Using Self-Monitoring and Social Stories to Increase Appropriate Transitions in a 7-year-Old Boy with Autism

by

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Abstract

There is little research when it comes to how children with autism struggle with transitions and how social stories help increase the child with autism’s appropriate transitions. Not only is there minimal research on this topic but also there is minimal research on how self-monitoring can help reduce tantrums and other problem behaviours. This AB design study was an attempt to bridge the gap of information and show how social stories and self-monitoring can teach a 7-year-old with autism, how to appropriately transition from recess to free time or a preferred activity to class time. These are times in which the problem behaviour (tantrums) was displayed the most. With the addition of reinforcement alongside the use of social stories and self-monitoring it was found that these methods were successful in increasing the child’s appropriate transitions. This intervention was also found effective in terms of percentage of data points exceeding the median in reducing the tantruming behaviours being displayed during the targeted transitions.
Acknowledgments

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Chapter 1: Introduction

Sterling-Turner and Jordan (2007) state that transitions occur in all environments, some transitions occur naturally such as going from work to come and other transitions may be manufactured like a child would encounter during the school day. Twenty-five percent of the school day for a child in preschool or elementary school consists of transitioning between activities. Due to the amount of time the children spend transitioning between activities, smooth transitions are essential for a school day to be productive (Schmit, Alper, Raschke, & Rydak, 2000). There is significant research on the transition difficulties children with autism experience as well as how self-monitoring and social stories help reduce problem behaviours but little research about how these programs help the transition difficulties. The American Psychiatric Association (2000) states that self-monitoring allows children to take responsibility for their actions and track their behaviours. Soarses, Vannest & Harrison (2009) have found that teachers prefer using a self-monitoring checklist because it is an easier intervention to implement. This technique has been shown to help reduce tantrums, aggressive behaviour, destructiveness, and noncompliance (Soarses et al., 2009). Karkhaneh (2010) state that social stories have been used since the 1990’s to positively affect children’s social interactions. In addition, social stories have been shown to be effective in teaching children with autism how to interact and behave appropriately in different settings (Karkhaneh, 2010). Barry and Burlew (2004) believe that there has been an increased use of social stories for teaching appropriate behaviour and social interactions to children with autism due to this interventions success. Given the success of these two treatments in reducing problem behaviours this study will attempt to show the successfulness of self-monitoring and social stories to reduce transition difficulties.
Chapter II: Literature Review

Autism and Problem Behaviours

Ouellette-Kuntz (2012) states that recent estimates of the prevalence of autism in Canada is approximately 1 in 94. Children with autism are most regularly recognized as children who struggle to understand others, recall information, verbally express themselves, and having deficits in social aspects (Hodgdon, 1995). Horner, Carr, Strain, Todd and Reid (2002) state that research has indicated that children with autism are more likely to develop problem behaviours than children without autism. Problem behaviours can affect the child’s social, educational and community opportunities in a negative way (Horner et al., 2002). Some of these problem behaviours can include: psychical aggression, self-injury, property destruction, pica, stereotypy, defiance and tantrums; these behaviours negatively affect the child’s education and social development because of the interferences they cause throughout the day (Horner et al., 2002). Horner et al. (2002) also mention that without intervention these problem behaviours are likely to worsen. Furthermore, Myers and Johnson (2007) state that without behavioural treatments certain deficits such as independent living, employment and social relationships can have negative outcomes that extend into adolescent and adulthood. With this in mind, interventions are needed to decrease problem behaviours.

Transitions for Children with Autism

Among many of the problem behaviours that accompany autism, transitions from one activity to the next can make progress during the school day difficult. Sterling-Turner and Jordan (2007) state that children with autism tend to have difficulties moving from one activity to another. These transitions can cause children with autism to display aggression or tantruming behaviours (Sterling-Turner & Jordan, 2007). In addition, Stoner, Angell, House, and Bock (2007) believe that these behaviours tend to occur because transitions can cause confusion and anxiety for children with autism. They explain that when introducing a transition, the individual requesting the transition must pre plan and warn the child that a transition is about to occur (Stoner et al., 2007). McCoy, Mathur, and Czok (2010) demonstrated that transitioning can be difficult in a resource classroom for children with disabilities. They found that within the first five minutes the children entered the classroom and were asked to switch activities, the children began to struggle and display unwanted behaviours (McCoy et al., 2010). These problem behaviours can occur when the environment is unpredictable for the child, causing them confusion and feeling unprepared for what is coming next (Flannery & Horner, 1994). Flannery and Horner (1994) also believe that children with autism have a difficult time recognizing cues in the environment that indicate a transition is about to occur. Flannery and Horner (1994) showed through a study conducted with two people that have the diagnosis of autism that predictability in schedules help reduce problem behaviour. When the two individuals with autism were warned about the environment changing they showed less problem behaviour then when the environment changed without warning. This being said, interventions that encourage successful transitions for children with autism are warranted.

Importance of Transitioning

To use the time the child has in the classroom effectively, techniques that encourage appropriate transitions are needed for the child to benefit from school. Sterling-Turner and
Jordan (2007) state that some behaviours such as noncompliance, aggression, and tantrums can occur during transition times for a child with autism. Sterling-Turner and Jordan (2007) also mention that these behaviours put staff and students at risk and propose safety concerns for the individual displaying the behaviour. In some cases these behaviours can become so extreme that children may need to be removed from regular classrooms to be placed in more restrictive educational environments (Sterling-Turner & Jordan, 2007). According to Sterling-Turner and Jordan (2007) smooth transitions must be occurring for a classroom to be correctly managed so the children gain the most from the experience. Having transition difficulties cannot only affect the child’s education, but also disrupts the child from gaining independence (Sterling-Turner & Jordan, 2007). These behaviours can cause the child to experience isolation from peers, have difficulty developing social relationships, and difficulty interacting in educational settings (Horner et al., 2002). Teaching the child to appropriately transition will help decrease some of the problem behaviours occurring throughout the school day. Having the child transition smoothly between activities is not the only goal in mind when discussing transitioning; having the child transition into a regular classroom in order to help promote independence and decrease feelings of isolation is the overall goal. In order to see an improvement in transitions for children with autism, the skill must be taught.

Social Stories

Social stories are one method that has proven to be successful when teaching new skills to children with autism. Janzen (2003) believes that people with autism frequently perform better when they can use their memory skills and visual cues to help retain the information for a longer period of time. Thiemann and Goldstein (2001) believe that interventions should use these skills and strengths that typically occur in children with autism to help facilitate success in areas of weaknesses. Most children with autism are strong visual learners and often struggle when it comes to verbal commands, and therefore relying on auditory teaching methods have proven to not be successful for children with autism (Dettmer, Simpson, Myles, & Ganz, 2000). Scheinder and Goldstien (2010) found that the use of visual cues (e.g., pictures, prompts, visual schedules, checklists and video modeling) have helped children with autism learn new concepts. Visual cues such as written prompts and pictures are successful ways of teaching children with autism new social behaviours (Thiemann & Goldstein, 2001). Social stories are one way of using visual cues, along with using a story to prompt a social behaviour. According to Gray (1995) social stories are designed to help learn a specific social behaviour and how to appropriately behave in a given setting. Social stories can help explain a situation, skill, or a specific concept that the person is struggling with; this is done through explaining the social cues of the situation and typical responses that would occur in this setting (Gray, 1995). Some key components of a social story include: a description of the environment, appropriate responses that occur during the situation, common responses to the cues of the environment, a description of feelings that one might experience in the setting, and common behaviours that can happen in that setting (Barry & Burlew, 2004).

Barry and Burlew (2004) state that for children with mild to severe autism using social stories is an effective method for teaching appropriate play. They showed the effectiveness of social stories through an ABCD multiple baseline design across two participants. Both participants were in a self-contained classroom and the social stories improved their ability to
make independent choices and to play appropriately during free time. The behaviour being decreased was their self-stimulatory behaviours that both participants displayed during playtime. The study used four phases, the first phase was the baseline phase, the second phase was an instructional phase led by the teacher focusing on choice making and appropriate play, the third phase was a instructional phase focusing on playing with others and the last phase was the phase in which the social story was still available but all access to reinforcement was discontinued. Barry and Burlew (2004) also showed that social stories could then be generalized to teach other important skills as well. Scheinder and Goldstien (2010) used social stories and visual cues to increase social interactions in three children with autism ranging from kindergarten to grade five. Scheinder and Goldstien (2010) used a social skills rating system to assess the social skills of each child before and after the social stories were implemented. The author of the social stories would review the social stories with each child and ask the child specific questions about the social stories e.g. “what will you do when the bell rings” to confirm the child understood the social story. The authors would tell the child if the response was correct and if the response was incorrect the author would correct the response. Two of the three children in the study showed a significant increase in positive social interactions. The study also showed that social stories were a beneficial technique in improving the on-task behaviours in the classroom but due to the variability of the behaviours being targeted the use of social stories to promote new social behaviours in general is moderately effective. The children that participated in this study also experienced generalization to other social behaviours that were not targeted during the study.

Another study by Hutchins and Prelock (2013) used social stories and comic strips to teach different social behaviours to 17 children with autism between the ages of four and 12 years old. The children were split into two groups, a intervention group and a control group and used pre-post test measures to help show effectiveness. The data from this study showed that 13 of the 17 (76.5%) children showed an increase in their target social behaviours and maintenance of these improved behaviours were revealed. A study by Scattone, Tingstrom, and Wilczynski (2006) tested social stories with three boys between the ages eight and 13 who all tended to not respond to peers when appropriate or give inappropriate answers. The teacher reviewed the social story once a day for all five days of the week with the boys right before free time. It was found that the first participant did not have any change after the introduction of the social story, the second participant showed the greatest change in his appropriate interactions. Participant two’s appropriate interactions increased by 32% after intervention. The last participant showed an average increase of 15% from baseline to intervention. The results of this study showed that the intervention was rated to be fairly effective to highly effective according to the percentage of non-overlapping data for two of the three boys. Unfortunately the first participant showed evidence of an unreliable treatment because the PND was 10%, which is the indicator of unreliable treatment (Scruggs & Mastropieri, 1998). The results may have been altered for the first participant because of antisocial behaviour from other students and the researcher had little control over the other student’s social interactions. Lastly, a systematic review of literature was by Karkhaneh et al. (2010) that studied randomized controlled trials (RCT) or controlled clinical trails that evaluated the effectiveness of social stories for individuals with autism. The results showed that five of the six trials studied were statistically significant when evaluating the use of social stories as an effective technique to teach children with autism new social behaviours. One of the five studies was conducted by Andrews (2004), which studied the effectiveness of social
stories in comparison to the use of stories without social content to teach game playing skills and social skills comprehension to children with autism. The Andrews (2004) study used an RCT with 20 children from ages eight to 12 years old who were diagnosed with autism and had a first grade reading level or higher. This study found that social stories to teach game playing skills and social skills comprehension was the most adequate method of teaching children with autism.

Social stories are used extensively in the context of teaching social skills, but they are also known to help decrease problematic behaviour and increase independence. Toplis and Hadwin (2006) proved that social stories could help increase appropriate responses and increase children’s independence. In the study there were five participants averaging the age of seven years whom all experienced troubles during lunch hour such as a not following the classroom routine unless escorted by an adult or peer from the class. In an ABAB design, during the intervention phases the children were given the social story to read prior to starting lunch and could access the stories anytime during the lunch hour. This study showed that the social story was an effective intervention for three of the five children and helped increase the independence of the children.

Therefore, when teaching appropriate transitions to children with autism, social stories are potentially effective and an appropriate intervention because not only do they affect social behaviours but they are also shown to decrease problem behaviours and promote independence.

Self-Monitoring

As mentioned earlier, along with transitions it is important to promote independence for the child with autism. Self-monitoring is one way to encourage independence, and it has been shown to be an effective tool for children with autism (Soares et al., 2009). Self-monitoring teaches children with autism to assess and record the existence or nonexistence of their own behaviour (Wilkinson, 2008). Self-monitoring helps children manage and control their own behaviour for longer periods of time or periods of time in the absence of constant supervision (Kobgel, Kobgel, Hurley, & Frea, 1992). This technique has been shown to help reduce tantrums, aggressive behaviour, destructiveness, and noncompliance (Soareses et al., 2009). According to Kobgel et al. (1992) self-management techniques are necessary when integrating children with disabilities to regular academic classroom and community settings. Self-monitoring is also shown to identify behaviours, increase social skills and decrease problem behaviours that can be displayed during transitions.

Coyle and Cole (2004) used self-monitoring and self-modeling to decrease off-task behaviours in three children with autism ranging nine years of age to 11. Videos of children on-task were shown to the child and the child and researcher went through a communication picture card (that was to prompt the child what on-task behaviour looked like) to see if the video of on-task behaviour displayed the behaviours listed on the card. The researcher also video taped the child during classroom time and praised for good behaviour and pointed out behaviours displayed on the card. A communication picture card was taped the child’s desk to prompt the child to display on-task behaviour and this was used to self-monitor by checking off if the child thought he or she behave appropriately. The children in this study all showed significant decreases in off-task behaviour during the intervention. This illustrates that there are sizeable improvements for on-task behaviour when the use of self-modelling and self-monitoring is implemented. Coyle and Cole (2004) also proved that there was not just short-term gain but
long-term gain for on-task behaviour as well. After a follow up was completed it was found that the off-task behaviour remained at the decreased level.

Stahmer and Schreibman (1992) also looked at long-term gains of self monitoring by testing the methods of self-management on three children with autism to help increase appropriate play when lacking supervision. This study took place with three children, two male and one female participant. All children showed low rates of appropriate toy play without supervision. Each child received a training session twice a week in which they distinguished between appropriate toy play and inappropriate toy play when modeled by researchers and then the participants were reinforced for correct responses. After this self-management techniques were added by using a chronograph alarm which the children would time the interval in which appropriately play was to take place and were provided with reinforcement if this interval was consistently made up of appropriate play; the child graded themselves as playing appropriately for the whole interval. This study showed evidence of generalization to other settings by using the same measures as the intervention phase as well as showing that self-monitoring can increase appropriate play.

Kobgel et al. (1992) used four children with autism to help prove that self-management improved social skills for children with autism. Baseline was taken in several different settings to see which setting showed the least amount of social skills. Before the intervention was implemented the children were taught to discriminate between incorrect and correct responses. The children received reinforcement for their correct responses and were to record how many correct responses they received on a wristwatch given to them by the researcher. Then during intervention the child would record whether he or she gave an appropriate response. If the child’s count matched the researchers they child would be rewarded with a selected reinforcer. Kobgel et al. (1992) stated that overall the results of this study show that the self-management techniques were successful when dealing with the lack of social responsivity of a child with autism. To show this success the average rate of social responsivity between the four children during baseline was 51% after the intervention was implemented the rate of social responsivity averaged between 90-100%. Self-monitoring is a successful technique in enhancing social skills that children with autism tend to lack but also can decrease maladaptive behaviours.

Soaroses et al. (2009) examined the effects of self-monitoring on aggression, tantruming, destructive behaviour, and noncompliance. In their 2009 study it was shown that through the use of computer-aided self-monitoring and reinforcement, there was a decrease in tantruming behaviours, and self-injurious behaviours while increasing academic performance. The study was conducted with one participant who was a 13-year-old male who was diagnosed with autism. The participant showed high frequency rates and intensity of tantrums that disrupted him from being able to participate in activities around the school. Through the use of an ABAB design it was established that there was a strong practical significance. The child’s maladaptive behaviours went from a rating of intensity of 3.3 in the baseline phase to a rating of 1.5 after intervention had been completed. The child’s academic production went from 22% in the baseline phase to 92% after intervention. There were some limitations of this study one being the researcher did not test the generalization of this intervention because the child was in a specialize classroom and the child’s academic accuracy was not tested. Even with these limitations, the
overall result of how the self-monitoring decreases maladaptive behaviours and increases appropriate behaviours is very significant. Therefore there is empirical evidence supporting that self-monitoring is an effective way to reduce maladaptive behaviours as well as empirical evidence supporting that self-monitoring is a successful intervention for enhancing or teaching new skills. These studies also show that self-monitoring can help the behaviours being targeted to be generalized to other settings.

Conclusions

Due to the struggle many children with autism experience during transitioning periods, it is clear that interventions need to be implemented to focus on these problem behaviours. Both social stories and self-management techniques are reasonable treatments for teaching appropriate transitions and promoting independence within children with autism, and they have been shown to be an effective intervention on a wide range of social deficits and problem behaviours. Both these interventions are un-intrusive, do not disrupt the school day, and support access to achieving positive reinforcement. Several of the studies showed long-term gains and generalization to other areas as well. Therefore through the evaluation of the studies above social stories and self-monitoring will be the interventions of choice when attempting to increase appropriate transitions in a 7-year-old boy with autism.
Chapter III: Methodology

Participants
The participant in the research study was a 7-year-old Caucasian male in grade 2 who was diagnosed with autism at the age of three. He began in the Autism Program in September 2014 and had never had any sort of former behavioural work. In previous school years the participant usually had a full time Educational Assistant (EAs) with him at all times due to frequency of tantrums. The child has never received any medication for behaviour or diagnosis. The child engaged in tantruming behaviour during transition times through out the school day. These behaviours were mostly displayed when moving from a preferred activity to class work. His teacher and EAs have suggested that the child’s high frequency and intensity of his tantrums interrupt the class from their work and upset the other children in the program.

Settings and Materials
Observations and intervention occurred in the classroom and outside at recess. The child reviewed the social story before the transition was requested for all five days of the week. The review took approximately two minutes before recess ended and before being asked to finish up with free time. Social story cards, self-monitoring cards and a pen and paper to record data were used in this program as well as an iPad with the game Angry Birds.

Design/Measures
To begin the intervention the child’s transitions were observed to determine the baseline level of appropriate transitions and tantrums the child performed. A case study using an AB design was used to implement the procedure. The tool used to measure appropriate transitions was a self-monitoring checklist of appropriate behaviours displayed during transitions (Appendix B). The self-monitoring checklist was used to check off how many appropriate behaviours from the checklist were displayed without prompts before implementing the intervention. The checklist was then used during the intervention but also at the end of the program as well to see if the intervention was effective. Baseline data was collected for five days in which the appropriate transitioning data was stable but the tantruming behaviour was not. Baseline was stopped due to time restraints and requests from the teacher that the program be implemented as soon as possible. Baseline was collected during transitions from recess and free time using a frequency recording method for tantrums and using the checklist to see which appropriate transitions behaviours he displayed. Frequency recording was used because it most accurately showed how often the behaviour occurred and it is an appropriate recording method for these behaviours. The frequency for appropriate transitions were taken by checking off whether the behaviours in the checklist occurred or did not occur and then turned into a percentage (e.g. he displayed one out of the three behaviours on the checklist making it that 33.33% of his transitions were appropriate transitions). These recording methods were also used in the intervention phase. The self-monitoring was not used to teach the child to self-monitor but to be more aware of his actions and help reduce tantruming. The teacher and EAs already had the tantruming behaviour on an extinction method. The teacher and EAs would attempt to ignore the tantruming behaviour and block any aggressive behaviour towards themselves or other children in the class, which was continued during the study as well. This intervention was selected due to the results of the functional assessments completed with the teacher (FAI, Bernfeld, 2012,
Appendix C & MAS, Durand & Crimmins, 1992, Appendix D) and also ABC data was collected (Appendix E). All results are analyzed through a visual analysis of the graphs in the results section.

**Procedure**

The parents or guardians of the student had a consent form sent home to be signed and given back to the school before beginning the study (Appendix A). In the consent form the parents were informed of their right to retract their child from the study at any point and the data would be destroyed if that decision were made. The child was also informed of the intervention and in that time the child had the option to participate or not to participate. The school received the consent form and the St. Lawrence Research Ethics Board approved the study as well. The two independent variables were social stories and self-monitoring. The two dependent variables were tantruming and appropriate transitions. Tantruming is defined as yelling, using negative words, kicking, hitting, pushing, crying, stomping or throwing one-self to the ground. Tantruming is not yelling in an excitable manner. Tantruming begins when any of these behaviours begin to occur and end when the child is not displaying these behaviours and sitting quietly for two minutes. Appropriate transitions are when the child remains quiet, is not running and keeping hands to his self. Appropriate transitions begin when being asked to switch activities or come in from recess and end when seated back at the desk. This intervention was selected based on the results of the functional assessments done by the researcher. From the functional assessments it was hypothesized that the tantruming behaviour was being maintained by escape and attention. The teacher and EAs already had an extinction method in place where the teacher and EA did not speak to child, and blocked the child from hitting other children. Unfortunately other children in the class would get upset during the child’s tantrum but the teacher would try and remove classmates to library when a tantrum was occurring. The teacher and E.A. also used negative punishment procedures by timing the length of the tantrums and taking this time off recesses. Due to the fact that an extinction method was in place but the behaviour was still occurring, teaching the appropriate skill and reinforcing appropriate behaviours seemed to be most effective for increasing appropriate transitions. For the procedure the researcher would ask the child to review the social stories (Appendix F) for approximately two minutes before requesting that the child come in for recess or before being asked to finish free time for all five days of the school week. The social stories were created and implemented by the researcher and based on language the child could understand and pictures he would enjoy. For a correct transition when the bell rang the child should then walk to the line up, walk in the halls, remain quiet, and keep his hands to himself. In a correct transition from free time to less preferred activities when the timer beeped the child should clean up, remain quiet, and sit with the rest of the class. Once sitting down at the desk the child would be asked to check off the self-monitoring checklist for which behaviours he preformed (e.g. being quiet, walking or keeping hands to himself). If the child’s checklist matched the researchers the child would be rewarded with three checkmarks on his good behaviour chart towards free time (an intervention already implemented by the teacher). The first level of this program was for the child to preform all three checklist requirements for five consecutive days. If the child performed all three behaviours on the checklist he received five minutes of Angry Birds on the iPad. The researcher and child would then fill out the self-monitoring checklist after the transition was completed. If the child’s checklist matched the researcher’s he earned three checkmarks towards free time. A least to most
prompting schedule was used; beginning with gestural prompts during the transitions which occurred by holding up the social story as a reminder to make an appropriate transition. After five consecutive days of preforming all three behaviours the second level of the program was implemented by giving the child the social story to hold without reviewing the story before the transition. Prompting would occur twice during the transition and the child would be transitioning to a preferred activity (e.g. going from recess to tech-time) instead of transitioning to silent reading. The self-monitoring checklist was still in place as well; if the child’s self-monitoring checklist matched the researcher he earned three checkmarks towards free time but the angry bird reinforcement was no longer in place. For this level of the program the child had to preform all three behaviours for three consecutive days before moving onto the third level of the program. The third level of the program was discontinuing the self-monitoring checklist as well as the social story. The teacher would ask the child if he behaved appropriately during the transition after the child transitioned from recess or free time and give verbal praise. The only reinforcement given after this point was checkmarks for good behaviour from the teacher when she felt was appropriate. To determine if the treatment was effective the researcher observed the transitions without prompting from the researcher using the same self-monitoring checklist from the treatment phase. The baseline and intervention results were then compared to see if there was an increase in appropriate transitions (Appendix G). This showed whether or not the use of social stories and self-monitoring was an effective way of teaching appropriate transitions. Inter-observer agreement was not completed due to how busy the class was and mediator training was briefly completed; the social story and self-monitoring cards were left for the teacher’s use.
Chapter IV: Results

Assessment Results
To find the function of the tantruming behaviour which was most displayed during transitions functional assessments were done. The assessments conducted were, Sequence Analysis Data, a Functional Assessment Interview (Bernfeld, 2012) with the teacher of the Autism Program and a Motivational Assessment Scale (Durand & Crimmins, 1992) was completed with the teacher as well. The use of frequency recording was used throughout the baseline and intervention phases to show how often the tantruming behaviour and appropriate transitions were occurring. The results of these assessments are listed below.

ABC Descriptive Analysis Data
ABA descriptive analysis data was collected on September 15th, 2014 during the lunch recess when the target behaviour occurred most frequently. Data was recorded by tracking the antecedent events, the behaviours displayed during the event and the consequences of the behaviour. From the analysis it was found that the tantruming behaviour was displayed most when an adult gave instructions for a less preferred activity like coming inside from recess or when the child did not receive his request (e.g. being told no to playing basketball outside at recess). The consequences following the behaviours were attention from surrounding people and teachers and the child was also escaping the demands of the teachers and EAs for a short period of time.

Functional Assessment Interview with Teacher
A modified Functional Assessment Interview (FAI) by Bernfeld (2012) was completed with the teacher of the Autism Program along with opinions from the student because the teacher and student had spent equal amounts of time with the child. This was completed to help find the function of the tantruming behaviour. Through the results of the FAI it was indicated that the likely function of the behaviour was avoiding the demand of moving from a preferred activity to a less preferred activity. There was also an attention aspect of preforming this behaviour because the tantruming behaviour would upset other children and staff.

Motivational Assessment Scale
A Motivational Assessment Scale (MAS, Durand, & Crimmins, 1992) was conducted with the teacher to help find the function of the behaviour. The MAS results (Figure 1.) came back with a significant score in favour of escape as the function of the behaviour. After looking at the results of the MAS it was hypothesized that the child preformed the tantruming behaviour in hopes to continue the preferred activity longer and avoid moving onto a less preferred activity. The results were shown through a relative ranking system in which escape was the first, tangible was a close second function of the behaviour and attention was ranked the third function. After looking at the conclusions of the functional assessments it was hypothesized that the behaviour was being maintained by escape and attention.
Figure 1. Graph showing the results of MAS to determine the function of the behaviour.

**Frequency of Tantruming and Appropriate Transitions**

During baseline the child’s tantruming and appropriate transition behaviour was considered unstable because 80-90% of the data points were not within a 15% range of the mean data point (Appendix H for a sample of raw baseline data). The intervention unfortunately had to be started due to time restraints and the intensity of the behaviour (other children were getting hurt during tantrums). Table 1 shows the results of the child’s tantruming and Table 2 shows the appropriate transitions during baseline. The results show that the child displayed appropriate transitions from recess to class time and free time to less preferred activities 11.18% of the time. The child displayed tantruming behaviour during these transitions 36.67% of the time. Some baseline days as well as treatment days were skipped due to absences or professional activity days in which the child did not attend.

**Table 1.** Appropriate Transitions - Baseline Results

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Mean</td>
<td>11.18%</td>
</tr>
<tr>
<td>Median</td>
<td>16.67%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>9.29</td>
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</tbody>
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**Table 2.** Tantruming Baseline Results

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<tbody>
<tr>
<td>Mean</td>
<td>36.66%</td>
</tr>
<tr>
<td>Median</td>
<td>50%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>19.44</td>
</tr>
</tbody>
</table>

Looking at the results above it can be concluded that the high average rate of tantruming the child displayed throughout baseline is likely affecting the appropriate transitions the child is making during the school day. Even though the mean tantruming was 36.66% and this may be a
lower number in comparison to other behaviours that need to be decreasing, intervention had to be implemented due to the intensity of the behaviour and how it affected the other children in the classroom. From the sequence analysis and other assessment a pattern in antecedents can be found. The most common antecedent is when the child is asked to move from a preferred activity (recess, computers, and iPad time) to a less preferred activity.

**Intervention Results**

Due to demands of teacher and time constraints of the time in the Autism Program the program was adapted to fit the needs of the teacher. In this case the treatment was implemented for 22 days but the phasing out process had to be changed to a shorter time, which caused a spike in behaviour. Intervention results for the child’s tantruming behaviour and appropriate transitions are displayed in Figure 2/Table 3 and Figure 3/Table 4 to show the comparison of the baseline and treatment phases.

**Tantruming**

The intervention was implemented to decrease the child’s tantruming during transitions over 22 days. According to Scruggs and Mastropieri (1998) the percentage of data points exceeding the median (PEM) must be 90% or greater to be considered effective. The PEM for the data set calculated to be 100%, which demonstrates an effective intervention. Similarly, the percentage of non-overlapping data (PND) must also be 90% or greater to be considered effective and the PND for this data set calculates to be 13.67%. This low percentage is considered to be an ineffective intervention; however according to Ma (2006) if one or more of the data points reaches zero the PND will be significantly lower and be considered ineffective even though through a visual analysis of the graph it can look more effective than the PND indicates. The graphs are displayed in Appendix K. The treatment data was considered to be stable because 86.36% of the data is within a 15% range of the mean data point (Tawney & Gast, 1984). Tantrums also decreased by 32.49% in comparison from the baseline to the intervention results, which is not more of a considerable effect due to the spike in the behaviour (displayed in the graph, Appendix K). The phasing out process being completed to quickly caused the spike in behaviour.

**Appropriate Transitions**

The intervention was implemented to increase the child’s appropriate transitions over 22 days. When looking at the average of the baseline of appropriate transitions and comparing it to the average of the intervention results the child’s appropriate transitions improved by 78.39%. The PND data for the child’s appropriate transitions was 100%, which is considered effective according too Scruggs and Mastropieri (1998). The PEM also shows that the intervention is considered very effective because all data points are above the median point, which makes for a PEM of 100%. The intervention results of appropriate transitions were calculated to be unstable because 80-90% of the data points were not within a 15% range of the mean data point (Tawney & Gast, 1984). Only 23.08% of the data points fell within a 15% range of the mean data point.
Table 3: Intervention Results for Appropriate Transitions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>89.57%</td>
</tr>
<tr>
<td>Median</td>
<td>91.67%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>12.39%</td>
</tr>
</tbody>
</table>

Table 4. Intervention Results for Tantruming Behaviour

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.17%</td>
</tr>
<tr>
<td>Median</td>
<td>0%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>10.58%</td>
</tr>
</tbody>
</table>

Figure 2. Graph of baseline and intervention from the frequency of tantrums per day.
Figure 3. Graph of baseline and intervention results for the frequency of appropriate transitions per day.
Chapter V: Discussion

Summary

After comparing the baseline and treatment results and after preforming a visual analysis of the trendlines, percentage of data exceeding the median and the percentage of non-overlapping data it was found that using self-monitoring and social stories to increase appropriate transitions was a successful and effective method. In terms of decreasing the tantruming behaviour that was displayed during transitions, it was found that there was a slight decrease of 32.49% in comparison from the baseline results. This number did not show a more considerable effect because there was a spike in the behaviour when the phasing out process began which would cause the percentage of decrease. During the intervention the teacher of the Autism Program reported that she believed there was generalization during other transitions as well but data was not collected to prove this opinion.

Strengths

One of the strengths of this behavioural program is that it can be customized to different behaviours and different clients. This is possible because the program is teaching the child a new skill like how to appropriately transition. So in theory the use of social stories should be able to teach children a variety of different skills. The social stories, self-monitoring and reinforcement were all customized to the participant’s level of learning, their behavioural needs and what the child would find reinforcing. Another strength of this program is that with strong reinforcement the social story gives the child other behaviours to perform other than tantruming, the program does not just reinforce for the lack of behaviour but also for an alternative behaviour.

Limitations

A limitation of this program is that there is only one participant. As Willis (2014) mentioned by only having one participant the results cannot be compared to other participants and that there are concerns of reliability and the ability to replicate the program. Other inter-related issues can occur such as subjectivity, objectivity and external validity (Willis, 2014). Another limitation to the results would be how the child responded to the different transitions. The child was found to transition from recess to class time and free time to class time significantly better when the activity coming after the transition was a preferred one. The morning recess transition was always calculated to be a higher percentage because the child would be transitioning to a preferred activity such as, “tech time”. The lunch recess mostly received lower scores because the child would be transitioning to silent reading, a less preferred activity than recess. Another conflict could have been the lunch recess bell. The bell did not ring during the morning recess, as the Autism Program did not partake in the regular recess where as the lunch recess occurred with the other children in the school and this in when the bell would ring. When the bell would ring the child would run to the wall where the class lined up, usually pushing and hitting children on the way, this behaviour did not occur during the morning recess. It was hypothesized that it was most likely the fact the child was moving to a less preferred activity because the functional assessments indicated the tantruming behaviour was a function of escape. Another limitation would be the use of an AB design. With the use of an AB design it is hard to prove that the intervention is credible for the change in behaviour because the intervention did not return to the non-intervention conditions to see if the tantruming behaviour
increased due to no intervention being implemented. Lastly, due to the unstable baseline it is hard to derive that the intervention is targeting the correct behaviour and function but due to time restraints and severity of the behaviour intervention was warranted.

**Multilevel Challenges to Service Implementation**

**Client level.** On a client level many things can affect the client. For the child in this study certain things such as mood, alertness and diet can affect the implementation of the program. In this case the child ate unhealthy snacks and lunches and often did not have a set time to come into school. Changes like these can cause a child with autism difficulties because many children with autism prefer to have routines (Flannery & Horner, 1994). Medication changes are often seen in children with behavioural problems or autism and can be switched or stopped without warning. In this case the child was not on any medication and had been diagnosed at the age of three in which he had never been reassessed for medication or a new diagnoses.

**Program level.** Working in a school with a specialized program can have its difficulties especially when working on a child’s transitions. The autism programs tend to have staggered recesses and lunch recess with the rest of the school. This can cause confusion and stress for the child if they behave better in smaller settings. The program implemented used a reinforcement system in which can be difficult for other students in the class because they wanted to receive the same reinforcement.

**Organization level.** Other staff can often be found to be dismissive of programs being implemented due to the belief that it may make their job more difficult. Staff who do not have a behavioural background may not believe in the programs being run through out the organization and may not implement the program when asked too, which does not help with consistency. These problems all occurred while running the program with the participant. Another problem that came up was also an issue with the teacher of the Autism Program. The teacher did not understand the phasing out process and pushed for the program to be phased out sooner rather than later. This caused a spike in the behaviour and a severe program change and was believed to affect the results of the program in a negative way.

**Societal level.** The program being implemented would be considered appropriate because it helps increase appropriate behaviours and necessary behaviours for everyday life. Transitioning is a skill that is needed to be able to be successful. Families need this program because even in a non-school day transitions from preferred activities to less preferred activities will be made. Society and families see the necessity of this program because of the behaviours such as tantruming that can occur during transitions can be intense and inappropriate.

**Contributions to the Field of Behavioural Psychology**

There is minimal empirical research on the effectiveness on the use of social stories and self-monitoring to increase appropriate transitions and this study adds to the research available in the field of behavioural psychology through a case study. The use of social stories and self-monitoring has been a major intervention for children with autism, as the studies in the literature review have shown but not necessarily to help increase appropriate transitions. This study furthers the support of social stories and self-monitoring in regards to teaching new skills and is an easier intervention to implement in classrooms than some other interventions and easier to
train others that lack a behavioural background to use it. Lastly, this study not only attempted to increase the appropriate transitions of the child but also used the self-monitoring to help decrease the behaviour that occurred during the transitions, tantruming. This offered an easy technique that could be applied by other adults in the Autism Program in which was shown to be an effective method of increasing appropriate transitions and a somewhat effective method for decreasing the tantruming.

Recommendations

It is recommended for future use of this program that to see a significant decrease in the tantruming behaviour that the phasing out process of this program be extended and phased out over a longer period of time to reduce a spike in the behaviour and maintain the behaviour for a longer period of time. Another recommendation, to increase the validity of the study is too implement this intervention on a larger sample size of children with autism. Further research is needed to acquire the knowledge of whether or not there is a functional relationship between the intervention and the behaviours being
References


Appendix A: Example of Consent Form


Principal Investigator: Vivianne Gallupe
Name of supervisor: Michelle Holloway
Name of Institution: St. Lawrence College
Name of part partnering institution/agency:

Invitation
Your son is being invited to take part in a research study. I am a student in my 4th year of the Behavioural Psychology program at St. Lawrence College. I am currently on placement at Kingston Autism Program. As a part of this placement, I am completing a research project (called an applied thesis). I would like to ask you and your son for help to complete this project. The information in this form will help you understand my project. Please read the information carefully and ask all the questions you might have before deciding to allow your son to take part.

Why is this study being done?
This study is being done to see if the use of social stories and self-monitoring is a good way to teach children with autism how to behave during transitioning between activities. Social stories are pictures that describe certain behaviours, in this case how they behave during a transition time. The social stories will be read everyday before being asked to come in for recess and before asking your son to finish his free time. The development of the behaviour change plan will include an assessment of current transitions. This client-focused project will be developed in collaboration with you, your son, the agency’s staff, and team members.

What will your son need to do if you take part?
If your son is to take part in this study you will be asked to have your child take part in a maximum of a 1 hour training session a day with myself in which we will go over the social stories and check off what behaviours were completed during the transition. These sessions will occur in the school for 5 days a week for 2.5 months. Before beginning the sessions your child’s social interactions will be observed to see where they are at and then they will be observed after to see if there is an improvement.

What are the potential benefits of taking part? (if applicable)
Benefits of taking part in this research study include an increase in appropriate transitions, which will be beneficial for the child’s life.

What are the potential benefits of this research study to others? (if applicable)
The potential benefits of this research study to others include more research on social stories and self-monitoring and the effectiveness of the social stories and self-monitoring so that the use of this program can benefit other children with autism.
What are the potential disadvantages or risks of taking part?
Risks from taking part in this research study are minimal but may include loss of time from school but we will be sure to try and have the sessions completed in the spare time at school.

What happens if something goes wrong?
All children are different and if there are any strong reactions to the social stories or roleplaying we can address this immediately. If your son does experience an adverse reaction the intervention will be stopped immediately. To calm the child down he will be removed from the situation and will be shown his favorite calming video on the ipad. If adverse reactions do occur you will be informed as well through a note in your son’s agenda. Feel free to email me at anytime at vgallupe@hotmail.com

Will my information you collect from my son in this project be kept private?
All information given to us will be kept confidential unless required by law. All information, including consents, will be kept in a locked cabinet, or encrypted on a computer that is password protected. The computer with the data will be with me or locked in my house at all times. All names or identifying information will be changed in the data collected or reports that are created. The data will be kept for 7 years and then destroyed.

Do you have to take part?
Taking part is voluntary. It is up to you and your son to decide whether or not to take part in this research project. If you do decide for your son to take part, you will be asked to sign this consent form. If you do decide to allow your son to take part in this research project, you are still free to withdraw him at any time, without giving any reason, and without experiencing any penalty, or negative effects.

Contact for further information
This project has been approved by the Research Ethics Board at St. Lawrence College. The project will be developed under the supervision of John Smith, my supervisor from St. Lawrence College. I really appreciate your cooperation and if you have any additional questions or concerns, feel free to ask me, Vivianne Gallupe (vgallupe30@sl.on.ca). You can also contact my College Supervisor (hollowaymichelle8@gmail.com) or you may also contact the Research Ethics Board at reb@sl.on.ca.

Consent
If you agree to allow your son to take part in this research project, please complete the following form and return it to me as soon as possible. A copy of this signed document will be given to you for your own records. An additional copy of your consent will be retained at the agency [and in a secure location at St. Lawrence College, if applicable].

By signing this form, I agree that:
✓ The study has been explained to me.
✓ All my questions were answered.
✓ Possible harm and discomforts and possible benefits (if any) of this study have been explained to me.

✓ I understand that I have the right not to participate and the right to stop at any time.
✓ I am free now, and in the future, to ask any questions I have about the study.
✓ I have been told that my personal information will be kept confidential.
✓ I understand that no information that would identify me will be released or printed without asking me first.
✓ I understand that I will receive a signed copy of this consent form.

I hereby consent to take part.
## Appendix B: Self-monitoring Checklist

<table>
<thead>
<tr>
<th>Did I …?</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Walk</strong> in the halls</td>
<td></td>
</tr>
<tr>
<td>Stay <strong>quiet</strong> in the line up and in the halls</td>
<td></td>
</tr>
<tr>
<td>Keep my hands to myself</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Did I… ?</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clean</strong> up</td>
<td></td>
</tr>
<tr>
<td><strong>Stay Quiet</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Walk</strong> over and sit down with the rest of the class</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C: Modified Functional Assessment (Bernfeld, 2012)

Modified Functional Assessment Interview¹

Section A: Describing the behaviour
What does the behaviour look like when it is happening?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>How long does it last.</td>
<td></td>
</tr>
<tr>
<td>Intensity</td>
<td>How damaging or destructive is the Behaviour(s)?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Describe the behaviour</th>
<th>I. Frequency</th>
<th>II. Duration</th>
<th>III. Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>For example: The Behaviour is Hitting</td>
<td>For example: On average twice a day.</td>
<td>For example: On average 3-4 seconds</td>
<td>For example: The behaviour often results in bruising and upsetting her peers.</td>
</tr>
<tr>
<td>Describe as: She strikes out and hits people as they walk past her.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yelling, crying, throwing self to the ground, hitting, bumping other kids, grabbing others, pushing.</td>
<td>On average, twice a day.</td>
<td>5 minutes to a half hour</td>
<td>Can hurt peers, himself and upsets the classroom</td>
</tr>
</tbody>
</table>

¹ Full citation is Bernfeld, G. A. (2012) Modified Functional Assessment Interview. Unpublished measure. Community Services Department, St. Lawrence College, Kingston, Canada. This measure is based on the Functional Assessment Interview (O’Neill et al., 1997) and is also adapted from similar measures used by Community Behavioural Services, Ongwanda Recourse Centre (Rachel Brace, Personal Communication, September 11, 2012. In fact, Sections A to C of this measure are mostly taken from the 2012 Ongwanda measure, while Sections D and E are derived from a measure they used in 2007.
Section B: Describe Setting Events that Predict the Problem Behaviour

1. What Medications is the person currently taking and how may these affect their behaviour?

None

2. Are there any Medical or Physical Conditions that the person experiences that may affect their behaviour? (For example: allergies, seizures, problems related to menstruation...)

None

3. Describe any Sleep Patterns or Eating Routines/Diets of the person and the extent to which these may affect their behaviour.

Eats a lot of sugary snacks, high carbohydrates and tends to only eat the meat out of his lunchable so he may be hungry during the day. Very picky and will not eat snacks provided by school.

4. Briefly list the person’s typical daily schedule of activities.

Check the boxes by those activities the person enjoys and those activities associated with the problem behaviour.

<table>
<thead>
<tr>
<th>Enjoys Problems</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ __ 6:00am__________</td>
<td>✔ __ 2:00pm free time</td>
</tr>
<tr>
<td>__ __ 7:00am__________</td>
<td>✔ __ 3:00pm home time</td>
</tr>
<tr>
<td>__ __ 8:00am__________</td>
<td>__ __ 4:00pm__________</td>
</tr>
<tr>
<td>✔ __ 9:00am Silent reading</td>
<td>__ __ 5:00pm__________</td>
</tr>
<tr>
<td>✔ __ 10:00am music</td>
<td>__ __ 6:00pm__________</td>
</tr>
<tr>
<td>✔ __ 11:00am_recess</td>
<td>__ __ 7:00pm__________</td>
</tr>
<tr>
<td>✔ __ 12:00pm_lunch</td>
<td>__ __ 8:00pm__________</td>
</tr>
<tr>
<td>✔ __ 1:00pm_tech time</td>
<td>__ __ 9:00pm__________</td>
</tr>
</tbody>
</table>

BEDTIME__________________________________________

5. To what extent are the activities on the daily schedule predictable for the person with regard to what will be happening, when it will occur, with whom and for how long?

Very predictable. Schedule is visible in the classroom.
6. Do they have the opportunity during the day to make choices about their activities?

Describe: Only during free time

7. Does the person typically seem bothered in situations that are more crowded and noisy?

Describe: Yes, especially noisy

8. What is the pattern of staffing support?

Teacher, EA and student in the morning and a second EA in the afternoon

9. Does the behaviour occur more or less when an activity is being done alone? No

Describe: One person providing support No

Group setting Yes

Describe: When asked to finish recess the child does not want to go inside and he yells and screams, hits and cries or when told no to certain things or when recess is taken away due to tantruming.

Section C:

Describe immediate antecedent events that predict when the behaviour is likely and not likely to occur.

1. Time of Day: When are the Behaviours most and least likely to happen?

Most Likely: when asked to finish an activity he does not like or told he cannot do something.

Least Likely: During recess and preferred activities.

2. Settings: Where are the Behaviours most and least likely to happen?

Most Likely: When sitting on the wall during recess as a punishment for tantruming, or coming inside from recess when the children are lined up from recess along the wall of the school.

Least Likely: In the gym, on the playground or class when preferred activities are being taken place.

3. Social Contact: With whom are the Behaviours most and least likely to happen?

Most Likely: Teachers, EAs

Least Likely: Children are not usually the root cause of the tantrum but get hurt in the process.
4. **Activity:** What activities are *most* and *least likely* to produce the Behaviour?

**Most Likely:** When told to come in from recess, or gym or from free time to work

**Least Likely:** During gym, recess

5. Are there any *other situations* or events during which this behaviour is likely to occur that is not listed above? If so, please describe each situation or event.

**Section D: Describing the Consequences for the Behaviour**

Please fill in the following chart for each situation that the problem behaviour is likely to occur during:

<table>
<thead>
<tr>
<th>Situation</th>
<th>What does he/she get?</th>
<th>(And/or) What does he/she avoid?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe the situation.</td>
<td>Does the person receive a favored object, activity, person's attention, physical sensation, etc. by performing the behaviour?</td>
<td>Does he/she avoid doing a disliked activity, object, person, physical sensation, etc. by performing the behaviour?</td>
</tr>
<tr>
<td>The child is asked to come in from recess, he runs to the wall and shoves smaller child</td>
<td>Child upsets the hurt child, other children around him as well as the teacher.</td>
<td>Avoids going in right away and receives attention.</td>
</tr>
<tr>
<td>Free time to less preferred activity. Child screams, yells, hits, flips desk and wrecks classro</td>
<td>Upsets other children in the class, upsets teacher and EAs</td>
<td>Avoids doing less preferred activity for longer.</td>
</tr>
</tbody>
</table>
Section E: Summary Sheet For The Modified Functional Assessment Interview For Mediators

**Directions:** Summarize the information you have gathered in the previous pages of the *Modified Functional Assessment Interview*. You will do this by inserting the information in each corresponding section.

**Rationale:** The completion of this form will give the correspondent a visual layout for what the behaviour looks like, what triggers/predicts it, and what maintains it or what makes the child/client want to perform it.

<table>
<thead>
<tr>
<th>This is what my child's/client's behaviour looks like:</th>
<th>This is what triggers/predicts the occurrence of the behaviour:</th>
<th>This is why my child/client continues to perform the behaviour:</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Summarize/list the information gathered in Section A of the Modified Functional Assessment I Interview</em></td>
<td><em>Summarize/list the information gathered in Section C of the Modified Functional Assessment Interview</em></td>
<td><em>Summarize/list the information gathered in Section D of the Modified Functional Assessment Interview.</em></td>
</tr>
</tbody>
</table>

| Yelling, screaming, hitting, grabbing and shoving. | Being asked to come inside from recess or finish on free time. | Attention from others and escape from having to come in from recess/free time. |
## Appendix D: Motivational Assessment Scale

<table>
<thead>
<tr>
<th>Questions</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Would the behavior occur continuously, over and over, if this person were left alone for long periods of time? (For example, several hours)</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>2. Does the behavior occur following a request to perform a difficult task?</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>3. Does the behavior seem to occur in response to you talking to other persons in the room?</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>4. Does the behavior ever occur to get a toy, food, or activity that this person has been told that he or she can't have?</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>5. Would the behavior occur repeatedly, in the same way, for very long periods of time, if no one were around? (For example, rocking back and forth for over an hour.)</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>6. Does the behavior occur when any request is made of this person?</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>7. Does the behavior occur whenever you stop attending to this person?</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>8. Does the behavior occur when you take away a favorite toy, food, or activity?</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>9. Does it appear to you that this person enjoys performing the behavior? (It feels, tastes, looks, smells, and/or sounds pleasing.)</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her? (For example, if you are sitting in a separate room,</td>
<td></td>
</tr>
</tbody>
</table>
interacting with another person.)

12. Does the behavior stop occurring shortly after you give this person the toy, food, or activity he or she has requested?

13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?

14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands of this person?

15. Does this person seem to do the behavior to get you to spend some time with him or her?

16. Does the behavior seem to occur when this person has been told that he or she can't do something he or she had wanted to do?

<table>
<thead>
<tr>
<th></th>
<th>Sensory</th>
<th>Escape</th>
<th>Attention</th>
<th>Tangible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0</td>
<td>2.</td>
<td>3.</td>
<td>4.</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>6.</td>
<td>7.</td>
<td>8.</td>
</tr>
<tr>
<td>9.</td>
<td>3</td>
<td>10.</td>
<td>11.</td>
<td>12.</td>
</tr>
<tr>
<td>13.</td>
<td>14.</td>
<td>15.</td>
<td>16.</td>
<td></td>
</tr>
</tbody>
</table>

Total Score = Mean Score =

\[
\text{Total Score} = \frac{\text{Mean Score}}{4}
\]

Relative Ranking (high score to low score)

- .75
- 6
- 4.25
- 5.5

If there is a tie for the highest score or if the means of the top two categories are within .25 to .50 points (and you have clearly specified the behaviour and setting), then both are considered as influences that may be causing the problem behaviour to continue.
## Appendix E: Sample of ABC Data

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>Behaviour</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketballs were not brought out for recess</td>
<td>Child hits other student</td>
<td>Blocked by E.A. and told to take a time out</td>
</tr>
<tr>
<td>Asked to stay on the wall in a time out.</td>
<td>Yells and throws himself to the ground</td>
<td>Has to wait until he is calm for two minutes until he is allowed to participate in recess</td>
</tr>
<tr>
<td>Bell rings and is told he gets tech time after he comes in for recess</td>
<td>Takes one more shot with the basketball and lines up</td>
<td>Praised</td>
</tr>
<tr>
<td>Walks to door</td>
<td>Hits other student</td>
<td>Asked to stay outside until calm</td>
</tr>
</tbody>
</table>
### Appendix F: Social Story Cards

**Appropriate Transitions From Recess**

<table>
<thead>
<tr>
<th>Step</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the bell rings</td>
<td><img src="image1" alt="Bell Image" /></td>
</tr>
<tr>
<td>Walk to Line Up</td>
<td><img src="image2" alt="Children Standing" /></td>
</tr>
<tr>
<td>I stay quiet in the halls</td>
<td><img src="image3" alt="Quiet Face" /></td>
</tr>
<tr>
<td>Keep my hands to myself</td>
<td><img src="image4" alt="No Hands Sign" /></td>
</tr>
</tbody>
</table>
### Appropriate Transitions from Free Time

<table>
<thead>
<tr>
<th>When free time is over</th>
<th><img src="image1" alt="Image" /></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I clean up</strong></td>
<td><img src="image2" alt="Image" /></td>
</tr>
<tr>
<td><strong>Stay Quiet</strong></td>
<td><img src="image3" alt="Image" /></td>
</tr>
<tr>
<td><strong>I sit with the rest of the class</strong></td>
<td><img src="image4" alt="Image" /></td>
</tr>
</tbody>
</table>
Appendix G: Graphs for Appropriate Transitions and Tantruming

Graph Displaying Baseline and Intervention Results of Appropriate Transitions

Graph Displaying Baseline and Intervention Results of Tantrums

Spike in behaviour

PND line and trend line underneath.
## Appendix H: Sample of Baseline Raw Data

### Day 1

Recess to Class Transitions and Tantrums

<table>
<thead>
<tr>
<th></th>
<th>First Recess</th>
<th>Second Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiet</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Hands to self</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Walking</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Tantrum Occurrence</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

* Child did not earn free time during this day. This shows a 0% occurrence of appropriate transitioning from recess to class and a 50% tantruming rate.

### Day 2

Recess to Class Transitions and Tantrums

<table>
<thead>
<tr>
<th></th>
<th>First Recess</th>
<th>Second Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiet</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Hands to self</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Walking</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Tantrum Occurrence</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

* This shows a 16.67% occurrence of appropriate transitioning from recess to class and a 50% tantruming rate.