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Efficacy of Social Stories™ for Typically Developing Preschool Children

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Efficacy of Social Stories™ for Typically Developing Preschool Children

(TITLE)

BY

Loni Berbaum

UNDERGRADUATE THESIS

Submitted in partial fulfillment of the requirement for obtaining

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Abstract

Social Stories™ are short stories that utilize visual and auditory components to demonstrate how to appropriately respond in problematic social situations. Studies have provided evidence of the effectiveness of Social Stories™ in reducing negative behaviors for children with autism; however, limited research exists on the effectiveness of Social Stories™ for other populations of children. The purpose of the present study was to determine the efficacy of Social Stories™ on decreasing undesirable behaviors in typically developing preschool children.

The study included 11 children, ages 3 to 5, who were enrolled in a typical preschool classroom at a daycare facility. Initially, teachers completed a survey to identify undesirable behaviors of each participant that interfered with their classroom performance. The researchers and teacher chose one target behavior for each participant based on ratings of frequency of occurrence, severity level, and impact on classroom performance. The behaviors targeted for intervention were common disruptive behaviors considered severely aggressive or extremely harmful. The participants were separated into two groups, a treatment group who received social story intervention and a control group. A Social Story™ was generated for each participant in the treatment group to address the targeted behavior.

The five children in the treatment group were read a customized social story twice per school day for six weeks. The six children in the control group did not receive social story intervention. During the six-week experimental period, three behavior observations were completed for all participants. Pre-intervention, mid-point (three-weeks), and post-intervention observations utilized a behavior checklist to record frequency and duration of the target behaviors. In addition, following the six-week intervention period, teachers completed the initial

survey again to determine perceptions of frequency of occurrence, severity level, and functional impact of the target behavior for each participant (in both treatment and control groups).

Analysis of the behavioral observations demonstrated a statistically significant decrease in frequency of disruptive behaviors for the experimental group. While a decrease in the duration of behaviors was noted, it was not statistically significant. No change in behavior was documented in teachers' subjective ratings. Maintenance of the decreased target behaviors was not demonstrated eight weeks post intervention.

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Chapter 1

Introduction

As children develop, they gain the necessary interpersonal skills to function in everyday life. Social expectations for young children, such as the social skills necessary to carry out effective conversations, have not been studied extensively (Beauchamp & Anderson, 2010). Kaderavek (2011) explained that pragmatic development occurs gradually over time, but the foundation begins during infancy; by the time a child enters kindergarten, most prosocial behaviors are present. If the desired social behaviors do not occur spontaneously or reflect those of their peers, behavior management techniques can be used. These include, but are not limited to, various forms of timeout (Turner & Watson, 1999) or using stories (Smith, 2009). Teaching social skill techniques in a group setting can lead to increases in prosocial behavior (Guglielmo & Tryon, 2001; Han, Catron, Weiss, & Marciel, 2005). When behavior management techniques are implemented on an individual level, a positive or prosocial behavior can be the focus to reinforce the desired behavior. One way to promote prosocial behavior is to teach wanted behaviors by using books (Smith, 2009). A specific technique of promoting social skills by using stories is called Social Stories™ (Gray, 2004).

Social Stories™ are visual representations or scripts that apply expected pragmatic rules to real social situations. The stories were originally intended for children on the autism spectrum in order to increase positive behaviors and reduce negative behaviors in various social situations (Gray, 2000). The stories provide a guide that the individual can use to navigate an uncomfortable or socially challenging situation, such as greeting people or talking on the phone. Social Stories™ must follow a specific set of criteria including first or third person point of view, meaningful pictures, and six types of sentences that comply with the Social Story™ Formula.

Because Social Stories™ were created for individuals with autism, children with ASD have been the primary focus of research studies. Recently, Social Stories™ have been used to target other populations, including typically developing children (Whitehead, 2007; Toplis & Hadwin, 2006; Benish & Bramlett, 2011). The studies involving typically developing children revealed varying results; the stories were effective for some children, while others did not respond well. The social targets varied greatly, as did the methods within each study. However, there were common limitations, such as a lack of measure for long term effectiveness and verification that story comprehension was present. In addition, previous studies did not compare results for a control versus experimental group.

The current study examined the efficacy of Social Stories™ with a typically developing preschool population. In order to address limitations of previous studies, the current study evaluated generalization of social skills 8 weeks after intervention, and ensured comprehension of the stories by asking the participants questions about the intent of the story on changing their behavior. In addition, a control and experimental group were included.

Chapter II

Literature Review

Expected Social Behaviors of Children

The ability to connect with people in various situations is the foundation for effective communication. Beauchamp and Anderson (2010) explained a multifaceted perspective, socio-cognitive integration of abilities model (SOCIAL), of how social skills are acquired. With typical development of a person mentally, socially, and biologically accounted for, SOCIAL encompasses the biopsychosocial theory to create a cohesive idea of how social skills are acquired. “Some brain areas are preferentially involved during basic social processing (e.g., face recognition or emotion perception) and are functional in early development, and others mature progressively through childhood and adolescence, contributing to complex neural networks and subsuming high order processing (e.g., social judgment, moral reasoning)” (Beauchamp & Anderson, 2010, p. 41). Therefore, pragmatic development occurs gradually through life but begins during infancy.

During infancy, children should make eye contact, take turns, and maintain use of joint visual attention (Kaderavek, 2011). Throughout the toddler stage, children gain the ability to request, demand, question, and state thoughts. Preschool marks the beginning of discourse skills, including initiation and maintenance of conversation, as well as the ability to make clarifications when the conversational partner does not understand (Kaderavek, 2011). Arslan, Durmusoglu-Saltali, and Yilmaz (2011) stressed that preschool is the best time to learn prosocial behavior, due to children’s ability to easily take in information from their surroundings and other people. By the time the child enters school, comprehension of personal space, volume control, appropriateness of questions, and classroom etiquette should be present. An inability to grasp

these concepts will socially alienate the child, cause frustrations, and lead to behavioral issues. These behaviors can remain problems into adulthood (Beauchamp & Anderson, 2010).

Behavior Management Techniques

It is necessary for children to learn to control unwanted behaviors through various behavioral management techniques. One such popular technique includes various forms of timeout. Turner and Watson (1999) explained that timeout is a way to reduce and/or extinguish unwanted behavior. The unwanted behaviors range from an inability to sit still, aggression, talking/arguing, inattention, and use of foul language. Three categories of timeout exist: isolation, nonexclusion, and exclusion (Turner and Watson, 1999). Isolation is physically removing the person from the room. Nonexclusion is allowing the person to remain in the room observing the activity without being able to participate, and exclusion is when the person is not able to watch the activity but is left in the room. Turner and Watson (1999) expressed the importance of explaining timeout in age-appropriate language, modeling what is acceptable, and using timeout consistently. A warning can be given before the implementation of the timeout, but the evidence was unclear as to whether or not any difference was made in the subsequent actions. Another important factor was using positive reinforcement once the timeout has been successfully completed. Positive reinforcement allows the person to understand and recognize how to execute the wanted behavior. Timeout can be used with any age group and was shown to be effective (Turner & Watson, 1999).

Other behavior techniques are also becoming widely accepted. Smith (2009) explained that children need to focus on how their actions affect others, and one way to do this is by reading stories. Once the story is read, an explanation can be given so comprehension of the

story is achieved. By examining the story, the child gains knowledge in literacy, along with a sense of social awareness.

Smith (2009) further discussed three research-based techniques to combine behavior management with literacy. The first tier is based on group contingencies, which teach the child to share and be a part of the group through the use of demonstrations, modeling, and rewards. Pictures can be used and are one type of cue or model that provides visual reminders of rules and expectations. Along with pictures, modeling is used and involves exposing a child to a positive behavior by a peer or adult. A reward is given when the child repeats the modeled action, such as personal time reading with the teacher. In the second tier, modeling is expanded with the use of self-talk, such as describing how a person felt when they became angry or frustrated. Reminders of how to react in situations are necessary for younger children to internalize the information. The third tier utilizes an individualized plan for severe behaviors that works on correcting negative behaviors and enforcing positive behaviors. Special rewards of reading stories or literacy games can be used within all tiers. By combining literacy and behavior management, children learn prosocial behaviors, as well as increased literary knowledge.

Han et al. (2005) along with Guglielmo and Tryon (2001) found that directly teaching social skills in a preschool classroom was effective in improving social behaviors. Han et al. (2005) used a preschool program called Reaching Educators, Children, and Parents (Pre-K RECAP), to target unwanted behaviors for all typically developing children in the classroom. The behavior management program targeted specific social skills such as making and keeping friends, understanding others' emotions, self-control, problem solving, and how to relax. Parents and teachers of the participants were asked to complete questionnaires that assessed the child's behavioral and emotional problems, as well as the gains made through the intervention. The

parent reports differed significantly from the teacher report. Analysis of parent report data revealed that there were no treatment effects, while data from the teacher reports showed that on a classroom scale, individuals' behaviors were improved by teaching social skills. The two skills that showed the greatest improvement were cooperation and assertion, while self-control was the least affected.

Guglielmo and Tryon (2001) researched the efficacy of a similar program, *Taking Part, Introducing Social Skills to Children*, which used stories to target behaviors for participants diagnosed with developmental delays. The study included three groups that targeted different social skills by using stories. Two groups focused on being in a group and sharing, while the third was the control group which received no intervention. Within the two experimental groups, one received the intervention and reinforcement, while the other group only received reinforcement. The teacher taught social skills by asking questions, giving feedback, and presenting examples to the participants. Physical or verbal reinforcement was used to encourage the children to learn the social skill. The data was collected through observation and suggested that the program, in conjunction with the reinforcement, led to significant gains in the assimilation of skills for sharing and being in a group. The most significant gains were made by the experimental group who received both components. There was improvement in the group who only received reinforcement when compared to the control group "These results provide[d] some preliminary support for the efficacy of the program on children's behavior problems and social skills, at least within the school setting" (Guglielmo & Tryon, 2001, p. 692). Social skills can be effectively targeted in a group setting with literacy (Guglielmo & Tryon, 2001), which suggest that individualized plans that target social skills using a literacy component can be effective (Smith, 2009). These studies support the hypothesis that Social Stories™ have the

potential to be a successful intervention strategy in modifying behaviors for typically developing children.

Definition and How to Write Social Stories™

Gray and White (2002) explained that Social Stories™ are an intervention tool to aid children with Autism Spectrum Disorder (ASD). The stories are used to describe a condition or behavior that is based on relevant social cues. Social Stories™ focus on an array of topics that allow a child to learn socially acceptable behaviors (Gray & White, 2002). Gray (2004) indicated that there are several possible categories Social Stories™ can spotlight. These include routines, noticing social cues, discussing reasoning behind expectations, describing new events, celebrating achievements, and explaining differing points of view or abstract ideas. The topic should be chosen to help the child comprehend a frequently occurring social situation (More, 2012). Stories should be written with the child's intellectual capabilities in mind so they will understand what they are supposed to do (Quilty, 2007). Coupled with a well-written story, comprehension leads to a positive change in the child's targeted behavior (More, 2012).

There are several criteria to write a quality Social Story™. The 10 criteria were first defined in 1991 by Carol Gray, and later clarified more completely (Gray, 2004). The story should possess a positive tone to explain the social situation, and the topic needs to be stated clearly with a body and conclusions that follow. The story should answer who, what, when, where, and how the behavior or action should be accomplished. The story needs to be written using a first or third person perspective that is enriched with positive language. Six types of sentences (descriptive, perspective, affirmative, cooperative, directive, and control) are used in conjunction with the Social Stories™ Formula. The story is written with the individual's interests and abilities in mind. Illustrations are included on the pages, and the pictures should be

meaningful to the individual using the story. Finally, the title appropriately describes the targeted behavior (Gray, 2004).

Originally, a Social Story™ was composed of four basic types of sentences: descriptive, perspective, affirmative, and directive (Gray, 2004). Descriptive sentences provide factual information to the student, a perspective sentence presents information about thoughts and emotions, and an affirmative sentence is used to encourage the reader. Finally, Gray (1995) urged the inclusion of a directive sentence to provide instruction to the reader. In 2000, Gray added two additional sentence types to her Social Story™ outline. A control sentence was added to include analogies, which aid in the explanation of the targeted situation; a cooperative sentence was used to specify who can help the reader if they need support (Gray, 2000). The sentences used within the Social Story™ follow the Social Story™ Formula which states that for every directive sentence, two descriptive sentences should be present (Gray, 2004). This creates a functional, well-written story.

Once the story is written, the presentation of the story can affect how the individual responds (Kokina & Kern, 2010). More (2012) and Gray (2004) explained the importance of using photographs on each page because pictures add clarity to what the individual is expected to learn from the story. In addition, supplemental drawings, objects, photographs, or a Power Point presentation can enhance the Social Story™ (Gray, 2004; More, 2012). Kokina and Kern (2010) noted that videos, computer stories, and music have also been researched as presentation models. More (2012) stressed the importance of incorporating the individual's cultural background into the story to facilitate generalization in various environments. Gray (2004), Kokina and Kern (2010), and More (2012) explained that the presentation method should be motivating to the

individual receiving the intervention. The goal of a Social Story™ format is to provide an effective therapy tool (Gray, 2004).

Social Stories™ and Children with Autism

Social Stories™ were designed for children with autism; therefore, the majority of research on Social Stories™ has involved children with a diagnosis of Autism Spectrum Disorder (ASD) ranging in age from 3 to 13 years of age (Kokina & Kern, 2010). Typically the research is conducted in a case study manner; significant results have been found when stories are implemented this way. Kokina and Kern (2010) explained in a meta-analysis that studies have taken place in educational or home settings including children with varied levels of severity of ASD.

School age children. Research has indicated that Social Stories™ are effective in improving social skills and decreasing negative behaviors for children diagnosed with ASD. A study by Quirnbach, Lincoln, Feinberg-Gizzo, Ingersoll, and Andrews (2009), examined the use of Social Stories™ to increase game playing skills with 45 children diagnosed with ASD ranging in age from 7 to 14 years. This study included a comparison of standard and directive Social Story™ formats, assessment of generalization and maintenance skills, and identification of prerequisite skills needed to benefit from Social Stories™ intervention. Participants in the study were administered the *Autism Diagnostic Observation Schedule (ADOS)* to determine the presence or absence of autism, and the *Wechsler Intelligence Scale for Children- Fourth Edition* to document verbal IQ. Children were required to possess a first grade reading level as determined by the *Peabody Individual Achievement Test-Revised (PIAT-R)* Recognition and Reading Comprehension subtest. The children were read either a directive or standard story. A standard story used one directive sentence for three to five descriptive or perspective sentences.

Directive stories used a higher ratio of directive sentences. Then the participants were escorted to the game room where a researcher was present to play no more than three games during a trial. The intervention was completed over the course of two days; five trials were completed on each day. Each trial targeted a specific social skill (i.e., greeting, requesting to play, asking if someone wanted to play, accepting what the researcher had chosen to play, and generalization). The last trial was the generalization trial to see if the skills learned from the story and hands-on learning could be applied. The second day of intervention took place a week later. Results indicated that generalization occurred when the directive and standard stories were utilized, regardless of the age of the participants. Children who received either the standard or directive Social Story™ showed higher game play skills, maintained the skills, and showed improvement across trials. However, those participants with diminished skills in verbal language benefited less from Social Stories™ because of an inability to comprehend and apply the story. The positive changes evidenced in the experimental group were not present in the control group. Verbal comprehension was a significant contributor to game play skills, including the evidence that those with higher verbal scores made greater improvement. Therefore, Social Stories™ were effective for learning game playing skills for participants with good verbal comprehension skills (Quirnbach et al., 2009).

Ozdemir (2008) found several benefits in using Social Stories™ to decrease disruptive behavior at lunch time. The study involved three children with autism between the ages of 7 to 9 years with a multiple base-line design that used Social Stories™ as the only type of intervention. The stories were read twice a day and targeted behaviors included using a quieter voice, sitting correctly in a chair, and waiting in line during lunch. Data collection was recorded by using 15 second intervals during 20 minutes of daily observation. The results showed that the three

students decreased disruptive behaviors, and the target of positive behaviors were maintained after the completion of the Social Stories™ intervention.

Preschool children. Crozier and Tincani (2007) studied the prosocial behavior of preschool children with ASD ranging in age from 3 to 5 years. The study took place in a university preschool classroom, and each student had a one-on-one aide. Data was collected in each child's classroom following an individual reading of the Social Story™ for 10 minutes. For all three children involved in this study, gains were made in the targeted behaviors of sitting, providing conversation during meals, and playing in a positive manner. The behaviors returned to the baselines once the study concluded. Three limitations to this study were discussed. The first was that the researcher was not a staff member at the preschool. This may have caused a change in the children's behavior because data was collected by an unfamiliar person. The second limitation showed the need for the story to remain a part of the individual's life until the change to the targeted behavior becomes ingrained. The third limitation demonstrated the necessity for an oral prompt to remind the individual about the targeted behavior (Crozier & Tincani, 2007). The limitations in this study illustrated the need to establish controls to promote generalization. Intervention is only effective when the implementation transfers beyond the treatment session.

Meta-analysis of Social Stories™. Kokina and Kern (2010) conducted a meta-analysis of 18 research articles focusing on the effectiveness of Social Stories™ intervention. The 18 studies were of a single subject design, involved individuals with ASD from the age of 3 to 15 years, and only used Social Stories™ during treatment. The percentage of non-overlapping data (PND; i.e., a way to convert scores from several studies into a general format) was used to compare variables (i.e., study methodology, intervention characteristics, and participant

characteristics) in order to form conclusions. Results revealed that the average PND score for studies reviewed was 60%. However, 70% was the value needed to be effective. Thus, “[r]esults of this investigation confirmed previous findings regarding the questionable effectiveness of Social Stories [™] interventions for students with ASD” (Kokina & Kern, 2010, p. 822). However, there were intervention characteristics that led to higher PND scores, including: motivation of the child, targeting unwanted behaviors rather than social skills, intensity of sessions, a general education environment as opposed to self-contained settings, and use of comprehension checks. Also, the choice of presentation led to differing PND scores. For example, un-illustrated books had depressed PND scores while illustrated books and books with a musical component produced higher PND scores. (Kokina & Kern, 2010)

The participant characteristics showed differences in effectiveness with relation to cognitive and reading abilities. Children with lower cognition had a more substantial change in behavior than those of above average or average intelligence. Those with effective expressive communication skills yielded higher success when Social Stories™ were used to address behaviors. Children with Asperger Syndrome and Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS) did not display as significant results as children with low-functioning ASD. Kokina and Kern’s (2010) findings reflected the results from Quirnbach’s et al. (2009) study by showing lower effectiveness in children who do not meet typical levels of functioning. Children with reading difficulties demonstrated a slightly greater effect than those who had higher literacy skills. The findings concluded the following: (1) that the effect of Social Stories™ should continue to be researched, and (2) environment, literacy, cognitive development, frequency of exposure to the story, format of presentation, diagnosis of the

individual, and comprehension of the story were important factors in the studies that were compared (Kokina & Kern, 2010).

Social Stories™ and Typically Developing Children

There are few studies that focus on the effectiveness of Social Stories™ involving young children who are not diagnosed with ASD. Whitehead (2007) investigated the use of Social Stories™ with typically developing children in elementary school. The findings suggested that the eight students included in the study expressed differences in opinions with regard Social Stories™. The students, whose stories promoted prosocial behaviors, felt that the stories were easy to read, but that remembering to read the story was difficult, and the book took away free time. All but one student liked that the stories highlighted positive skills or attributes the student possessed. The participants commented that they felt special, important, and knew that the teacher wanted to help them because stories were made for them. The researchers also found that if the participant was able to connect the story to a real-life situation, the story was more effective, suggesting that comprehension of the story was crucial to successfully changing behavior. (Whitehead, 2007)

Whitehead's (2007) study was congruent with the findings of Toplis and Hadwin (2006). Toplis and Hadwin (2006) researched the effectiveness of Social Stories™ in children who displayed behavioral problems at lunchtime during school. The study used individualized Social Stories™ that were not available during the first and third phases of the experiment. The second and fourth phases allowed the participants to read the story once a day before lunch, and the students could read the story on their own at any time. The study lasted 18 days, and each day the participants' behaviors at lunch were rated on a scale from two to zero. A two indicated that the child needed no assistance during the lunchtime routine, whereas a zero showed that the child

needed to be physically placed in the cafeteria by a teacher. The results showed that the participants had difficulty applying the story to the situation in the cafeteria, however, progress was made with three of the five children (Toplis & Hadwin, 2006). The researchers hypothesized that if a focus on perspective was taken, then the children could generalize and connect the story to other situations. Results suggested that Social Stories™ were effective tools of intervention for typically developing children, but acknowledged that more research in the area needs to be completed (Toplis & Hadwin, 2006).

Benish and Bramlett's (2011) research was among the first studies to provide evidence that Social Stories™ can be used to target behaviors in typically developing children. The study's main objective targeted decreasing aggression and increasing positive peer interactions. Instruments used included the Behavior Assessment System for Children-2 (BASC-2), Teacher Rating Scale (TRS), and the Developmental Indicators for Assessment and Learning (DIAL-3). Teachers were trained on how to follow Gray's guidelines on Social Stories™, and each story included comprehension questions at the end. Observations were taken for 30 minutes every day by the research assistants and a daily checklist was created for the teachers to follow to maintain consistency. Observations and questionnaires were evaluated by the amount of change, overlaps in data, and trends of the data. Research showed that only one of the three participants achieved the desired behavioral response to the Social Story™. The other two participants made improvements while the intervention was in place, but the effects quickly diminished after termination of the study (Benish & Bramlett, 2011).

The limitations of Benish and Bramlett's (2011) study are similar to those of Crozier and Tincani's (2007) study. While each of these studies incorporated pre-school children, neither

study had controls or routine reinforcement in place (Benish & Bramlett, 2011; Crozier & Tincani, 2007).

Rationale

Children are held to societal standards with regard to social skills at an early age. Development of these skills occurs throughout childhood and into adolescence (Beauchamp & Anderson, 2010). By the preschool age, children are expected to understand how to start and maintain conversations while reading nonverbal language cues, such as those related to personal space (Kaderavek, 2011). If pragmatic skills do not develop, there is likely to be an increase of behavioral problems (Beauchamp & Anderson, 2010). In order to counteract the behaviors, teaching strategies may be implemented to help modify the children's behavioral problems. An enriched environment can strengthen social skills at an early age, and therefore, decrease unwanted behaviors. A literacy-based approach has used characters in a book to objectively show why a behavior was socially unacceptable (Smith, 2009). Targeting social skills in a group preschool setting has also been shown to have a positive impact on managing behavior (Guglielmo & Tyron, 2001; Han et al., 2005).

The majority of Social Story™ research has focused on the autism population, and has found conflicting results regarding the effectiveness of the stories (Kokina & Kern, 2010). However, the majority of studies found Social Stories™ to be an effective tool with participants in the age range of 5 to 9 years (Kokina & Kern, 2010). Few studies have used Social Stories™ with the preschool population (Benish & Bramlett, 2011; Crozier & Tincani, 2007). Thus, it would be beneficial to study groups of individuals who are not diagnosed with ASD to determine the potential for Social Stories™ effectiveness with other age groups (Benish & Bramlett, 2011; Whitehead, 2007).

The purpose of this study was to examine the effectiveness of Social Stories™ for improving behavior of typically developing preschool children ranging in age from 4 to 5 years. To address some of the limitations discussed in previous research (Benish & Bramlett, 2011; Toplis & Hadwin, 2006), a control group was established, the main researcher was a staff member at the preschool (Crozier & Tincani, 2007), and the sample size was larger than most previous case studies (Toplis & Hadwin, 2006). Guidelines for implementation of stories, and documentation of occurrences of target behaviors were controlled during the course of the study (Benish & Bramlett, 2011; Crozier & Tincani, 2007). It was hypothesized that Social Story™ implementation would result in a decrease in negative behaviors (e.g., hitting other children in the class) in preschool children.

The following research questions will be addressed in the study:

- (1) Are Social Stories™ an effective behavioral intervention technique (i.e., to decrease inappropriate behaviors) for typically developing preschool children?
- (2) Is the frequency and duration of targeted behaviors maintained eight weeks post-intervention?

Chapter III

Methods

Research Design

The purpose of the study was to determine the efficacy of Social Stories™ in managing behaviors of typically developing preschool children. The design of the study was a between subjects comparison of the experimental group (Social Stories™) compared with the control group (no Social Stories™).

Participants

This project was completed in conjunction with a private daycare in central Illinois, which provides care for children from infancy through approximately 6 years of age. Children in the preschool classroom, 4 to 5 years of age, were participants in the study. Consent forms (Appendix A) were distributed in accordance with Institutional Review Board (IRB; Appendix B) guidelines, and parents returned the forms to participate in the study. The children ranged in age from 4 years to 5 years, 5 months at the beginning of the study, and had no diagnoses of any known disabilities. Eight males and three females participated. Demographics are summarized in Table 1.

Procedures

Pre and post intervention assessment. The primary classroom teacher and the primary investigator (who was also a teacher in the preschool classroom) completed the pre- intervention assessment (see Appendix C) together, which was modified from the Westchester Institute for Human Development Behavior Rating Scale (2004). During classroom observations, the teachers identified specific behaviors that were a concern for each child and were displayed on a regular basis. Based on the severity, frequency, and duration of the behaviors identified, behaviors

having the most negative impact on classroom performance were chosen for analysis. The severity level was used to rate the amount of interference that the behavior had on educational progress. Mild behavior was defined as interference 25% of the day; moderate behavior interfered 50% of the day, severe behavior interfered with 75% of the day, and profound interfered the entire day. After the pre-intervention assessment was completed, the teacher and primary researcher separated children with similar target behaviors so that comparable participants were represented in both the intervention and control groups. The rating scale was also used for post-intervention qualitative analysis of the teacher's perceptions of the change in participant's behavior (Appendix D).

Table 1. Participant Demographics

Participant	Gender	Age	Control or Experimental
A	Female	5;5	Experimental
B	Male	4;5	Experimental
C	Male	4;2	Control
D	Male	4;9	Control
E	Male	4;3	Control
F	Female	4;8	Control
G	Male	4;3	Experimental
I	Male	4; 0	Experimental
J	Male	5;2	Control
K	Male	5;3	Control
L	Female	5;3	Experimental

Target behaviors. Children in the experimental group received a Social Story™ that focused on the target behavior selected by the teacher and primary investigator. The stories targeted using nice words, controlling frustrations, focusing when given directions, using nice hands/feet, tattling, controlling crying, and toilet training (see table 2).

A variety of target of behaviors were also identified for the children in the control group (see table 3). These included focusing when given a direction, using nice words, tattling and

controlling crying. Although the children in the control group did not receive Social Stories™, their behaviors were monitored throughout the study for any changes in frequency, duration and severity.

Table 2. Target behaviors for experimental group

Participant	Target Behavior
A	Using nice words
B	Controlling Frustrations
G	Toilet Training
I	Using nice hands
K	Using nice hands

Table 3. Target behaviors for control group

Participant	Target Behavior
C	Focusing when given directions
D	Using nice words
E	Tattling
F	Controlling crying
J	Tattling
L	Tattling

Social Story Design. The stories were written by the primary investigator following Carol Gray's (2004) guidelines. The stories positively represented the social situation with a clearly stated objective. They were written in the first person perspective, and included the six types of sentences that fulfill the Social Story™ Formula. To make the stories more visually stimulating and meaningful to the children, color pictures were used.

Intervention Phase. The stories were given to the primary teacher. The primary teacher read the story once in the morning after art, and the primary investigator read the stories once in the afternoon after nap time to each child in the experimental group. The teacher logged the time and date that the story was read to the participant to ensure treatment fidelity (See Appendix E). After each reading, the children were asked what the book was about, and what they were going to try to do. These questions aided in comprehension of the stories. By the third week, the

participants were encouraged to read the story to the teacher. The teacher continued to ask comprehension questions after the child had read the story.

Behavior observations. Baselines of the participants' behavior were taken the week prior to the distribution of the stories. The baseline measures were taken for both the control group and experimental group. A medial set of data was taken during the third week. After six weeks, a final set of data was collected. An eight week post-intervention probe was completed to determine if the behavior increased or continued to decrease once the stories were no longer read every day.

The primary investigator took quantitative data for four hours on each child during the initial, medial, final, and post intervention weeks. The frequency and duration of the targeted behavior were recorded on a behavior observation log (See Appendix D). The children knew the primary investigator because the primary investigator was the participants' afternoon teacher. This allowed the children to behave in a typical manner, as compared to when a visitor was in the room. When the primary investigator saw a participant display the inappropriate behavior, timing would begin. Once the behavior stopped and the consequence (such as time out) had finished, the time was recorded in minutes and seconds. A token system was used in the classroom previous to this study. The tokens were moved up or down depending on the child's behavior during the day. At the end of the week, the child would earn a prize if the object had moved up five spots. The visual representation allowed the child to visually comprehend the consequences of their behaviors.

Data Analysis. A paired samples t-test compared the data from initial and final observations of each group (experimental group and control group) to see if significant change in behavior occurred in frequency or duration. Qualitative data was compared by using the pre and

post intervention rating scale based on teacher's perception of change in behavior. This was analyzed on an individual basis for frequency, duration, and severity. The percentage of decrease and an average of the percentage of decrease were calculated to compare the groups as a whole.

Chapter IV

Results

The purpose of this study was to determine the efficacy of Social Stories in reducing behaviors that interfere with classroom performance for typically developing preschool children. Data was gathered from an experimental and control group and analyzed to document changes in target behaviors.

Frequency and Duration of Behaviors

Initial, medial and final frequency and duration of occurrences for target behaviors can be seen in Figure 1 and Figure 2. Four of five participants in the experimental group demonstrated a decrease in frequency of behaviors across the three time points. The fifth participant's target behavior decreased in frequency from the first to the second time point, but frequency increased at the final time point. In the control group, three out of six participants decreased the frequency of negative behaviors. Duration of the target behavior decreased for the entire experimental group, but decreased for only three of the control group participants.

Table 4. Target behaviors for experimental and control groups.

Participant	Experimental	Participant	Control
A	Using nice words	C	Focusing when given directions
B	Controlling Frustrations	D	Using nice words
G	Toilet Training	E	Tattling
I	Using nice hands	F	Controlling crying
K	Using nice hands	J	Tattling
		L	Tattling

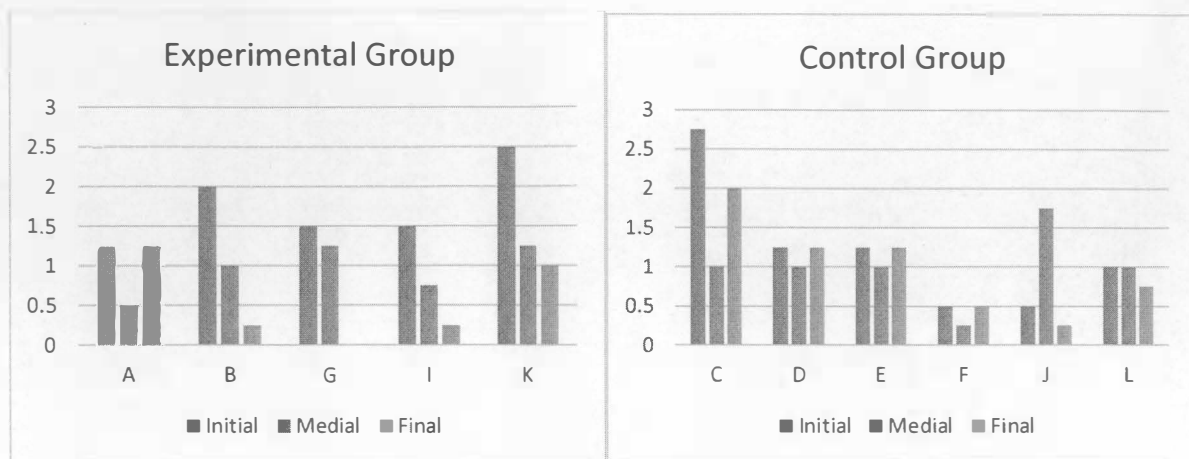


Figure 1. Frequency of target behaviors for participants in the experimental and control group.

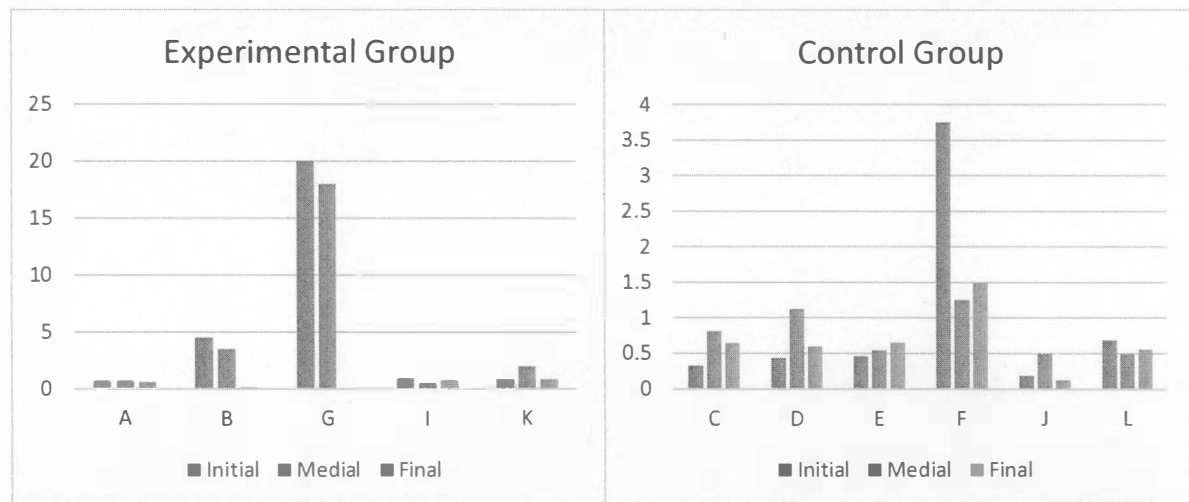


Figure 2. Duration of target behaviors for participants in the experimental and control group.

A paired samples t-test was conducted to determine if there was a significant change in frequency for the experimental group when comparing initial observational data to final observational data (See table 5). The results indicated that the change in frequency, $t(4) = 3.868$, $p < .05$ was statistically significant.

Table 5. Statistical analysis of frequency of behaviors for experimental group

Experimental Frequency	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	t	df	Sig. (2-tailed)
Pair 1 TotalFreqInitial- TotalFreqFinal	4.800	2.775	1.214	Lower 1.355 Upper 8.245	3.868	4	.018

The paired t-test was completed for the control group to compare initial frequency to final frequency of target behaviors. (See Table 6). The results were not statistically significant, $t(5) = 1.746, p > .05$

Table 6. Statistical analysis of frequency of behaviors for control group

Control Frequency	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	t	df	Sig. (2-tailed)
Pair 1 TotalFreqInitial- TotalFreqFinal	.833	1.169	.477	Lower -.394 Upper 2.060	1.764	5	.141

A paired samples t-test was conducted for the initial and final durations of the target behaviors of the experimental and control groups. Neither the change in the experimental group's duration (Table 7), $t(4) = 1.411, p > .05$, nor the control group's duration (Table 8), $t(5) = .64, p > .05$ were statistically significant.

Table 7. Statistical analysis of duration of behaviors for experimental group

Experimental Duration	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	t	df	Sig. (2-tailed)
Pair 1 TotalDurationInitial- TotalDurationFinal	32.283	51.154	22.877	-31.233 95.7999	1.411	4	.231

Table 8. Statistical analysis of duration of behaviors for control group

Control Duration	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	t	df	Sig. (2-tailed)
Pair 1 TotalDurationInitial- TotalDurationFinal	1.04	3.98	1.63	-3.14 5.22	.6	5	.550

The percentage of decrease was calculated for the experimental and control groups in regards to frequency and duration (See Figures 3 and 4). The percentage of decrease was calculated by subtracting the initial frequency from the final frequency, dividing by the initial frequency, and multiplying by 100. For the experimental group, participant A made no change in the frequency of the target behavior. Participant B decreased behavior by 87.5% while participant G decreased by 100%. There was an 83.3% decrease by participant I and participant K showed a decrease of 60%. Three participants in the control group also showed a decrease in the frequency of behaviors. Participant C decreased by 27.2%, Participant J showed a decrease of 50%, and participant L decreased the target behavior by 25%. However, participants D, E and F did not display a decrease in target behaviors.

The percentage of decrease was calculated for the change in duration. The experimental group's percentages of decrease were as follows: Participant A 0%, participant B 98.6%, participant G 100%, participant I 45.45%, and participant K 40.59%. The control group displayed an increase in the target behavior's duration for participants C (51.22%), D (38.46%), and E (39.29%). Participant F displayed a decrease of 60% while participant J decreased by 33.3%. There was a decrease of 18.18% for participant L.

The average of the percentage of decrease was calculated by adding each participant's percentage of decrease and dividing it by the number of individuals in that group. The average

percentage of decrease for frequency for the experimental group was 66.17% and for the control group, the average decrease was 12.88% (See Figure 3). The average percentage of decrease for duration for the experimental group was 60.9% while the control group displayed an increase of 2.19% (See Figure 4).

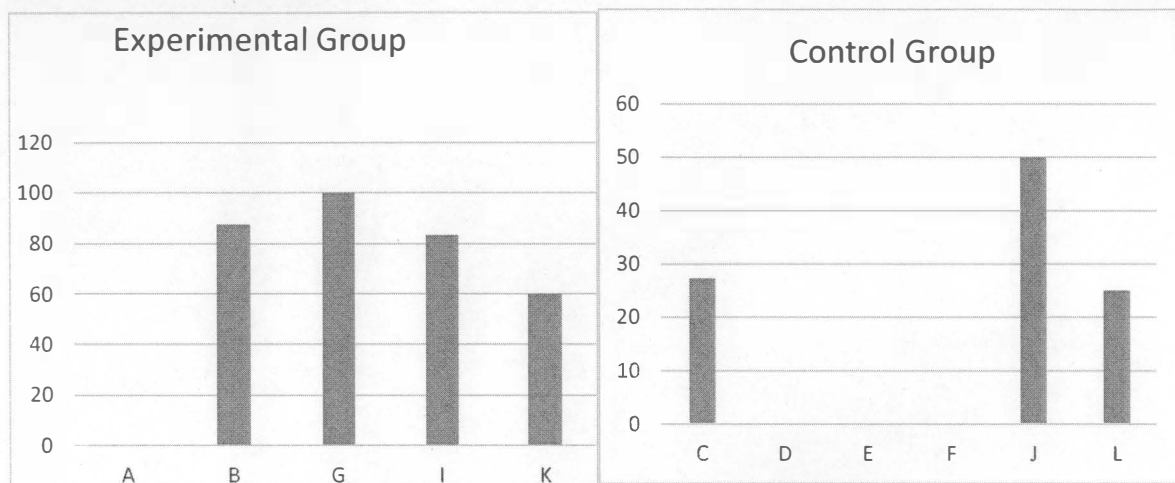


Figure 3. Percentage of decrease of frequency for participants in the experimental and control groups

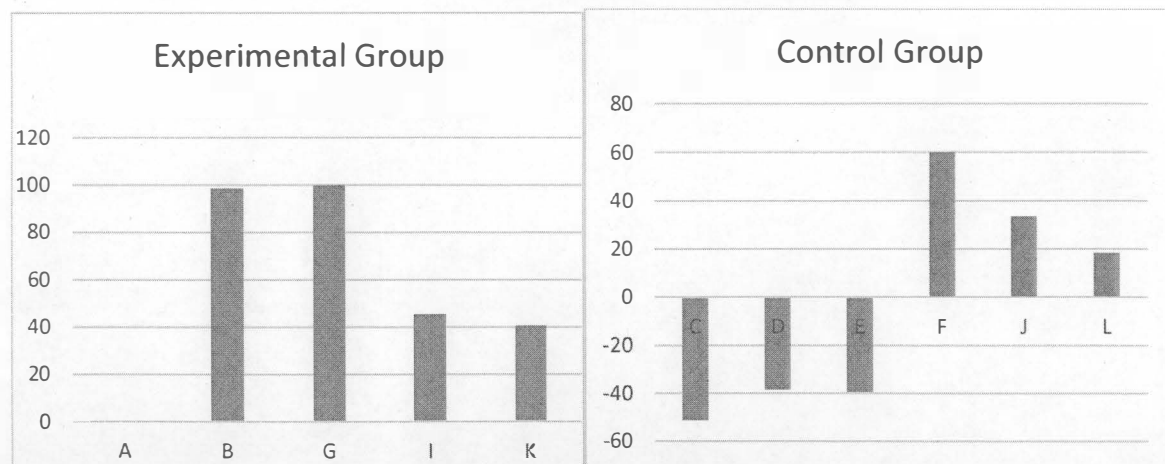


Figure 4. Percentage of decrease of duration for the participants in the experimental and control groups.

Descriptive Data

Pre- and post-intervention ratings were administered using the Westchester Institute for Human Development Behavior Scale (See appendices C&D) to obtain the teacher's and primary investigator's perceptions of changes in target behaviors. Ratings were completed jointly for each individual in the study (See tables 9 and 10). Frequency was based on occurrences throughout the school day, while duration was calculated for average length of each incidence.

Table 9. Teacher Rating Scale for the Experimental Group

Participant	Behavior	Initial Frequency	Initial Duration	Initial Severity	Post Frequency	Post Duration	Post Severity
A	Improper use of Words	2 times a day	.5 minutes	Mild	1 times a day	1 minute	Mild
B	Controlling Frustration	20 times a day	10 minutes	Profound	1 a day	5 minutes	Mild
G	Toilet Training	2 a day	20 minutes	Mild	3 a day	20 minutes	Moderate
I	Improper use of Hands	10 times a day	2 minutes	Mild	2 times a day	2 minutes	Mild
K	Improper use of hands and feet	20 times a day	2 minutes	Moderate	7 a day	3 minutes	Mild

Table 10. Teacher Rating Scale for the Control Group

Participant	Behavior	Initial Frequency	Initial Duration	Initial Severity	Post Frequency	Post Duration	Post Severity
C	Focusing when given a direction	50 times a day	.16 minutes	Profound	25 times a day	.5 minutes	Moderate
D	Improper use of Words	25 times a day	.5 minutes	Moderate	15 times a day	.5 minutes	Moderate
E	Tattling	10 a day	2 minutes	Mild	1 a day	1 minute	Mild
F	Controlling Crying	10 a day	10 minutes	Mild	1 a day	5 minutes	Mild
J	Tattling	5 times a day	.33 minutes	Mild	1 time a day	.5 minutes	Mild
L	Tattling	20 times a day	.5 minutes	Mild	5 a day	.33 minutes	Mild

The teacher’s perspective of each of the experimental group participants was that the frequency of behaviors decreased except for participant G. Participant A started at 2 occurrences daily and decreased to once a day. Participant B’s initial frequency was 20 and decreased to one time a day. Participant G began with 2 behaviors and increased to 3 behaviors a day. Participant I was initially at 10 behaviors and decreased to 2 times a day. Participant K began with 20 occurrences a day and decreased to 7 behaviors (see Figure 5).

The teachers’ perceptions of frequency of behaviors for the control group also decreased. The teachers estimated that participant C began with 50 occurrences and ended with 25. Participant D showed behaviors 25 times a day and decreased that amount to 15. Participants E and F began with 10 behaviors daily and decreased the frequency to once a day. Participant J tattled 5 times a day initially and ended by tattling once a day. Tattling occurred 20 times a day for participant L and decreased to 5 times a day (see Figure 5).

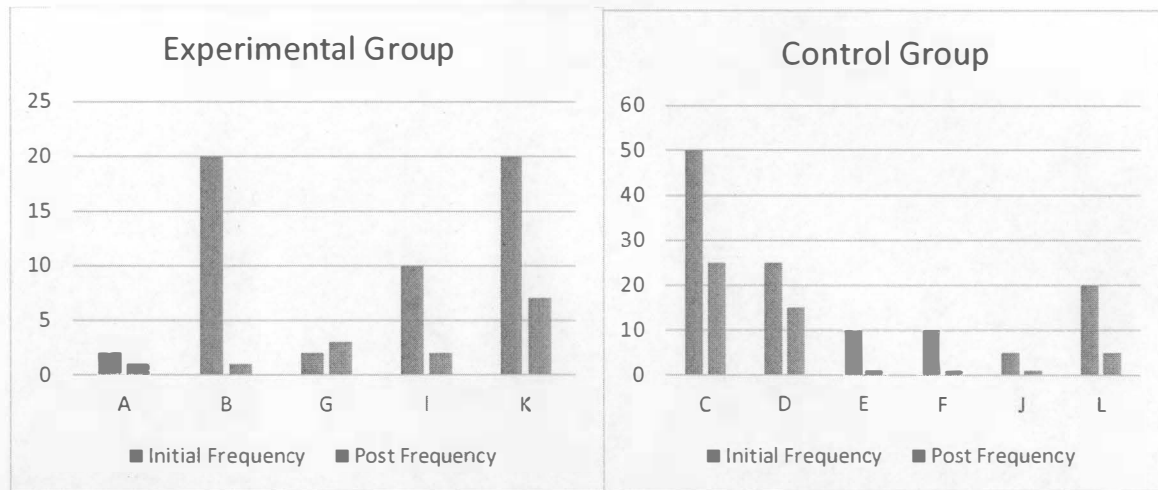


Figure 5. Initial and post frequency teacher ratings of the participants for the experimental and control groups.

Participant A and K had an increase in the duration of behaviors. Participant A began at 30 seconds and increased to 1 minute, and participant K started at 2 minutes and increased to 3

minutes. Participant B decreased from 10 minutes to 5 minutes. Both participants G and I remained the same throughout the course of the study from the view point of the teacher (see Figure 6).

Participants C and J increased the duration of the target behavior while participant D remained the same. Participants E, F, and L decreased the duration of the behaviors. In both the experimental and control groups, the frequency and duration decreased while the severity did not change dramatically (see Figure 6).

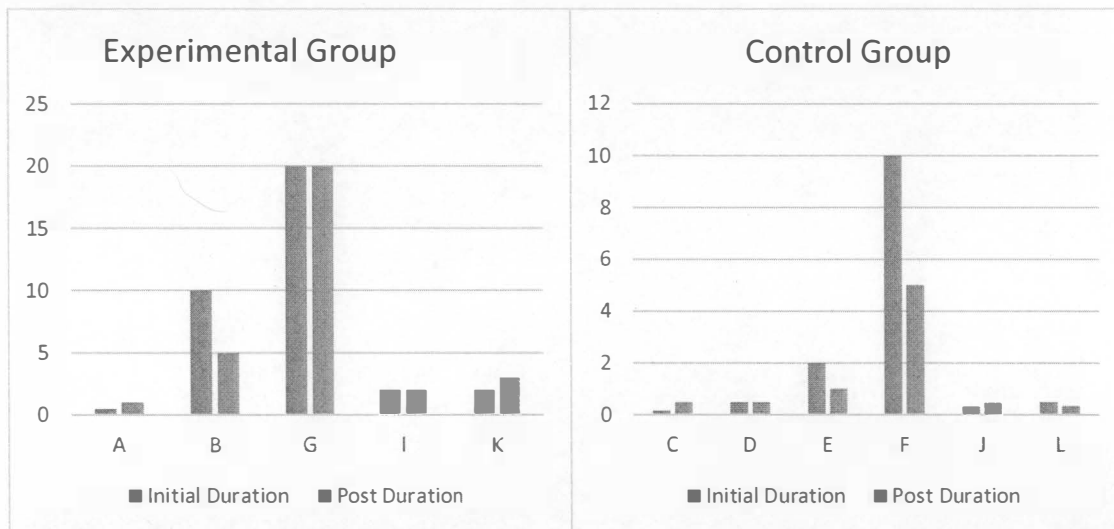


Figure 6. Initial and post duration teacher ratings of the participants in the experimental and control groups.

Maintenance of Target Behaviors

Eight weeks post intervention, observations of target behaviors were conducted to examine the extent to which children maintained the frequency and duration of target behaviors. (Figure 7). During this observation, 3 students from the experimental group (Participant A, B, and G) were present; 3 student from the control group (Participant D, E, and J) were present. The experimental group showed an increase of behaviors for participants B and G. Participant B increased the frequency 100% and duration doubled. For Participant G both frequency and

duration increased by 100%. Participant A showed a decrease of 80% for frequency and 78% decrease for duration. The control group displayed increases and decreases as well. Participant D increased in frequency by 33.36%, but decreased duration by 51%. Participant E Decreased behaviors by 80% for frequency and 61.54% for duration. Participant J increased both duration and frequency. Frequency was 33.3% and duration increased by 300%.

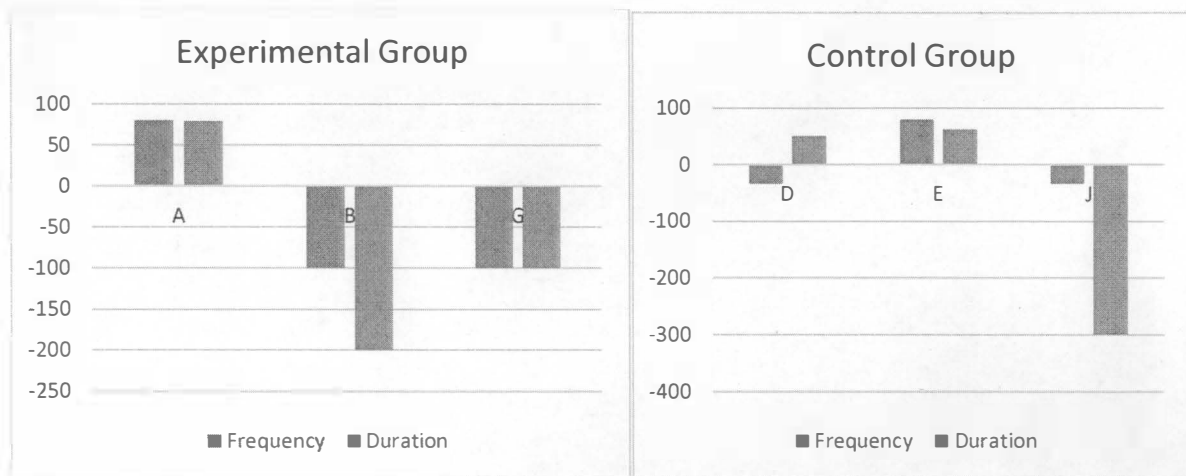


Figure 7. Percentage of decrease 8 weeks post intervention of the participants for the experimental and control group.

Chapter V

Discussion

Frequency and Duration of Behaviors

Social Stories™ were beneficial to the participants in the experimental group. The change in frequency for the experimental group was statistically significant (i.e., participants significantly reduced the frequency of problematic behaviors), however change in duration was not significant. Reduction in frequency of the behavior may be related to the child's ability to incorporate information from the story into his or her pragmatic reasoning, allowing the child to inhibit the target behavior. Alternatively, the stories may spotlight the target behavior and provide the child with a strategy to inhibit their typical response. Coupling the scenario with natural maturation, they were able to stop the behavior before it began.

When children were unable to suppress the target behavior, duration remained fairly constant. This could be related to the length of the negative consequences that the child would experience as a result of the behavior. Following a negative behavior, the preschool teacher moved the child's token down on a reward chart or gave a timeout. Duration was timed for each child from the time the behavior began, to when it finally terminated and the child was back in the regular routine. The duration of the time out was included in the duration of the behavior. This, in turn, affected data for the duration of the target behaviors. However, even though duration was not statistically significant, there was an average percent of decrease of 60.9% for the experimental group. The control group saw an average percent of decrease of 2.19%. This suggests that the Social Stories™ had a positive effect in decreasing the duration of the negative behaviors.

The preschool teachers (i.e., the lead teacher and the primary investigator) did not report drastic change post intervention on the Weschester Rating Scale (2004). It should be noted that the teachers did not specifically record each instance, but calculated an estimation at the end of the day when the rating scale was completed. The teacher and primary investigator reported that the stories impacted the children positively, but when looking at the classroom as a whole, behaviors were still present. When looking subjectively at each child, they recognized that there were changes but felt the participants developed other new negative behaviors as the target behaviors decreased. Another reason the change was subjectively judged to be minimal could be that even though the frequency had diminished, the duration did not. They may have perceived a greater change if both the duration and frequency changes were significant.

The behaviors that were most effected by social story intervention were those that showed aggression. A greater decrease in negative behaviors was seen for those stories that discussed using nice hands instead of hitting and stories that addressed controlling frustrations. Social stories focusing on less aggressive behaviors, such as using nice words (i.e. decreasing use of negative language), did not appear to carry-over into the daily routines as well. When a child exhibits hitting or kicking or emotional outbursts, there are more severe repercussions involved because pain is typically inflicted on people or property. The stories presented a concrete model for the child to follow when aggression was mentioned because the book stated that they should walk away or come talk to a teacher. Stories focusing on using nice words were less explicit and vague by stating that they should use nice words when playing with their friends. This may be why the aggressive tendencies were suppressed more effectively.

Relationship to Literature

Ozedmir (2008) studied the efficacy of Social Stories™ in a lunchtime setting and found that the participants were able to adhere to acceptable behaviors. The stories involved sitting in a chair, standing in line, and conversing quietly. The stories were specific and follow the trend seen in this study: by giving a more specific instruction, a child was able to integrate that information into daily life. This was seen in the participants in the experimental group of the current study who were able to decrease the amount they hit or kicked others. Students who were able to have a concrete example of what to do showed diminished occurrences in the target behavior. This was also noted in Whitehead's study in 2007. Whitehead (2007) reported that when a child comprehends what they should be doing, they will follow through. Participants I and K reduced their aggressive behaviors greatly because they were told exactly what to do in their story. Participant A was given a less specific explanation of how to use nice words with their friends.

Benish and Bramlett (2011) showed that the aggressive behaviors diminished during the intervention, but returned when intervention was complete. Similar effects were shown in this study. Eight weeks after intervention was terminated, the participants who were present had returned to averages that were similar to the baseline. The dramatic increase in negative behaviors may have been attributed to the absence of the story in daily routine. The children may have needed the twice daily reminder in order to carry out the appropriate pragmatic response. Since the maintenance data was collected in the summer, the amount of classroom structure was diminished because school was no longer in session. This may have been another factor that contributed to the participant's forgetting the ideals expected of them. Also, a few participants

had returned from vacations or were going on vacation, which might have caused changes in behavior.

This study utilized a control group, which was utilized in only a few previous studies (Quirnbach et al., 2009). In addition, the token system was beneficial because the children were able to comprehend cause and effect of their negative or positive behaviors.

Limitations

One limitation of the study was the schedule for data collection. The data was taken on four different occasions. It would be beneficial to have more frequent weekly observations. With more frequent observations, precise measures could be made as to how long intervention should occur before behavior changes are documented. In addition, planned observation times in the mornings would allow for consistent context for data collection. For example, children may attend to structured learning time better than free play activities. Children are more likely to be more on task in the morning than in the afternoon. Additionally, as noted in Whitehead's (2007) study. The books should have had told the child exactly how to navigate the situation with a concrete example in this study.

Another limitation was the teacher's rating criteria. Ratings were primarily subjective. More precise records of frequency and duration target behaviors by the teacher would have helped to better track the changes of the participants for the rating scales. The teacher's records were based on close estimates, and did not always reflect precise measures. This could have provided the teacher with a more objective view and allowed the teacher to see the positive changes that the Social Stories™ provided.

Future Research

Future research could focus on increasing measurements to include not only a decrease in negative behaviors, but an increase in positive actions by both the control and experimental groups. Also, the generalization of the behavior could be studied to see if the decrease in the negative behavior or the increase in the positive behavior was generalized to other situations, such as home and other structured activities (e.g., dance, sports, etc.). This could be achieved by involving parents and caretakers in monitoring the target behaviors.

Conclusions

In conclusion, this study demonstrated that Social Stories™ are effective for decreasing negative behaviors in typically developing preschool children. Some of the participants responded to the stories better than others, but as a group, a percentage of decrease was seen in the experimental group. The change in frequency was statistically significant, as shown in a paired samples t-test. The duration was not statistically significant, but the target behaviors did decrease in duration. The teacher and primary investigator's perception was that the target behaviors decreased due to the stories, but it was difficult to gauge the extent, due to the qualitative nature of the informal observations. However, the percentage of decrease and the paired samples t-test results demonstrated that Social Stories™ are effective for reducing negative behaviors.

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Appendix A

Initial Survey

Student: _____ Date: _____
--

Behavior: Using behavioral terms, describe the behaviors of concern.

Frequency: Provide actual frequency for a given unit of time
(e.g. 15 times/day, 2-3 times/week)

Duration: Provide average length of occurrence for each behavior (e.g. 20 seconds per episode, 2 minutes per episode)

Impact & Severity: Provide a rating for the amount of interference of educational progress including social and academic learning (e.g. no concern – behavior has no interference; Mild – behavior interferes with 25% of day; Moderate – behavior interferes with 50% of day; Severe – behavior interferes with 75% of day; Profound – behavior interferes 100% of the day)

	Behavior	Frequency	Duration	Severity
1.				
2.				
3.				
4.				

Impact: For each of the behaviors (as numbered above), check off the impact statements that apply.

Impact	1	2	3	4
Poses a physical or health risk to the individual				
Places others at risk for injury				
Causes property damage				
Interferes with learning				
Interferes with participation in school				
Interferes with participation in community				
Disrupts classroom or other school routines				
Precludes participation in less restrictive environment				
Has recently escalated in frequency or intensity				
Other:				

Conclusions: Based on this review of frequency, severity, and impact for each behavior, indicate priority of target behaviors. As needed, provide a brief rationale.

First priority behavior:
Second priority behavior:

**Appendix B
Post Intervention Survey**

Student: _____ Date: _____
--

Student Demographic Information:

Sex: M F

Date of Birth: __ - __ - __

Special Education Qualification/Diagnosis: _____

Behavior: Using behavioral terms, describe the behaviors of concern.

Frequency: Provide actual or estimated frequency for a given unit of time (e.g. 15 times/day, 2-3 times/week)

Duration: Provide average length of occurrence for each behavior (e.g. 20 seconds per episode, 2 minutes per episode)

Impact & Severity: Provide a rating for the amount of interference of educational progress including social and academic learning (e.g. no concern – behavior has no interference; Mild – behavior interferes with 25% of day; Moderate – behavior interferes with 50% of day; Severe – behavior interferes with 75% of day; Profound – behavior interferes 100% of the day)

Behavior Targeted by Intervention	Initial Frequency	Initial Duration	Initial Severity	Post frequency	Post Duration	Post Severity
1.						

Impact	Mild	Moderate	Severe	Profound
Poses a physical or health risk to the individual				
Places others at risk for injury				
Causes property damage				
Interferes with learning				
Interferes with participation in school				
Interferes with participation in community				
Disrupts classroom or other school routines				
Precludes participation in less restrictive environment				
Is an antecedent to other behavior problems				
Other:				

Appendix D

Behavior Observation

Student: _____

Behavior: _____
 ___ Baseline ___ Intervention

Observation Date: _____ Beginning Time: _____ Ending Time: _____

Number of Prompts or redirections given to address the target behavior _____

Observation Date: _____ Beginning Time: _____ Ending Time: _____

Number of Prompts or redirections given to address the target behavior _____

Observation Date: _____ Beginning Time: _____ Ending Time: _____

Number of Prompts or redirections given to address the target behavior _____

Observation Date: _____ Beginning Time: _____ Ending Time: _____

Number of Prompts or redirections given to address the target behavior _____

How to Record: Mark the occurrences and the duration (length of time) of the target behavior. Note the classroom activity occurring during the observation time.

Appendix E

CONSENT TO PARTICIPATE IN RESEARCH

Social Story Intervention for Typically Developing Pre-school Children

Your child is invited to participate in a research study conducted by Loni Berbaum and Tena McNamara, Au.D., CCC-A/SLP, from the Communication Disorders and Sciences department at Eastern Illinois University. Your child's participation in this study is entirely voluntary. Please ask questions about anything you do not understand before deciding whether or not you will allow your child to participate.

Your child has been asked to participate in this study because he or she is enrolled in a typical pre-school classroom and may have some behaviors that inhibit participation or performance in the classroom (e.g. trouble sustaining attention, difficulty controlling spontaneous actions, emotional problems, etc.). Participation in this study will help us determine if a specific intervention program (i.e. the use of social stories) is effective in decreasing these behaviors that impact school performance for children enrolled in typical pre-school classrooms who do not have a diagnosis related to autism spectrum disorder.

• PURPOSE OF THE STUDY

Social stories are short stories that utilize visual and auditory components to demonstrate how to appropriately respond in troubling social situations. Research studies have provided evidence of the effectiveness of social stories in reducing negative behaviors for children with autism; however, limited research exists on the effectiveness of social stories for children who have not been diagnosed with autism spectrum disorder. The purpose of the present study is to determine the efficacy of social stories on decreasing undesirable behaviors in children who are typically developing and are enrolled in pre-school.

• PROCEDURES

If your child opts to participate in this study, he or she may be asked to listen to a personalized social story that will be read by the teacher. The social story will be read to the participants three times throughout the school day over a six week period.

Initially, teachers will identify and rate a behavior that negatively impacts each child's classroom performance. The behavior will be rated on frequency, severity, and impact on school performance. The *Burk's Behavior Rating Scale* will be used to rate the target behavior.

Once a behavior is targeted, children participating in the study will be placed in two groups at random. Children in group one will have a social story generated for their targeted problem behavior, and the social story will be read three times per school day for six weeks. Children in group two will not receive social story intervention for the first six weeks. After the six week period, behaviors targeted for each child will be measured again for frequency, severity, and impact. Results for those children who had social stories read to them will be compared to the results of those children who did not have social stories read to them.

As a benefit, if social stories are shown to be effective, those children who did not initially receive a social story will have a story generated for their target behavior at the end of the initial six weeks.

- **POTENTIAL RISKS AND DISCOMFORTS**

There is minimal risk associated with participation in this study. However, possible short-term risks include participating in a new intervention which may fail to result in any improvement in the target behavior. There may also be the possibility that the frequency and severity of the target behavior may increase. There are no psychological risks. If your child refuses to participate when the social story is being read, it will be stopped and attempted again at a later time. Physical risk may occur if a negative behavior increases that could be potentially harmful for the participant, their teachers, and their peers. If this occurs, then the social story will be terminated immediately and the teacher will resume behavior interventions. You will be contacted immediately if this occurs.

- **POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY**

Potential benefits of participating in this study include an improvement of your child's performance in the classroom by decreasing undesirable behaviors that inhibit his or her education. When behaviors that could potentially interfere with your child's education are reduced, your child may experience greater social and academic success in school.

- **CONFIDENTIALITY**

Any information that is obtained in connection with this study and that can be identified with the participant will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of assigning unidentifiable labels for each participant to replace the use of any identifying information. All data will be kept secure in a locked file cabinet in the researcher's office, room 2203 in the Eastern Illinois University Speech-Language-Hearing clinic. Access to any paper files will be limited to the researchers, in order to verify data collection procedures and analysis. All records pertaining to this study will be retained for a period of at least three years. All files will be permanently destroyed and deleted from the computer upon completion of this time period.

- **PARTICIPATION AND WITHDRAWAL**

Your child's participation in this research study is voluntary and not a requirement or a condition for being the recipient of benefits or services from Eastern Illinois University or any other organization sponsoring the research project. If your child volunteers to participate in this study, he or she may withdraw at any time without consequences or penalties of any kind or loss of benefits or services to which your child is otherwise entitled.

- **IDENTIFICATION OF INVESTIGATORS**

If you have any questions or concerns about this research, please contact:

Tena McNamara, Au.D., CCC-A/SLP
Telephone: 217-581-8488
Email: tmcnamara@eiu.edu

- **RIGHTS OF RESEARCH SUBJECTS**

If you have any questions or concerns about the treatment of human participants in this study, you may call or write:

Institutional Review Board
Eastern Illinois University
600 Lincoln Ave.
Charleston, IL 61920
Telephone: (217) 581-8576
E-mail: eiurb@www.eiu.edu

You will be given the opportunity to discuss any questions about your rights and your child's rights as a research subject with a member of the IRB. The IRB is an independent committee composed of members of the University community, as well as lay members of the community not connected with EIU. The IRB has reviewed and approved this study.

Consent for Minors

I hereby consent to the participation of _____, a minor/subject in the investigation herein described. I understand that I am free to withdraw my consent and discontinue my child's participation at any time.

Signature of Minor/Handicapped Subject's Parent or Guardian Date

I, the undersigned, have defined and fully explained the investigation to the above subject.

Signature of Investigator Date

Appendix F
IRB Approval

February 11, 2013

Loni Berbaum
Communication Disorders and Sciences

Thank you for submitting the research protocol titled, "Social Story Intervention for Typically Developing Pre-school Children" for review by the Eastern Illinois University Institutional Review Board (IRB). The IRB has reviewed this research protocol and effective 2/11/2013, has certified this protocol meets the federal regulations exemption criteria for human subjects research. The protocol has been given the IRB number 13-039. You are approved to proceed with your study.

The classification of this protocol as exempt is valid only for the research activities and subjects described in the above named protocol. IRB policy requires that any proposed changes to this protocol must be reported to, and approved by, the IRB before being implemented. You are also required to inform the IRB immediately of any problems encountered that could adversely affect the health or welfare of the subjects in this study. Please contact me, or the Compliance Coordinator at 581-8576, in the event of an emergency. All correspondence should be sent to:

Institutional Review Board
c/o Office of Research and Sponsored Programs
Telephone: 217-581-8576
Fax: 217-581-7181
Email: eiuirb@www.eiu.edu

Thank you for your cooperation, and the best of success with your research.

Richard Cavanaugh, Chairperson
Institutional Review Board
Telephone: 217-581-6205
Email: recavanaugh@eiu.edu