, greater compliance with teaching or treatment. Often we notice the negative behaviours of others. By using effective praise, we point out the positive behaviours in hopes to increase the likelihood of these positive behaviours being displayed in the future.

When should we use effective praise?
- When an individual already does well with a behaviour, and you want them to continue
- When you see an improvement in behaviours, even small ones
- When positive attempts are made at new skills being taught

Components of effective praise:
- **Contingent:** effective praise is given only after the desired behaviour has been seen
- **Specific:** The behaviour must be mentioned (i.e. talking with friends)
- **Immediate:** Effective praise should be delivered soon after the behaviour is displayed so that the association between the behaviour and praise can be made

There are five steps in delivering effective praise:

1. Give brief praise – short, enthusiastic words or expressions i.e. “great job”
2. Describe the appropriate behaviour – be specific and label the skill used i.e. “asking a friend to play a game”
3. Give reason for behaviour – allows individual to connect action to outcome i.e. “when you ask others to play a game, they are more likely to play”
4. Ask for acknowledgment – to ensure comprehension as to why they should use the skill
5. End on a positive
Examples:

<table>
<thead>
<tr>
<th>General Praise</th>
<th>Effective Praise</th>
</tr>
</thead>
<tbody>
<tr>
<td>“All right”!</td>
<td>“All right! Jimmy, you did a great job of following instructions. When you follow</td>
</tr>
<tr>
<td></td>
<td>instructions to complete chores like this, it helps keep the kitchen in order. Do</td>
</tr>
<tr>
<td></td>
<td>you understand why it is good for you to follow instructions when something needs</td>
</tr>
<tr>
<td></td>
<td>to be done? Thanks for your help”.</td>
</tr>
<tr>
<td>“I am pleased”</td>
<td>“Célia, I wanted to let you know that I was very pleased with your participation</td>
</tr>
<tr>
<td></td>
<td>in class today. You raised your hand almost every time I asked a question. When</td>
</tr>
<tr>
<td></td>
<td>you participate in class like that, you help yourself learn. Does that make sense?</td>
</tr>
<tr>
<td></td>
<td>Great job”!</td>
</tr>
<tr>
<td>“Excellent”</td>
<td>“You did an excellent job of saying “yes” when I instructed you to take out the</td>
</tr>
<tr>
<td></td>
<td>garbage. This lets me know you plan on completing the task. Is that right? Thank-</td>
</tr>
<tr>
<td></td>
<td>you”.</td>
</tr>
<tr>
<td>“Good job”!</td>
<td>(please develop an effective praise statement that would be suitable to say to</td>
</tr>
<tr>
<td></td>
<td>Glenda when she initiates a conversation appropriately)</td>
</tr>
</tbody>
</table>

(Dowd & Tierney, 2005; Marchant & Young, 2002)
Appendix C: Sample Social Story

Talking with Friends

Glenda is talking with her friend at day program\(^2\)
(Comprehension question: Who is Glenda talking with?)

Staff are happy when they see Glenda talking

Sometimes two people are talking and Glenda wants to talk too

Glenda will try to wait until they are finished before she starts to talk

When Glenda waits her turn, she is being patient
(Comprehension question: When two people are talking what should Glenda do?)

There are lots of things Glenda can talk about with her friends

Glenda can ask a friend to play a game, or look at a magazine
(Comprehension question: What can Glenda do with her friends?)

People will have fun with Glenda*\(^*\)

\(^2\) The wording was slightly changed for the story delivered at home although the content was the same.
\(^*\) For the social story presented in this intervention, each statement (or every two statements) were delivered on a separate page with a picture of Glenda and the real-life corresponding situation.
Appendix D: Functional Assessment Interview with Behavioural Consultant (23-09-08)

What medical or physical conditions does the person experience that may affect her behaviour?
- refuses to wear menstrual pads; however, infrequent periods due to long-term Depo Provera use
- two knee replacements-osteoporosis-OCD worsens with pain

Describe the sleep patterns of the individual, and affect on behaviour
- does not sleep when OCD symptoms at worst - stays up all night talking to self until hoarse

Describe the eating routines and diet of the person and affect on behaviour
- soft foods - avoid bread because of previous choking incident

Briefly list below Glenda’s typical daily schedule of activities
6:00am awake/meds
7:00am breakfast
9:00am Arrives at Day Program *first Friday of Month
3:00pm leaves Day Program Dances
4:00pm exercises Sundays Puppy Park
5:00pm bath
6:00pm dinner
7:00pm T.V
8:00pm meds/bed

To what extent are the above activities predictable?
- highly predictable

How many other persons are typically around the individual? Is she bothered by crowds or noise? No
Day Program - Approx 15
Home - Approx 6

What is the typical staffing pattern?
1:1 twice a week at Day Program, otherwise 2:1
At home 7:3 or 7:2

What socially appropriate behaviours or skills can the person already perform?
  Turn-take

Indicate the behaviours the person uses to achieve communication outcomes
  - Vocalization, signing, pointing, leading, grabs/reaches, moves to you, facial expression, and aggression

Does Glenda follow spoken requests or instructions?
Yes

Does Glenda respond to signed or gestural requests or instructions?
Yes

Is Glenda able to imitate if you provide physical models for various tasks or activities?
Yes - some physical limitations

How does Glenda typically communicate yes or no when asked if she wants something?
Signing, speaking, nodding

What things can you do to improve the likelihood that a teaching session will go well?
  - avoid cute things
  - withhold reinforcement for negative behaviour

Reinforcers:
Food items: almost all food except salad
Toys and object: not appropriate
Activities at home: 1:1 time, walks, magazines, crafts, playdough
Activities/outing in the community: Puppy Park, dances, dinner, coffee
Appendix E: Social Behaviour Questionnaire with Front-Line Staff (15-09-08)

<table>
<thead>
<tr>
<th>Situation</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Has friends amongst peers</td>
<td>None</td>
<td>No close friends</td>
<td>One close friend</td>
<td>Several friends at least one close</td>
<td>Many friends at least two good ones</td>
</tr>
<tr>
<td>2. talks freely with peers</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Usually</td>
<td>Always</td>
</tr>
<tr>
<td>3. joins in activities with peers</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
</tr>
<tr>
<td>4. is bullied by others</td>
<td>Very often</td>
<td>Often</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
<tr>
<td>5. will volunteer in group situations</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
</tr>
<tr>
<td>6. avoids peer interaction</td>
<td>Always</td>
<td>Often</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
<tr>
<td>7. becomes aggressive or loses temper when teased by peers</td>
<td>Always</td>
<td>Often</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
<tr>
<td>8. will start up a conversation with peers appropriately</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
</tr>
<tr>
<td>Staff relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. initiates conversations with staff at appropriate time</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
</tr>
<tr>
<td>10. approaches staff appropriately with requests or questions</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
</tr>
<tr>
<td>11. talks freely to members of staff about general topics</td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very often</td>
</tr>
<tr>
<td>12. is verbally aggressive towards staff</td>
<td>Always</td>
<td>Often</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
<tr>
<td>13. becomes agitated when told to wait from staff</td>
<td>Always</td>
<td>Usually</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
<tr>
<td>14. refuses staff requests and instructions</td>
<td>Always</td>
<td>Often</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
<tr>
<td>15. argues inappropriately with staff if prevented from doing something she wants</td>
<td>Always</td>
<td>Usually</td>
<td>Sometimes</td>
<td>Rarely</td>
<td>Never</td>
</tr>
</tbody>
</table>

Please state any other social situations in which GW has difficulty:


Appendix F: Sequence (ABC) Analysis of Interrupting (15-09-08)

<table>
<thead>
<tr>
<th>Time</th>
<th>Antecedent</th>
<th>Behaviour</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:35am</td>
<td>Client and Staff talking</td>
<td>GW came over and interrupted</td>
<td>Ignored by those already engaged in conversation</td>
</tr>
<tr>
<td>9:42am</td>
<td>Two staff talking</td>
<td>GW patted one staff on the shoulder</td>
<td>One staff left and attention was directed toward GW</td>
</tr>
<tr>
<td>9:45am</td>
<td>Two staff talking</td>
<td>GW was walking towards them talking</td>
<td>Staff stopped what they were talking about and focused on GW</td>
</tr>
<tr>
<td>10:01am</td>
<td>Staff in staff room talking</td>
<td>GW continuously knocked on window</td>
<td>One staff stopped what they were talking about, opened the door and came out to talk to her</td>
</tr>
<tr>
<td>10:40am</td>
<td>Staff talking to other client</td>
<td>Patted staff on shoulder</td>
<td>Staff directed attention to her</td>
</tr>
<tr>
<td>10:50am</td>
<td>Two staff were talking</td>
<td>Interrupted</td>
<td>Ignored</td>
</tr>
</tbody>
</table>
Appendix G: Sample Data Sheet for Partial-Interval Recording

Partial-Interval Recording Form

Dates----------------------- Location:--------------------------------------------

Target Behaviour: (Defined in observable, measurable and specific terms):

Any spontaneous or self-initiated communication directed toward another individual including helping or sharing. This will not be said to occur if she joins in on two or more other individuals who are already engaged in conversation.

<table>
<thead>
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</tr>
</tbody>
</table>

*where “X” indicates the behaviour did occur within that time period
“-“ indicates that the behaviour did not occur
n/a shows that there were no opportunity to interact ex/ having a bath, in the washroom

comments:

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>
Appendix H: Partial-Interval Recording of Appropriate Initiations

Partial-Interval Recording Form

Dates—Sept 15-Dec 1------------ Location:-Day Program-----------------------------

Target Behaviour: (Defined in observable, measurable and specific terms):

Any spontaneous or self-initiated communication directed toward another individual including helping or sharing. This will not be said to occur if she joins in on two or more other individuals who are already engaged in conversation.

<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td>Baseline</td>
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<td></td>
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<td></td>
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<tr>
<td>September 15</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>September 16</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>September 19</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>September 22</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>September 26</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
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<td>X</td>
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<td>X</td>
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</tr>
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<td>October 10</td>
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<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>October 17</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>October 20</td>
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<td>X</td>
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</tr>
<tr>
<td>October 27</td>
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<td>n/a</td>
<td>X</td>
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<td>November 3</td>
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<tr>
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<tr>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>November 18</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>November 24</td>
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<td>X</td>
<td>X</td>
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<td>X</td>
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</tr>
<tr>
<td>December 1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

*where “X” indicates the behaviour did occur within that time period
“-“ indicates that the behaviour did not occur
n/a shows that there were no opportunity to interact ex/ having a bath, in the washroom

comments:

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 3</td>
<td>10:21</td>
<td>Found yarn while putting away a game – this is a part of her obsessive rituals so she was distracted</td>
</tr>
</tbody>
</table>
**Partial-Interval Recording Form**

Dates—Sept 15-Dec 1 Location:-----Home

**Target Behaviour:** (Defined in observable, measurable and specific terms):

*Any spontaneous or self-initiated communication directed toward another individual including helping or sharing. This will not be said to occur if she joins in on two or more other individuals who are already engaged in conversation.*

<table>
<thead>
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<td>September 15</td>
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<td>September 22</td>
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<td>September 25</td>
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<tr>
<td>October 7</td>
<td>X</td>
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<td>October 8</td>
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<td>X</td>
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<td>X</td>
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<td>October 20</td>
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</tr>
<tr>
<td>Intervention</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>October 27</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>November 3</td>
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<td>X</td>
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<td>November 10</td>
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<tr>
<td>November 17</td>
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<td>November 24</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>December 1</td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

*where “X” indicates the behaviour did occur within that time period
- indicates the behaviour did not occur
n/a shows that there were no opportunity to interact ex/ having a bath, in the washroom

**comments:**

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 15</td>
<td>4:35</td>
<td>GW was having a bath</td>
</tr>
<tr>
<td>October 7</td>
<td>4:15</td>
<td>Asked me for her book (knew me from day program) I signed “tomorrow” and she signed “thank-you”</td>
</tr>
</tbody>
</table>
Partial-Interval Recording Form

Dates---Sept 21 and 28--------------------- Location:---Puppy Park---------------------------

Target Behaviour: (Defined in observable, measurable and specific terms):

Any spontaneous or self-initiated communication directed toward another individual including helping or sharing. This will not be said to occur if she joins in on two or more other individuals who are already engaged in conversation.

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>September 21</td>
<td>X</td>
<td>X</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>September 28</td>
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<td>X</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

*where “X” indicates the behaviour did occur within that time period
“-“ indicates that the behaviour did not occur
n/a shows that there were no opportunity to interact ex/ having a bath, in the washroom

comments:

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Comment</th>
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</thead>
<tbody>
<tr>
<td>September 21</td>
<td>6:44</td>
<td>Favourite dog didn’t come—requested to go early--only there for fifteen minutes</td>
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</table>
### Appendix I: Summary of Appropriate Initiation of Conversation across Settings for Baseline and Intervention

<table>
<thead>
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<th>Date</th>
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<td>October 3</td>
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<td>83.3%</td>
<td></td>
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<td>88.9%</td>
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</tr>
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<td>33.3%</td>
<td>100%</td>
<td>n/a</td>
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<tr>
<td>Median:</td>
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<td>83.3%</td>
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<tr>
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<td>88.9%</td>
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<tr>
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<tr>
<td>Standard Dev.</td>
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<td>12.6</td>
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</tbody>
</table>


Appendix J: Trend and Median Lines for Appropriate Initiation of Conversation

Percentage of Glenda’s Appropriate Initiation of Conversation across Settings

Baseline  Intervention  Day Program

Percentage of Appropriate Initiation of Conversation

Home

Puppy Park

Days of Data Collection

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
Appendix K: Intervention Instructions For Intervention Procedures

CLIENT NAME: Glenda  
PROCEDURE: Social Skills Training  
MEDIATORS: Staff  
LOCATION: Home and Day Program

TARGET BEHAVIOUR(S) (operational definitions):
1. Appropriately Initiating a Conversation (Accelerate): Initiating a conversation will be defined as any spontaneous or self-initiated communication directed toward another individual including helping or sharing. This will not be said to occur if she joins in on two or more other individuals who are already engaged in conversation.

Materials:
- Social Story
- Recording sheet
- Pen/pencil
- Clock – to record time of target behaviour

Steps:
1. Social Stories  
   Staff will read to Glenda twice a week. These times are 4:00pm Monday and Wednesday at home and 9:30am at Day program on Tuesday and Friday’s. There will be comprehension questions at the bottom of each page. Staff are asked to check Glenda’s understanding as they read through the story. A second reading may be required. Once the story is read, observations will be completed using the recording forms provided.

2. Effective Praise  
   Effective praise is a way to let individuals know exactly what they did correctly, giving them reason to continue this positive behaviour. This praise must be sincere and ensure that there is understanding. Five steps are included in giving effective praise. It should begin with brief praise, describe appropriate behaviour, give a rationale, ask for acknowledgement, and end with a positive (Dowd & Tierney, 2005). Effective praise will be delivered as soon as it is seen that Glenda has displayed an appropriate behaviour. This will allow Glenda to associate praise with appropriate social interactions. Feedback can also be delivered within the praise to offer advice on what types of behaviour would like to be seen from Glenda in the future. All behaviour that is not appropriate, such as interrupting, should either be ignored, or Glenda should be reminded of the things that were talked about in her story.