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A comparison of video modeling and social stories to decrease inappropriate behaviors

Caitlin Peluszak

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**A COMPARISON OF VIDEO MODELING AND SOCIAL STORIES TO
DECREASE INAPPROPRIATE BEHAVIORS**

by

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A Thesis

Submitted to the
Department of Special Education
College of Education
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Thesis Chair: S. Jay Kuder, Ed.D.

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Abstract

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A COMPARISON OF VIDEO MODELING AND SOCIAL STORIES TO DECREASE INNAPROPRIATE BEHAVIORS

2010/11

S. Jay Kuder, Ed.D.

Masters of Arts in Special Education

The purpose of this research was to determine which type of social intervention is more efficient when comparing Video Modeling and Social Stories when attempting to decrease inappropriate social behaviors. Two children were chosen because they both displayed inappropriate mouth noises at various points throughout their time in the self contained classroom. Three baseline data collection periods were held and alternated with two intervention periods. A personalized peer modeling video and a personalized Social Story with photographs of the child was made for each child. These interventions were shown the children across separate five-day periods at a decreasing frequency, and data of the rate of occurrence of the target behavior was collected. While both methods of interventions decreased the target behavior, Video Modeling proved to be more efficient when aiming to decrease inappropriate social behaviors.

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Chapter 1

Introduction

Social skills serve children in every stage of life, from adolescence to adulthood, but are mainly observed, learned and demonstrated by young children. However, for so many children with disabilities, social skill deficits continue to hinder their ability to learn and play in the most basic of elementary school settings, even as they progress through grade school. Social skill deficits present themselves as a result of any number of disabilities. While they are most commonly linked to children with Autism Spectrum Disorders (ASD), social skill deficits are far from exclusive to this disability, and can affect children with many other classifications, such as learning disabilities (San Miguel 1996), ADHD (Chester 2005), anxiety disorders and communication impairments. These instances of social inappropriateness are largely revealed in pragmatic communication delays (Cox 2004), such as setbacks in using language, following conversational rules, and understanding social cues.

The multiple disabilities of classified children are often conspicuous and social delays can further hinder a child's ability to blend in with peers. They can also impede a child's ability to learn. So many types of learning styles and assessment practices (i.e.: group activities, presentations, etc.) are dependent upon social skills; how, then, can students be expected to gain academic skills when they have not yet mastered the unwritten rules of society? These unlearned social skills must be considered a prerequisite to academic skills.

Most regular education teachers feel overwhelmed with the amount of information included in the standard curriculum. Needless to say, special educators may

feel even more inundated, especially when delays in social skills are taken into consideration. There is a tremendous need to find the most concise and effective way to teach social appropriateness. Several types of social skill interventions have been examined and researched to determine whether or not they teach appropriate social behaviors, but this study will focus on two types: video modeling and Social Stories, in order to determine which is more efficient.

Video modeling is a technique in which students observe a short film where they, or someone else, display appropriate skills. There are several types of video modeling, including:

- those using adults and/or peers to display the intended target behavior,
- those showing self-modeling, in which the student himself is filmed portraying appropriate behavior,
- point-of-view modeling, which is filmed from the point of view of the student if he or she were to display appropriate behavior, and
- mixed models, which is a combination of any of the aforementioned models.

(McCoy & Hermansen, 2007.)

This particular study will deal exclusively with peer modeling.

Another approach to teaching social skills to students with ASD is “Social Stories.” Social Stories is a method in which students and/or teachers read, or create, stories for children that display appropriate behavior and responses in specific social situations. There is a precise format, namely descriptive elements and seven types of sentences, in which each story should be written, along with detailed guidelines, such as length and components, that each story should follow (Scattone et al. 2006).

This study is designed to compare the use of video modeling and Social Stories in a self-contained, multiply-disabled (MD) classroom. The primary goal is to analyze the effectiveness of each intervention in decreasing inappropriate behaviors in students with various moderate disabilities. The results of this study may be of interest to special educators and administrators, as it may help shed light on a more efficient, successful manner in which to teach social skills. This issue is especially intriguing to me as a special educator, since each year most, if not all, of my students in the self-contained classroom exhibit several socially inappropriate behaviors, impeding not only their ability to learn, but also to assimilate properly with their typically developing peers. In conducting this study, I hope to discover which social skill intervention is more appropriate in its use with multiply disabled students.

Research Problem

The overall question to be answered in this study:

When using video modeling and Social Stories, which intervention is most effective in decreasing inappropriate behaviors in students with multiple disabilities?

This study will show which type of social skill intervention, video modeling or Social Stories, proves to be more effective in decreasing inappropriate behaviors in multiply disabled students. My hypothesis is that video modeling will be a more efficient and successful method of decreasing inappropriate behaviors. Knowing this information will help educators and administrators choose a preferable method of social skill intervention.

Key Terms

Autism Spectrum Disorders (ASD): a developmental disability, and a category under the Individuals with Disabilities Act (IDEA) which qualifies students for special education, that causes severe delays in language and cognition.

Communication impaired: a language disorder in which any or all of the areas of language development (syntax, pragmatics, semantics, phonology and morphology) are significantly delayed.

Individuals with Disabilities Act (IDEA): a United States federal law that mandates special education and related services for children with disabilities.

Inappropriate social skills: any type of physical, gestural, or conversational demonstration that is not widely accepted by mainstream society.

Multiply disabled: a category under the Individuals with Disabilities Act (IDEA) which qualifies students for special education. This classification consists of the co-existence of delays in speech, motor skills, brain development, vision, hearing, and/or behavioral performance. Quite simply, a person with significant physical, cognitive, and social needs.

Self-contained classroom: a classroom in which the students are removed from their regular education class for all academic subjects. Children may or may not join their typically developing peers for homeroom, lunch, recess, and specials.

Implications

This topic is especially important as its findings directly affect how multiply disabled students assimilate into the world around them. As a teacher, it is critical to know the best practices to address the most pressing issues that students face. Students with multiple disabilities face a multitude of challenges, and helping them overcome the most fundamental of developmental milestones can only bring them closer to academic, social, and personal success.

As a master's degree candidate, I hope to be able to become a resource for other special educators, especially in the areas of multiply disabled students in a self contained classroom. It can be a daunting task to try to adequately educate students with multiple

disabilities, and it is my goal to provide a case study that will assist other educators in choosing a social skill intervention method that works best for them. If one form of intervention is proven to be more effective than another, it can only accelerate the process of assisting multiply disabled students with their social skill development.

Summary

The majority of students with multiple disabilities face significant delays in social skill development, which can impede their ability to progress academically and socially. While there are many types of social skill interventions, this study will deal mainly with two widely used programs: video modeling and Social Stories. Elementary aged, multiply disabled students will be instructed using both methods, in order to decrease inappropriate social behaviors and, at the same time, identifying a more appropriate method of developing social skills. If one proves to be more expedient, teachers and administrators will have a better understanding of how to instruct their students.

Chapter 2

Literature Review

Social Skills

Students who are classified as having multiple disabilities often face more than just academic and physical struggles. The effects of these disabilities are endless, and can affect students in their social and emotional development, as well. Because the career goals of students with multiple disabilities are often limited due to academic deficits, social skills become that much more important when considering the success of these students. The social skills that so many children with disabilities lack are often the same skills that enable typically developing children to participate in appropriate conversation and act appropriately in various situations.

Often, classified children who exhibit social skill deficits show difficulty in taking turn, both during play and in conversation with peers and adults. Often, they become so excited or confused that they cannot display the appropriate back and forth flow of conversation that should take place. These social skill problems can also prohibit children from listening attentively, either to conversational information or to directions. Regardless of the situation, a lack of attentive listening can cause problems in the classroom, in social situations, and, later, in a possible work environment.

Greetings and personal presentation are two other areas in which children with disabilities struggle to meet social norms. Those with more severe impairments often stand out from other children, so it is imperative that they be assimilated as much as possible through training and practice. Greeting others appropriate in everyday

interaction is vital, and will serve as the basis for understanding how and why these children should be concerned with how they present themselves to others.

Generic Interventions

The academic success of school age children is heavily dependent on appropriate social skill development. Not only do successful social skills tremendously effect students' academic performance, but also their behavioral performance, family interactions, and involvement in extracurricular activities as well (NASP 2010). While most educators are aware of the importance of the development of social skills, some may be perplexed as to how to identify, instruct, assess and monitor such an intangible part of curriculum.

Lane, Menzies, Barton-Arwood, Doukas, and Munton (2005) released a step by step procedure on designing, implementing, and evaluating social skills interventions for elementary students. Prior to any intervention in the classroom, however, they suggest that evaluators begin by identifying students for participation. In Step 1, screenings must be specific and accurate, so as to avoid including students who do not require intervention, and to avoid excluding students that do (Lane et al. 2005). While this particular study used Walker and Severson's Systematic Screening for Behavior Disorders (SSBD), students can be identified for participation using any number of methods, including teacher nomination or ratings and documented deficits included in a student's IEP, as long as the method chosen is systematic and data driven (Lane et al. 2005).

Step 2 requires the evaluators to identify a special skill deficit or deficits and the design of the intervention program. While Lane et al. used Gresham and Elliott's

Assessment Intervention Record (1990) to identify skills strengths, skill and performance deficits, and problem behaviors, other methods can be used, such as formal and informal observation, teacher and parent reports, and rating scales. Once a list of skills is compiled, an appropriate method of intervention can be developed. Walker and Severson's SSBD boasts a companion program, which contains lessons to address the assessed social skills in the original screening. Each lesson is comprised of five stages, including the "tell phase", in which the intervention leader introduces the skills on which the group will focus, the "show phase", during which the students model positive and negative examples of the target behavior, the "do phase", where students define the skill and explain its importance, the "follow through and practice phase", where activities are provided for rehearsal and practice, and, finally, the "generalization phase" where students discuss other areas the target skills may become necessary and how to handle those situations (Lane et al. 2005). Once an intervention is developed, step three, the organization of the intervention groups, can commence. Students can be grouped in any number of ways, including random, skill based, or demographic grouping (Lane et al. 2005).

Prior to the implementation of any intervention, the intervention leaders must be properly trained in any necessary techniques. During step four, leaders are trained in procedure, technique, and management, in order to increase treatment integrity and decrease any possible inter-observer discrepancies. Step five is simply the implementation of the intervention. Several factors are to be considered during this step, included treatment integrity (that is, the extent to which the intervention is being implemented as it was intended), behavior expectations (that is, the rules set forth for the

students during implementation), and intervention location. It is imperative that location be determined based on situation context, or in a manner that is as close as possible, such as a classroom, playground, or other setting within the school (Lane et al. 2005).

Lastly, evaluators are to complete step six, the monitoring of students' progress. There are several ways in which this can be done, but the foundation for determining a monitoring process is to find a method that is reliable, valid, and feasible, such as teacher ratings, self reports, and direct observation (Lane et al. 2005). Before completing the actual monitoring process, evaluators must determine the specific behavior they wish the change, a measurement system that corresponds with the target behavior (e.g. when hoping to reduce the amount of occurrences of a specific behavior, a duration recording would be appropriate), and an assessment schedule (Lane et al. 2005). Once these three variables are considered, evaluators can collect and interpret the data. While social skill instruction can take place in a variety of ways, using a variety of procedures, it is beneficial for educators and researchers alike to implement a research based system in order to increase the likelihood of success, and decrease the amount of time used in finding an appropriate method. Several studies were referenced to have used this approach, and resulted in fewer disruptive behaviors in the classroom, in addition to more academic engagement and better social interactions. While more studies may be necessary to validate these findings, these preliminary results are favorable.

There are numerous ways to teach social skills. For example, in a literature review of 55 social skill intervention studies, McConnell (2002) identified five types of social skill interventions,. Environmental modifications are those in which the physical and social environment is modified to advocate social interactions between disabled and

non-disabled peers. Child-specific interventions involved the direct instruction of social skill behaviors. Collateral skill interventions offer strategies to foster social interactions using the training of related skills, such as language and cueing, as opposed to direct instruction. Peer-mediated interventions focus on the training of the non-disabled peers in the areas of reaction to and redirection of skills displayed by disabled peers.

Comprehensive interventions consist of a combination of two or more of the previously mentioned categories (McConnell 2002). Determining which intervention to use can be done by taking into consideration the specific target skill on which one is focusing, as well as the students for whom one is planning. At the conclusion of his review, McConnell answered three questions posed by The Committee on Educational Interventions for Children with Autism. First, he stated that the majority of children who are classified as autistic are able to benefit from social skill instruction, as so much is known about the disability, but that no one intervention proves to be more effective than another. Second, McConnell notes that several social skills are able to be addressed and remediated through intervention, including play skills, greetings and conversation skills, and asking for help. Third, he discovered three limitations of these interventions, including a lack of empirical evaluations of the interventions, an absence of peer reviewed support, and that the majority of studies have been conducted in a classroom setting, therefore not evaluating what, if anything, can be instructed in community based situations.

Based on target skills, specific students, and intervention methods, educators may find that efforts to increase positive or decrease negative social behaviors are unsuccessful. In their meta analysis of school based social skills interventions, Bellini, Peters, Benner, and Hopf (2007) concluded that most interventions are only minimally

effective for children with ASD and other social skill deficits. While this can be especially frustrating given the amount of time and effort put forth in assessing, implementing, and evaluating interventions, Gresham, Sugai, and Horner (2001) suggest several steps one can take to increase the success of interventions for students with high incidence disabilities. First, educators can increase the amount of interventions implemented, whether it be by increasing amount of sessions in the intervention phase or by using a comprehensive intervention strategy. Second, they can adjust the setting of instruction to more accurately represent the natural setting in which the target skills are to be used. Third, evaluators can more closely match the intervention strategy with the skill deficit, as well as ensuring intervention fidelity through research and instructor training.

Following the correct procedures and heeding the advice of researchers can behoove many educators and evaluators. Miller, Lane, and Wehby (2005) assessed school-based interventions for students with high incidence disabilities. The seven participants included students ages 6 to 10 years of age with varying disabilities, including the classifications of emotionally disturbed, specific learning disabilities, mental retardation, other health impairment, and speech and language deficits, who were placed in a self-contained classroom. Miller et al. (2007) followed several of the steps suggested by Lane et al. (2005) and started with a meeting with the students' teacher to discuss possible participants and target skills to satisfy Steps 1 and 2 of the process. Lessons were taken from Elliott and Gresham's Social Skills Intervention Guide (the companion guide to the SSBD, which was discussed earlier in Chapter 2) to further complete the requirements of Step 2. Students were placed into one of two groups, divided by grade level and gender when possible, to reach the completion of Step 3. The

formal training suggested for Step 4 was not completed; however, treatment integrity was monitored by the trainers with data collection with behavior checklists. Step 5, the implementation of the intervention, was satisfied via 30 minutes of direct instruction 3-4 days a week over a 6 week period, resulting in 12 hours of training and student progress was monitored using the observational system Multi Option Observational System for Experimental Students (MOOSES) to complete Step 6. MOOSES is a computer based program that “allows for simultaneous collection of discrete events and duration measures along a real time continuum” (Miller et al. 2005).

As a result of following the specific step by step procedure (Lane et al. 2005) the amount of inappropriate classroom behaviors (ICB) decreased between the baseline period and intervention period for both groups, and ICB continued to decrease between the intervention phase and post-intervention phase for Group 1. Group 2, however, did not continue with the decreasing trend into the post-intervention phase. Similarly, the amount of Academic Engaged Time (AET) increased for both groups between baseline and intervention, and only Group 1 continued to exhibit higher amounts of AET during post-intervention than during baseline. While most would consider these results successful, perhaps a greater rate of success could be achieved by considering any or all of the suggestions put forth by Gresham et al. in 2001.

While many pre-made intervention techniques, such as those produced by Gresham and Elliott, can prove to be successful in decreasing inappropriate social behaviors and increasing appropriate social behaviors, perhaps greater success can be found by using more student specific forms of intervention. Identifying target behaviors specific to the students under consideration, and consequently matching intervention to

those skills, may make the difference in the rate of success. Social Stories and video modeling are two such types of specific intervention, in which the type of instruction is hinged upon the student and target behavior.

Social Stories

Carol Gray, an author, presenter and consultant to children with ASD, first developed Social Stories in 1991. Since that time, the intricacies have been reworked based on developments in research and experience, but the basic definition and goal have remained constant: a story that describes a particular skill or problem that a child may have, through a specific format, in a way that the child with ASD will understand (Gray 2010). In its original form, a Social Story contained three types of sentences: descriptive, directive, and perspective (Reynhout & Carter 2006). Descriptive sentences describe the actual situation in which a child may find himself. Directive sentences suggest an appropriate behavioral response. Perspective sentences bring to mind thoughts and emotions that a child might feel in the particular situation. In 2003, a revision included a fourth type of sentence: the affirmative sentence. Affirmative sentences discuss what values and opinions society typically accepts (Reynhout & Carter 2006). The revisions have also proposed two optional sentence varieties: control and cooperative sentences. Control sentences are those that a student writes himself and cooperative sentences suggest what peers may do to assist the student with ASD. A typical ratio for sentences types within the Social Story are two to five descriptive, perspective and/or affirmative sentences for every directive sentence (Reynhout & Carter 2006). While pictures were not originally included in the develop of the stories, Gray later concluded that various illustrations and photographs may help to enhance comprehension.

While Social Stories are relatively easy to produce, teachers and parents should not write them without careful consideration. All perspective sentences should come from the viewpoint of the student, and the comprehension level should be that of the intended student. All responsorial sentences must be positive in nature; for example, writer may write, “I will sit down” as opposed to “I will not stand up” (Reynhout & Carter 2006). Social Stories can be executed in one of three ways. When the target student is one who can read, the teacher may read the story for the first intervention session, and may have the student read the story for all follow-up interventions. Should the student be unable to read the story himself, the teacher may record the story aurally, so that the child may follow along, with tones to denote the turning of the pages for maximum independence. Alternatively, the story may be video recorded, with sequences that portray the situation with proper responses. Immediately after the story is communicated, a comprehension check must be administered in one of any number of ways, including verbal responses, written responses, or the completion of a checklist (Reynhout & Carter 2006). After the intervention process, teachers and parents will most likely wish to fade the usage of these Social Stories, and can complete the process in one of two ways. First, they may extend the period of time between readings until the story is no longer needed or second, they may omit or revise certain sentences to decrease dependence on the story.

Throughout the past several years, studies have been completed to assess the effectiveness of social stories across various settings and students. In 2009, Graetz, Mastropieri and Scruggs implemented a study that investigated the effectiveness of social stories for decreasing inappropriate behaviors in adolescents with ASD. The researchers

chose three students, ages 12 – 15, each displaying a different inappropriate behavior: refusal to stand, use of a high-pitched voice, and placing hands and other objects in mouth. After identifying the target behaviors, modified, individual social stories were written, and included actual photographs of the students and teachers. Although this was not part of Gray’s original design, a team of the children’s teachers, speech clinicians and the researchers decided that this method might better enhance comprehension, as the children did not completely understand the stories with plain text (Graetz et al. 2009). Observers collected baseline data for a period lasting between 4 and 13 days, during 20 to 45 minute episodes. The intervention phase was initiated after performance levels were determined, at which point the children were read the story twice per day, over and period of 9 – 20 days. At the conclusion of the intervention phase, Graetz et al. (2009) initiated a generalization phase, during which two of the three participants were observed in other settings to assess whether the target behavior still existed. The third participant was not observed in an additional setting as his target behavior (refusal to stand) only occurred during Physical Education class. The generalization period lasted for 5 days, and approximately 3 – 4 weeks later, researchers conducted the maintenance phase for 2 days.

During the intervention phase, all three participants displayed a significant decrease in inappropriate social behaviors (Graetz et al. 2009). When Graetz et al. (2009) carried out the generalization phase, they found that only one student was successful with the generalization of the target behavior; the other student, while unsuccessful, did not completely regress to her original behaviors. When Graetz et al. (2009) returned for the maintenance period, they found that two of the three children had continued to exhibit the

target behavior, and that the percentage of inappropriate behaviors demonstrated by the third student only increased a marginal amount from the generalization phase.

Similarly, Ozdemir (2008) conducted a study which focused on the effectiveness of social stories when attempting to decrease disruptive behaviors of children with ASD. Instead of focusing her efforts on adolescents, she identified three participants between the ages of seven and nine years old, each with the ability to orally communicate and with pre-reading or beginning reading skills. Baseline data was recorded for a period lasting between four and ten days, depending on the student, and intervention, which consisted of seven to nine page, student specific social stories, was implemented one to two times per day for an average of 27 days (Ozdemir 2008). A significant decrease in the appearance of inappropriate behaviors was noted between the baseline and intervention phases. Once the occurrence of the negative behaviors was less than 40%, a series of fades, each with the same criteria for introduction, were introduced. During Fade A, the directive sentence was omitted, and during Fade B, the rewritten social story was read every other day. The final fade, labeled “no story”, could be considered a maintenance phase, as the story was completely omitted from the daily routine during data collection. Each of the three fades lasted for 5 days. A very slight increase in inappropriate behaviors was noted from the intervention phase to Fade A in all the subjects. During the Fade B phase, two students continued to show minimal increases in negative behaviors, while one student displayed the desired decrease. During the “no story” condition, all participants’ negative behaviors continued to occur, but at a low rate. While the general trend in occurrence was that of increase from condition to condition, it

can be noted that all phases after the baseline period showed a significantly lower amount of disruptive behaviors.

Alternatively, some researchers wish to evaluate the ability of social stories to increase appropriate social behaviors. Scattone, Tingstom, and Wilczynski (2006) attempted exactly this with students diagnosed with ASD, between the ages 8 and 13 years old. For all participants, an appropriate social interaction was defined as:

A verbal, physical, or gestural initiation or response to a peer; a comment or questions related to the activity; continued engagement in the same activity as the peer, a response to a peer's comment or question with a comment related to the conversation; an initiated comment or question related to the conversation; or a physical gesture such as nodding to indicate approval or disagreement (Scattone et al. 2006).

These particular social stories were student specific and contained no illustrations, but adhered to Gray's guidelines (2004). The stories were read only once per day during the intervention phase, and observation was made and recorded for 10 minute periods, 3 days per week, for 11 weeks. Only two phases were documented (baseline and intervention), but all students' appropriate social behaviors were noted to improve. One student showed a small increase (e.g. 1% to 4%), while the other two students showed a marked increase of appropriate behavior occurrences from baseline to intervention (e.g. 7% to 39% and 13% to 28%) (Scattone et al. 2006). As other studies have shown, the true test of success in reference to social stories seems to be the lasting effects the intervention provides, and this study while successful during intervention, does not evaluate the social story's ability to teach maintenance of a skill.

While it is always critical to measure the progress of the target students in any study, sometimes non-disabled peers must be introduced in order to get a clear picture of the success of an intervention. Delano and Snell (2006) did just that as they attempted to examine the effects of social stories on social engagement with students with ASD. Three students, diagnosed with ASD and between the ages of six and nine, and six of their non-disabled peers, were chosen to participate in this multi-condition study. During the baseline period, the students with ASD were paired with one non-disabled peer and, after one reading of a generic story and a comprehension check, a ten minute play session was observed and social engagements were documented; the baseline phase lasted an average of 7 days. During the intervention phase, the same format was followed, but the children were read a student specific social story with a comprehension check, prior to observation; this phase lasted for 14 days, and significant increases in social engagement were noted from all students with ASD. After intervention, a series of fades were introduced: Fade A, which lasted six days, consisted of a reading every other day, Fade B, also lasting six days, consisted of a reading every third day, and the “No Story” condition, lasting an average of 10 days, was simply the observation of the students engaged in play (Delano & Snell 2006). The children were only moved between fades when the amount of appropriate social engagements was at least 40% higher than the baseline recordings. During Fade A, two students displayed inconsistent decreases in their social engagements, while one student showed an inconsistent increase; during Fade B, all children exhibited inconsistent increases in social engagements. Further, two students displayed increases in social engagement, while one showed a decrease (Delano

& Snell 2006). Perhaps the key to this lasting effect of social stories is a slow fade from full intervention to a “no story” condition.

In studying the effects of Social Stories on prosocial behavior, Crozier and Tincani (2006) used an interesting design when implementing their study. After selecting three, three and five year old children with autism, a baseline phase, which lasted ten minutes each day across a period of five to eight days, was employed. During the five to seven day intervention period, individual stories were read before each observation. The stories were based on the student and target behavior for which the story was being written. After the data collection period, the researched then reverted to the baseline phase for two of the three students, in an ABAB design. The third student required verbal prompting, therefore Crozier and Tincani inserted a “C” phase, to increase appropriate behavior (2006). After the six day period of verbal prompting, researchers defaulted to baseline data collection for three days, then verbal prompting intervention, story intervention, and verbal prompting intervention, each of which lasted for 2 days, resulting in an ABACBC design. Not only did Crozier and Tincani implement different design studies for the students, they also observed for both an increase of appropriate behaviors and a decrease in inappropriate behaviors for one of the children, and for frequencies of the target behavior under both prompted and unprompted circumstances. All three children participated in a maintenance phase after their individual designs were complete.

The first student, who participated in the ABAB design, showed a 64% increase of appropriate prosocial behavior from the implementation of the original baseline to the end of the final intervention period; because his target behavior was to sit appropriately

during circle time, only the occurrence of appropriate behaviors were recorded. The second student, who also participated in the ABAB design, was being observed for the frequency of appropriate and inappropriate play episodes, and displayed a decrease of 3.91 inappropriate behaviors per session, and an increase of 15.86 appropriate behaviors per session. The third student, who participated in the ABACBC design, was observed for the frequency of peer discussion, both prompted and unprompted. From the original baseline data to the final intervention, this child displayed an increase of 5.8 unprompted verbal interactions per session (Crozier & Tincani 2006). Perhaps the most interesting piece of information to glean from this study is that social stories, while usually effective, may need individual modifications depending on the student and the target behavior.

Video Modeling

As can happen with social stories, video modeling can be used as an intervention that is specific to the student and target behavior under consideration. Video modeling allows instructors to edit what students observe, in order to focus on a particular target behavior, and provides a stimulus for the child (McCoy & Hermansen 2007). These two areas are where live peer or adult interaction fail. There are five types of video modeling from which instructors can choose, and McCoy and Hermansen conducted a literature review of 34 studies to determine which type of video modeling is best suited to a target behavior (2007).

Adult video modeling was used in nine of the 34 studies, and was found to be most effective at demonstrating appropriate play skills, conversation skills, purchasing skills, and generative spelling skills of the participants, ages three to 13 years old. Peer modeling was found in ten of the 34 studies of three to 20 year old participants, and was

found to be most effective when teaching language skills, specifically those intended for play and living skills. Self modeling can be used in one of two ways: first, the video can be edited to exclude all examples of inappropriate behavior while focusing on positive examples of the target behaviors or second, the video can be viewed unedited by the participant so that he may be able to evaluate his own behavior (McCoy & Hermansen 2007). This type of modeling was found in 7 of the 34 studies, and was most effective in the generalization of target behaviors across settings and situations. Point of view modeling is a newer form of video modeling, and differs from self modeling, in that the perspective of the camera only shows the hands of the model. At the time of this literature review, no studies had been completed to evaluate the effectiveness of point of view modeling, and since then four have been released, but were not included in the original count of 34. These four studies used participants between the ages of two and 12, and showed point of view modeling to be effective in teaching play skills, self-help skills, and in preparing students for transitions. The final type of modeling is mixed modeling, in which two or more types of video modeling are employed, and the three studies that dealt with this type of modeling were for one of two purposes. One, to compare model types for effectiveness, and two, using self modeling as a piece of reflection when other types of video modeling were not proven to be effective (McCoy & Hermansen 2007). In the studies, where the participants ranged in age from three to 15, the effectiveness of teaching social initiations and conversation and play skills was assessed, but results were variable, which could be a result of the small sample. Overall, the best skills on which to focus when using video modeling are daily living skills,

communication skills, social skills, academics, and inappropriate behaviors (Banda, Matuszny, & Turkan 2007).

Banda et al. have published a list of steps for conducting video modeling interventions, based on their literature reviews of studies done on the subject (2007). The first step in using a video modeling intervention is to identify and select a target behavior. Instructors are warned, however, to ensure that their target behavior is measurable and specific; for example, a target behavior of “communication skills” does not provide enough details in order to produce and assess the effectiveness of a video. Researchers then suggest step two, which is obtaining the necessary permissions from not only the parents, but of the school as well, before any further intervention as a lack of permission will break confidentiality laws and regulations (Banda et al. 2007). Step three consists of interviewing the parents and the children to assess the interests of the child, ensuring that the participant enjoys watching television and video materials. Once an instructor has completed steps one through three, he should select and train the models to be used in the video, as step four. Participants should only be chosen as models in a self modeling video if it is known that they are able to exhibit the target behaviors on cue. Otherwise, the instructor should clearly and thoroughly explain what is expected of any third party model, whether they be adults or peers. During step five, the instructor should prepare the equipment and the setting in which filming will take place. A tripod should be used to increase stability, and the setting should be free from any visual distractors, especially when working with students with attention deficits. After the preparatory steps have been completed, the instructor is then ready to complete step six, the recording of the target behaviors. This should only begin when the model is comfortable in performing the

target behaviors, and once recorded, should be free of distractors and other behaviors which may confuse the participant during viewing. Step seven, the editing of the video, consists of several steps within itself. First, decide whether the models look natural. Second, ensure that the pace of the video is appropriate for the intended participant. Third, decide how long the video should last. Video models can last anywhere from five to 20 seconds to 20 minutes; length should be determined by the attention span of the participant. Fourth, breaks should be inserted to videos for students with communication deficits, to provide moments for clarification. Fifth, depending on the abilities of the participant, instructors should consider breaking target skills down into smaller steps to reinforce comprehension. During step eight, baseline data should be collected to monitor students' progress before intervention. This can be done in a variety of ways, including a tally sheet or duration data recording. Banda et al. Recommends that baseline data be collected for a minimum of three to four sessions or days to ensure data stability (2007). After baseline data has been collected, step nine can start, wherein the participant is shown the video clip of the desired behavior. There should be no interruptions during the video, and once the demonstration has ended, the instructor can have the participant display the target behavior to ensure comprehension of the desired skill. During step ten, the instructor should collect and graph the intervention data; that is the frequency of which the child displays the target behavior shown in the video. Data can be plotted using a simple line graph. Finally, in step 11, should the intervention strategy work, the instructor should promote the maintenance of the skills with verbal prompting when needed, and generalization, by introducing the student to a wider range of settings in which the target behavior can be displayed (Banda et al. 2007).

As previously stated, video modeling has proven to be beneficial when teaching socially expressive behaviors to children with ASD. Charlop, Dennis, Carpenter, and Greenberg (2010) studied three boys with autism, all of whom displayed social deficits and attended after-school behavior therapy. Individual videos were made for each student for three descriptive stimuli per child. In each situation, the video showed the appropriate response to the stimuli using a target verbalization, with intonation, gesture, and facial expression. Adult video modeling was chosen and each video lasted approximately 90 seconds. The students were observed for 5, 7, and 10 baseline sessions, and data was recorded based on the percentage of opportunities correct in which appropriate verbalizations occurred; the students were given 5 seconds to elicit said verbalization. If no verbalization occurred, the trial ended and normal play resumed. During the intervention period, the child watched the individual video two consecutive times, and then participated and was assessed in a play situation. As in the baseline data collection, the child was given 5 seconds to respond and the consequences for verbalizations remained the same. Skill mastery was achieved when the student displayed the four responses in seven out of nine trial for two consecutive play sessions.

Generalization probes were taken during baseline as well as post-intervention with an unfamiliar person in a different play area. The children experienced two, three, and four generalizations during baseline, and two each post treatment. Peer generalization was also assessed after treatment, while one student experienced peer generalization both during baseline and after the intervention (Charlop et al. 2010).

None of the children displayed appropriate verbal, gestural, or intonational responses during baseline. While some of the children showed appropriate facial

expressions during baseline data collection, none reached the criterion. During the intervention period, all children reached the desired criterion for each of the four responses in anywhere from two to five sessions. In the generalization probes post treatment, one student expressed appropriate verbalizations nine out of nine trials, and two students expressed appropriate verbalizations seven out of nine trials. One child generalized intonation at the desired criteria during post treatment, and while the other two children did not meet the desired criteria, they still displayed an increase from baseline. Out of the twelve post intervention generalization probes, the children met criterion for appropriate gestures six times, still showing an increase from baseline in the remaining six. While the results of generalization probe concerning facial expression were not as high as expected, the students still displayed a higher rate than during baseline collection (Charlop et al. 2010). This study clearly shows the quick effectiveness of video modeling during intervention, as well as increases of appropriate social behavior from baseline to generalization.

Some instructors prefer to use commercially available videos, while other prefer student specific, instructor created models, but which is better? Palechka & MacDonald (2010) chose three, four to five year old children diagnosed with ASD with whom they assessed the effectiveness of both types of video models when considering scripted play. During the baseline phase, play sets were placed in front of the students for several 4-5 minute sessions. During both the instructor created video (ICV) intervention and the commercially available video (CAV) intervention, the children were shown the video twice, consecutively, then instructed to sit in front of the play set. Mastery of the scripted play skill was considered met when the child exhibited the script completion 75% for 3

consecutive sessions. The first child mastered the play script within 12 sessions with both the ICV and CAV. The second child mastered the play script within 4 sessions using ICV, and within 8 sessions, using the CAV. The third child mastered the play script within 16 sessions using the ICV, but did not master the given skills using CAV, even when allowed 16 sessions in which to do so. Interestingly, the children attended less to the video and more to the toys, as mastery of the script completion became closer (Palechka & MacDonald 2010). From this study, perhaps educators can extract that student specific videos can be more effective in teaching social scripting.

It seems that many studies involving video modeling consist of researchers putting their own spin on the intervention method. Graetz, Mastropieri, and Scruggs (2006) reported on an intervention with a 13 year old boy with autism, who displayed inappropriate hand wringing and arm flailing. After discussion, the teacher, speech therapist, and researcher determined that self modeling would be an appropriate method of video modeling, but that along with showing the student displaying the appropriate behavior of sitting quietly with still hands, they would also produce and show an additional video consisting of clips of the student displaying negative behavior. The student was shown a two minute video of himself displaying the aforementioned inappropriate behaviors, and engaged in a discussion regarding the inappropriateness of those behaviors. Immediately following this viewing and discussion, he was shown another video, highlighting instances when he was sitting appropriately with his hands in his lap. This coincided with praise from the researcher, and was followed by another discussion regarding the appropriateness of what was displayed. Although the teacher and parent reported that the student requested further viewings of the two tapes, and

initiated conversation about the tapes, no formal data recording was completed, making the success of this method hard to defend (Graetz et al, 2006). Still, it is noteworthy that various forms of video modeling may be successful depending upon the student with whom one is working.

In some situations, children respond better to video modeling when it is accompanied by supplementary instruction. Sancho, Sidener, T., Reeve, & Sidener D. compared typical video modeling, without supporting instruction, with video modeling and supplementary instruction combined (2010) to assess the number of vocalizations and play actions used during play time. Two children, both of whom were diagnosed with ASD and were 5 years old, were reported by parents and teachers as not engaging in imaginative play. Baseline data was collected for a period lasting 11 days, depending on the student, and was taken during 4 minute sessions while the student was in a room with a play set in front of the child. During baseline collection, neither child exhibited appropriate vocal or play skills. Interventions were presented in a “quasi-random” manner, presenting both types of video modeling each day, but in a different order. In simultaneous video modeling the children were shown the video and given a play set at the same time, allowing the student the opportunity to imitate what he saw on the video. If the child did not imitate correctly, the specific skill was shown again, and the child was given another opportunity to complete the action appropriately. In the priming video modeling, the children were shown the video but not given access to a different play set. If the child attended to the video, preferential snack items were dropped into a cup nearby. Overall, both procedures proved to be affective. For one child, both were equally

effective and yet, for the other, scripted play actions were acquired during simultaneous video modeling.

Social Stories and Video Modeling

While Social Stories and video modeling have been researched and compared with themselves, only recently have researchers begun to use the two interventions in the same study. In 2007, Bernad-Ripoll selected a 9 year old boy with Asperger's Syndrome who displayed the inability to recognize certain emotions and to identify the appropriate actions for each emotion. During the baseline procedure, the student was shown two videos of situations occurring around his home, one in which he expressed a positive emotion and one in which he expressed a positive emotion. He was asked to respond to three questions: "How are you feeling?" "Why did you feel like this?" "What should you do next time?". During the intervention phase, two social stories that explain his emotions were introduced. After the stories were read, a 10-20 minute break was given, then related video taped segments were shown. Finally, the student was re-asked the same three questions. During generalization, the student's parents were to read any of the social stories previously presented, at the student's choosing, for a 4 day period. After this period, the parents were to refer to the stories whenever they noticed the student exhibiting the previously described emotional states. During the first ten sessions or, the baseline phase, the student correctly identified his emotions with 55% accuracy, and he answered the three questions with 10% accuracy. By the end of the intervention phase or, the next ten sessions, the student was able to identify his emotions with 95% accuracy, and answered the three questions with 100% accuracy. During the

generalization phase, the student maintained his 100% accuracy level (Bernad-Ripoll 2007).

Similarly, Scattone (2008) chose a nine year old boy diagnosed with Asperger Syndrome who showed difficulty in making eye contact, smiling, and initiating conversation. Data was taken during the baseline and interventions phases in 5 minute sessions, occurring 1-2 times per week. Before the introduction of the intervention, baseline data was collected during a conversation between the student and adults in the clinic in which the study was taking place. During intervention, the student watched a video taped social story, in which the story was narrated and two adults modeled the skills in a 5 minute video taped conversation. The video was watched once each evening at home, and then again in the clinic prior to each data collection (Scattone 2008). Baseline data showed that the student made eye contact during 6% of intervals, smiled during .6%, and initiated conversation during .8% of intervals. During intervention, however, the student increased eye contact to 97% during intervals, smiling to 7%, and conversation initiation to 33% during intervals. Using the combined method of social stories and video modeling seems to work extremely well in increasing conversational skills in children with ASD.

While the two previous studies observed one student each, Sansosti and Powell-Smith (2008) chose three boys, ages six to ten, diagnosed with high functioning Autism or Asperger's Syndrome with social communication deficits. For each target behavior, which ranged from greeting peers to sharing, a social story was written and made into a five to nine slide Power Point presentation. Using the same target skills, peer video models were filmed, and lasted 45 seconds to one minute. These two medias were

combined to create a self-advancing Power Point slideshow. During the baseline data collection, observers simply recorded whether appropriate responses were observed during 10-second intervals. Observations were made for 15 to 20 minutes, twice a week. The children watched the combined Power Point prior to each play session during the intervention period, and data was collected in an identical way to that of the baseline procedure. Intervention modifications were introduced for two of the students, and consisted of teacher prompting for skill usage. Intervention was faded by reducing the frequency of the viewings across a period of two weeks, and during that time, no data was collected; follow-up data was taken after the fading process. The first student showed a 22% increase of the target behavior from baseline to intervention, 49% increase from baseline to intervention with modifications, and ended with an 83.75% increase from baseline to follow-up. The second student increased target behaviors by 23% from baseline to intervention, 61.67% from baseline to intervention with modifications, and 43.65% from baseline to follow-up. The final child, who did not receive modifications during his intervention, increased his target behaviors by 48.38% from baseline to intervention, and by 82% from baseline to follow-up (Sansosti & Powell-Smith, 2008). Yet again, the research shows that, when combined, social stories and video modeling can be a viable form of intervention.

The majority of research shows both social stories and video modeling to be effective forms of social skill intervention. While most of the studies completed have had the common goal of increasing appropriate social behaviors, social stories and video modeling have proven to work when attempting to decrease inappropriate behaviors, as well. Although this research provides excellent feedback to teachers and administrators,

which method proves to be more effective, when used separately? By identifying the benefits of each intervention in its own right, educators can make more informed decisions when attempting to change the social skill habits of their students.

Chapter 3

Methodology

Subjects

This study compared the effectiveness of the use of social stories and video modeling for decreasing inappropriate behaviors in students with multiple disabilities. The behavioral goal is one that is present in two different children, effects comprehension through distraction, and that had not been previously mediated.

This study focused on two of the four students in a self-contained, multi-age public school classroom, containing students with multiple disabilities. The elementary school is home to grades kindergarten through fifth grade, and is one of four elementary schools in the district. Once the children are promoted to grade six, they move to the district middle school until grade eight, when they transition to a regional high school. The entire district is composed of 3,246 students and this particular school has 614 students enrolled, 11.6% of whom are classified with an IEP. The township holds a level “I” socioeconomic rating, on a scale from “A” to “J”, with “J” being the highest. This rating is based on income, education levels, unemployment rates, and density of housing.

The two students chosen for this study were in a self-contained classroom of 4 children in a public school, and were classified as “multiple disability” and “autism”. They were chosen for this study based on teacher accessibility and the presence of the target behavior. The classroom was taught by a special education teacher, with one instructional associate, and one 1:1 aide. The students remained the special education classroom for all academic subjects, and were mainstreamed for homeroom, specials, and lunch and recess. One of the two children was accompanied by the 1:1 aide throughout

the day, including time spent in and out of the special education classroom. Both students performed well below grade level, with their IQs below the normal range, and were each retained once during their academic career.

Student A is working in the fourth grade math book of the Pearson/Scott Foresman math program, can complete most of the rote mathematic problems, but struggles with comprehension of higher level thinking as well as the application of abstract concepts. He is currently decoding at a second grade level, comprehending at a first grade level, and can read sight words at up to a third grade level. He struggles with focusing on the task at hand, and almost always perseverates on thoughts and ideas that do not pertain to the work in front of him.

Student B is working at a much lower academic level. She has been working in the first grade math book of the Pearson/Scott Foresman math program for the past two school years, and while she is able to count with one to one correspondence and add and subtract with manipulatives, she needs constant adult support to complete these tasks. She struggles with the concepts of time, measurement, and number sense. Student B is also still working to blend CVC words and has difficulty focusing on a story long enough to answer basic listening comprehension questions.

Table 1. Student descriptions

Student	Gender	Age	Grade	Classification	Characteristics
A	Male	12y 3m	5th	Autistic	Obsessive Compulsive Disorder, Mild aggression, Perseveration, ADHD
B	Female	10y 5m	4th	Multiple Disability	Epilepsy, Generalized Anxiety Disorder, Communication Impairment, Mental Retardation

These children were chosen based on four criteria: they both exhibited a similar target behavior, were able to sit and attend to videos and the reading of social stories, the target behavior in question was previously untreated, and the target behavior was exhibited several times throughout the school day.

Target Behavior: The student made inappropriate noises with his/her mouth. In student A, the behavior manifested itself in the form of repetitive perseveration, as the student seems to be running through familiar scenarios in his mind. He almost constantly talked about turning left, turning right, visiting Wawa, earning privileges, and losing privileges. In student B, the behavior manifested itself in the form of “shushing” sounds, and seems to occur when the child was excited or overwhelmed by sensory stimulus.

Development of Interventions and Materials

The social stories were developed according to Gray’s 2003 guidelines (further outlined in Chapter 2) (Reynhout & Carter 2006) and varied based on each individual student. Photos of the children were used to attract and maintain attention while the story was being read. Student A was able to read the story independently, while the Student B required the story to be read to her. Both stories included descriptive, directive, perspective, and affirmative sentences, and were written in the first person perspective. For example, statements such as, “I like to make noises with my mouth when I am excited or scared.” and, “My friends are confused when they hear me do this.” were included. Comprehension questions were asked at the conclusion of the story to ensure understanding. For example, at the end of each story, the student was asked if mouth noises were appropriate, as well as what can be done instead of making the noises. If the comprehension questions were answered incorrectly, the story was reread, and the

questions were asked again. Usage fade was implemented by extending the time between readings of the social story to decrease dependence.

The videos shown during the video modeling intervention period used peer modeling as an example of appropriate behavior, and included narration of each scene, explaining what the children were do, as showing the appropriate behavior alone would not have explained to the children what they were to focus on. Peer modeling was chosen for two reasons: it was difficult to capture footage of the children performing the expected, appropriate behavior, and each of the children have favored, typical peers to whom they would be more apt to attend. Comprehension questions, similar to those used in the social stories, were asked at the conclusion of the viewing to ensure understanding. If the comprehension questions were answered incorrectly, the video was viewed again, and the questions were asked again. Usage fade was implemented by extending the time between viewings of the video to decrease dependence.

To complete this study thoroughly, the researcher used the following materials throughout the duration of the research:

Table 2. Materials and purposes

Material	Purpose
Two social stories	One for each student
Two samples of video models	One for each student
Flip video camera	To record the models
Typically developing peers	To provide appropriate peer modeling throughout the video
MacBook Pro computer	To create, narrate, and display the video to the children, and to create the social stories

Procedure

This study followed an experimental, multiple baseline design. The first set of baseline data was recorded over a period of 5 days. The researcher tallied the times the target behavior occurred during the day, while the student was present in the special education classroom, which totaled approximately 5 hours per day. When referencing student A, an “occurrence” was defined as an episode of perseveration, and was separated from the next occurrence by the teacher verbally prompting the cessation of the behavior. When referencing student B, an “occurrence” was defined as an episode of “shushing”, and was separated by a period of 2 minutes or more of “non-shushing”.

The interventions were alternated and reversed for each student; specifically, student A began the intervention phase by viewing a video of appropriate behavior, and student B began the intervention phase by attending to a social story. Data was taken over a period of 5 days, and was tallied at the end of each school day. After the first five day intervention period, a second baseline period began, and lasted for another 5 days. The second intervention period started, and data was taken for five more days. The final baseline data collection period lasted five days, and all research was completed by a final maintenance period, which was conducted 2 weeks after the final baseline and lasted 2 days.

Table 3. Research phases

	Baseline 1	Intervention 1 (five days)	Baseline 2	Intervention 2 (five days)	Baseline 3	Maintenanc e
Student A	Five days	Video modeling	Five days	Social story	Five days	2 weeks later, 2 days
Student B	Five days	Social story	Five days	Video modeling	Five days	2 weeks later, 2 days

All data taken will be presented in narrative form, as well as graph form.

Recommendations and analyses will be provided, and variability and possible changes to research will be suggested. Additional questions to be answered are: Do the interventions work to decrease the inappropriate behavior in the children with multiple disabilities? If they work, which intervention decreases the behavior quickly and more succinctly?

Chapter 4

Results

Summary

In this experimental, multiple baseline design study, two students placed in a self-contained, multiply disabled classroom were chosen because of the display of inappropriate social behaviors. The research question to be answered was:

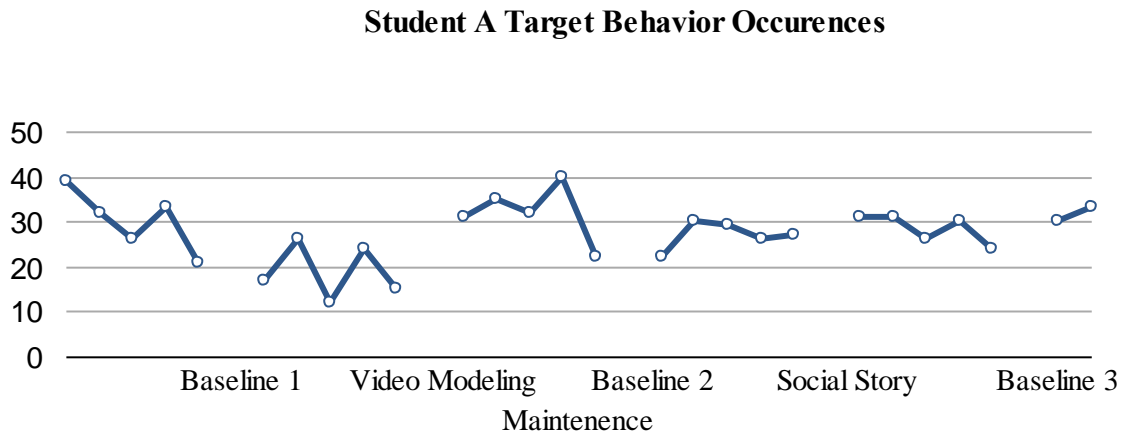
When using video modeling and Social Stories, which intervention is most effective in decreasing inappropriate behaviors in students with multiple disabilities?

In the case of these students, the inappropriate behaviors mentioned manifested as repetitive perseveration in Student A, and shushing noises in Student B. The study consisted of three baseline periods, alternating with two intervention periods, and one maintenance period at the conclusion of the study. During the intervention periods, each student worked with a different intervention. For example, when Student A was working with the video modeling intervention, Student B was working in the Social Story intervention, and vice versa. The total number of occurrences were tallied for each period, and presented in graph form.

Results

All results, including individual mouth noise occurrences and average occurrences, will be displayed in a line graph format. The numbers provided are the total number of behavior occurrences during one, four-hour school day. The four total hours were summarized from the amount of time the student spent in the self-contained classroom. Data was not collected during the time the student was present in homeroom, lunch, recess, or specials.

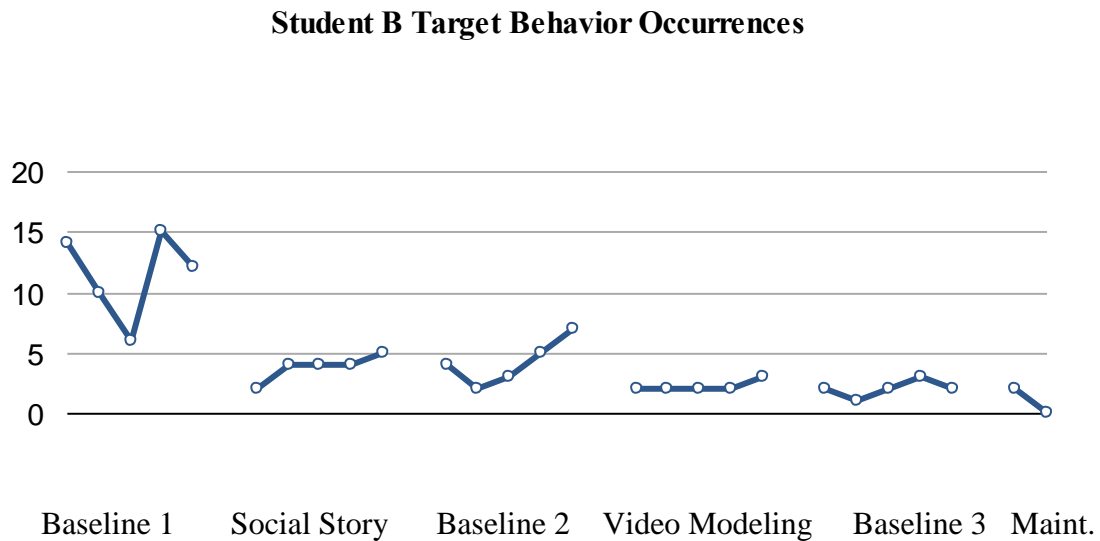
Figure 1. Student A Target Behavior Occurrences



Student A performed a considerable amount of mouth noises during the first baseline data collection period. A range of 21 to 39 mouth noises occurred during a four hour school day, averaging 30.2 occurrences across the five day collection period. During the first intervention period which, for this student was video modeling, the number of occurrences dropped considerably to a range of 15 to 26 mouth noises per day, averaging 18.8 across the five day collection period. After the first intervention period, a second baseline period lasted for five days, and showed a increase in the amount of target behavior occurrences. The range of behaviors was 22 to 40 during the school day, averaging 32 occurrences across the second baseline data collection period. During the second intervention period which, for this student was a Social Story, the number of behavior occurrences decreased to a range of 26 to 30, averaging 26.8. This average number of occurrences, while a decrease from both baseline data averages, is not as significant as the decrease to 18.8 during the video modeling intervention period. The last baseline data collection period lasted five more days, and brought a range of 24 to 31

occurrences each day, averaging 28.4 behavior occurrences across the week. This third baseline data average, while an increase from the prior intervention period, was not as drastic as the increase from the first intervention to the second baseline period. Lastly, a two day maintenance period was established, two weeks after the final baseline data collection period ended. During this maintenance period, behavior occurrences were 30 and 33, averaging 31.5 for the two day period. This maintenance period showed an increase from the previous data collection periods, only slightly lower than the highest average, the second baseline period.

Figure 2. Student B Target Behavior Occurrences



Student B displayed a range of 6 to 15 target behavior occurrences, averaging 11.4 occurrences across the five day, first baseline data collection period. During the first intervention period which, for this student was a Social Story, the student showed a significant decrease in mouth noise incidents, with a range of 2 to 5 each day, averaging 3.8 occurrences during the five day data collection period. During the second baseline period, Student B displayed a slight increase of occurrences, ranging from 2 to 7, and

averaging 4.2. This increase, while notable, was significantly lower than the original baseline collection period. The second intervention period which, for this student, was video modeling, showed the greatest decrease of behavior occurrences, ranging from 0 to 3 and averaging 2.2 across the five day collection period. The third baseline period did not show much change in the amount of behavior incidents, with the range of occurrence from 1 to 3 and the average at just 2 occurrences during the five days. The total amount of mouth noises during the two day maintenance period also brought very little change, with a total of 2 and 0 occurrences over the two days, averaging 1 incidence during maintenance.

Figure 3. Target behavior averages for each period of study

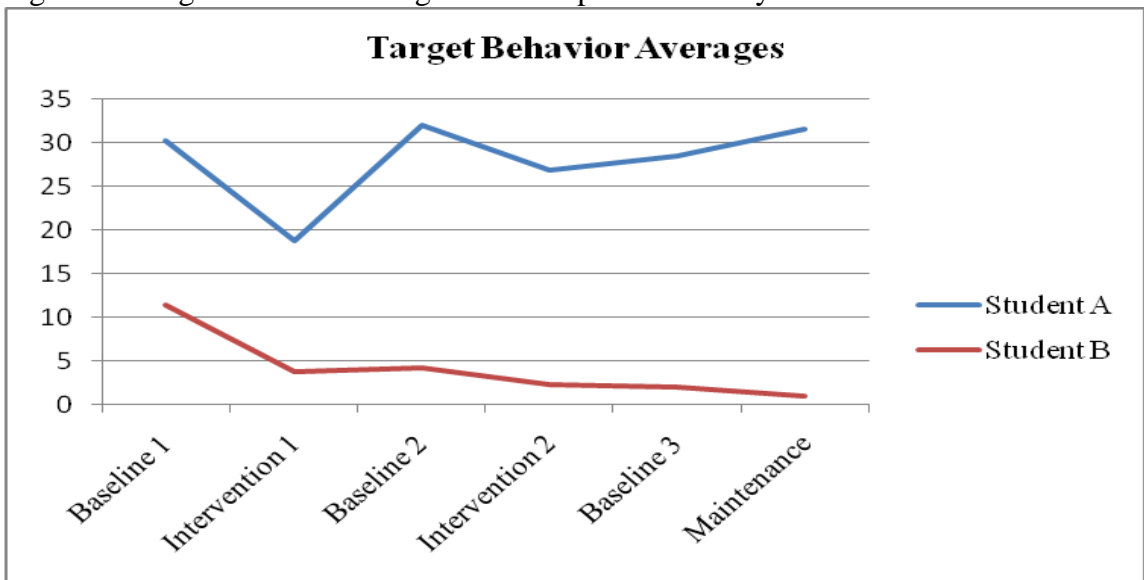


Figure 3 displays the averages for each student during each period of the study. Intervention 1 consisted of video modeling for Student A and a Social Story for Student B and Intervention 2 consisted of a Social Story for Student A and video modeling for Student B. Each period lasted for five days, with the exception of the maintenance period, which lasted for two days.

Figure 4. Intervention Frequency

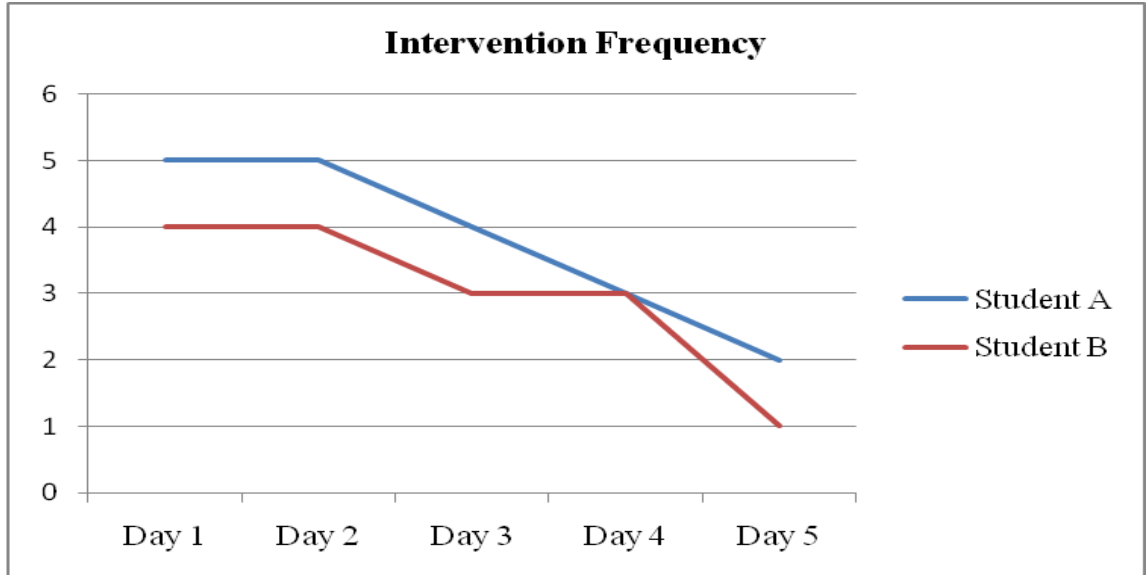


Figure 4 displays the frequency with which the interventions were presented. Both types of intervention were presented an equal number of times, relative to each student. For example, during the first intervention period, Student A viewed the video 5 times on the first day it was introduced, 5 times of the second day, 4 times on the third day, 3 times on the fourth day, and 2 times on the fifth and final day. The number of presentations during the second intervention period remained exactly the same; Student A read the story 5 times on the first day, 5 times on the second, and so on. The number of presentations was dependent upon the total number of behavior occurrences during the first baseline data collection period. Because Student A had more displays of the target behavior, his interventions were presented more often at first, and decreased as time went on. Student B showed a less frequency display of target behaviors so her intervention presentations were less frequent than Student A, and decreased as time went on.

Chapter 5

Discussion

Review

In this study, the effectiveness of video modeling and social stories was compared when attempting to decrease inappropriate behaviors in students with multiple disabilities. Two students were chosen from a self contained classroom because of a similar inappropriate social behavior, namely mouth noises. The two intervention data collection periods were presented between three baseline collection periods, each collection periods lasting five days each. The interventions were presented in an alternating fashion; that is when Student A was exposed to Video Modeling, Student B was exposed to a Social Story, and vice versa. Two weeks after the study, data was collected during a two day maintenance period to assess lasting effects of the interventions.

Because of research presented in Chapter two, it was not surprising that both video modeling and Social Stories proved to be effective methods of intervention for both students. The first baseline collection period showed both students exhibiting a much higher number of occurrences of the target behavior than during any other collection period. Occurrences of the target behavior decreased during each of the intervention periods, and while occurrences increased during the second and third baseline collection periods, the amount of occurrences rarely equaled the original total. However, the question to be answered was not if the two interventions were effective, but rather which one was more effective.

As stated in Chapter 1, it was hypothesized that Video Modeling would be a more effective method of intervention as it engages more senses than do Social Stories. In this study, that seemed to be the case. While both interventions were effective, the amount of occurrences of the target behavior displayed by Student A during the video modeling intervention decreased to 62% of the first baseline and during the Social Story intervention, to only 89% of the first baseline. Similarly, the amount of occurrences of the target behavior displayed by Student B during the video modeling intervention decreased to 19% of the first baseline and during the Social Story intervention, to only 33% of the first baseline. This data suggests that although both Video Modeling and Social Stories can be effective for other children, the use of Video Modeling may be more efficient and successful when attempting to decrease instances of inappropriate social behavior.

Chapter 2 reported on several peer reviewed research articles that discussed the effectiveness of Video Modeling and Social Stories. However, very few of those articles mentioned the two intervention together. Those that did seemed to use the intervention together to achieve the desired result; that is, Video Modeling and Social Stories were used either consecutively or simultaneously. Used together, these two interventions can work to decrease inappropriate behaviors, which is not surprising considering that when used alone, they accomplish the same goal. This study, while similar, matched the interventions against each other to determine which could possibly become more effectiveness in attaining a lower display rate of inappropriate social behaviors.

Discussion of the study

The results of this study supported the original hypothesis; however, there are a small number of limitations that must be noted. First, this study dealt with a very small group of students due to the individuality of students. To effectively compare the two types of interventions, it was important to compare the same type of behavior in all participants. The self-contained classroom in which the chosen students were placed was composed of only four students in all, making it difficult to identify a behavior that was constant among all the children. Therefore a small sample size was chosen to keep consistency when measuring a particular behavior. Second, it was difficult to monitor the students' output of target behavior when he/she was out of the classroom. While the number of incidents of the target behavior seemed to occur frequently enough in the special education classroom to attempt to decrease them, it is unknown how often the behavior was occurring outside the classroom in homeroom, lunch, or specials. Third, the cause of the target behavior was unknown and, depending on the cause, these types of interventions may not have been the most appropriate when trying to decrease the behavior. For example, Student B's shushing mouth noises seemed to occur during transitions in and around the classroom. The cause of this behavior could have been an overwhelmed sense of sensory stimulation, making it extremely difficult to extinguish the behavior as the child may or may not have complete control of it.

While the results of this study were positive, there are a few changes that could be made to enhance the conclusions. First, conducting the study with a larger sample size might have shown different results. This is not to say that the results would have been the same or better, but that there would have been more examples to examine. Second,

keeping the interventions the same for each student during each intervention period would have made the data a bit easier to analyze. For example, instead of alternating the interventions for the students, all students involved could be exposed to the same intervention at the same time, so that the first intervention period would be Video Modeling for all, and during the second intervention Social Stories would be used for all. Third, a different, more easily explainable target behavior could be chosen to eliminate confusion over what constituted the behavior. Also, a different behavior may have eradicated the possibility that sensory stimulation was causing the behavior. For example, behaviors such as calling out in class or pinching another student are more easily definable and are not usually present due to an underlying cause. Fourth, taking a longer time to conduct the research may have given more data with which to work, making any conclusions more substantial.

Conclusion

In this study, two questions were to be answered. First, do the interventions work to decrease the inappropriate behavior in the children with multiple disabilities? After reviewing the data from each of the intervention periods and the three baseline collection periods, both interventions decreased the amount of target behavior occurrences to some extent. Second, the overall question in this study was: when using video modeling and Social Stories, which intervention is most effective in decreasing inappropriate behaviors in students with multiple disabilities? According to the percentage of occurrences from the original baseline to the occurrences during each of the interventions, it seems that in this study, Video Modeling was more effective in decreasing inappropriate behaviors

than were Social Stories. This statement is not to say that Social Stories are ineffective, but that Video Modeling may be more efficient and successful with some students.

As with most behavioral interventions, there are pros and cons to each of these interventions. Video Modeling seems to engage the students more quickly and for a longer time. The visual and auditory stimuli draw the student in and hold the student's attention, assisting in the comprehension of a certain lesson or skill. Also, because of the various ways to implement Video Modeling, instructors may feel less inhibited when preparing this type of intervention. There are many options when choosing a type of Video Modeling, such as choosing peer, adult, or self modeling, or showing the video before the child's performance as opposed to during the child's performance. These options may help the instructor to feel more comfortable with what they are creating. While these are certainly benefits to Video Modeling, this method is a more time consuming intervention, requiring the instructor to plan out exactly what footage is needed, record said footage, and if desired, edit and record a voice track to the video. Depending on the amount of preparation time an instructor has, this type of intervention may or may not be a logical choice. To save time, some may opt for a commercially made video; however, this type of Video Modeling, while helpful, is not as specific to certain target behaviors as Video Modeling sometimes needs to be.

Social Stories have some different pros and cons. This type of intervention allows the student to learn in a way that is similar to many academic instructional techniques. Students are familiar with sitting and attending to books, and can sometimes anticipate the common comprehension questions that are associated with them, helping the student tune in to the important pieces of the story. As far as instructor demands are concerned,

while slightly time consuming to gather photographs for the Social Story, writing the script is much easier and quicker, as long as the target behavior is clearly defined. However, students may quickly lose interest in a story without visual and auditory stimulation. Quite simply, students may find the Social Story boring and as “just another book”.

The decision between Video Modeling and Social Stories is one that each instructor must make, depending on the types of students involved, the target behavior, time allotted, and equipment available. As stated before, each method has pros and cons to consider, as well as peer reviewed research to substantiate their effectiveness. This study found Video Modeling to be more effective and efficient than Social Stories when attempting to decrease inappropriate social behaviors in students with multiple disabilities.

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Appendix A Social Stories



During the school day, we go many different places in the building. Sometimes we visit the office, the cafeteria, and the gym.



We have to go through the hallways to get to these different places. The hallways often have a lot of people in them.



When I walk into the hallway, there is a lot of noise and movement. This makes me a little excited and a little scared.



When I feel excited and scared, sometimes I make noises with my mouth. It feels good, but I know that most children do not make those noises. When I make the noises, sometimes the other children look at me strangely because they don't know what I mean.



Instead of making these noises, I can talk to the person near me. I can say, "I am excited!" or "I am a little scared". When I say these sentences, other people will understand how I'm feeling.



Now, when I go into the hallways, I know that there might be a lot of noise and people. But, I have words that I can use to tell people how I'm feeling, instead of making noises.

Student A Social Story

Wherever I am, I like to make mouth noises. Sometimes I am thinking about things other people have said. Other times, I am thinking about things I like to do. When I think about these things, I say them out loud.

It makes me happy to talk about things I like or things people say. I like to hear things that make me happy, rather than other noises in the room.

Even though it makes me happy to do this, I know that other children do not like it. My friends are confused when they hear me do this.

Instead of making these noises, I can cover my mouth with my hand, or I can get a small ball to play with, so that I can think of something else.

Now, when I want to make mouth noises, I have other things to do instead of talking. Other children will not be confused when they see me covering my mouth or playing with a small ball because they understand what that means.

Appendix B Video Scripts

Student A Video Script

Walking into classrooms. Watch the children walk into the classroom. They are walking calmly and quietly. They are keeping their hands to themselves and they are not making any noise.

Sitting in the classroom. See the children sitting in the classroom. They are looking at their teacher, sitting in their chairs, and not making any noise.

Walking in the hallway. See the children walking in the hallway. They are walking in a straight line with their hands by their sides. They are not skipping, or jumping, or yelling.

The library. When children are in the library, they are very quiet. They get their books, walk in a line to the door, and wait quietly for their teacher.

Visiting the office. Sometimes, we visit the office during the school day. When we come into the office, we walk quietly to where we are going. We get what we need and turn to leave. If we see a teacher, we do not stop and talk. We quietly wait, and walk out of the office.

We visit many places during the school day. We must stay quiet each place we go, and not make any mouth noises. School is a place for learning, so it must be quiet.

Student B Video Script

Walking in the classroom. See the children walking in the classroom. It is time for snack. They push their chairs calmly to the table. They walk to get their snack. They do not skip or jump. They get what they need, turn, and quietly walk to the table.

Listen to the children show you the right things to say:

Student 1: There's a lot of people in the hallway!

Student 2: I know - I'm a little excited.

Student 1: Me too, but I'm a little scared.

<they walk out the door, without making noise>

Visiting the office. During the school day we can visit the office. We walk into the office quietly. We get what we need and turn to leave. We do not skip, or jump, or make mouth noises.

Sitting in the classroom. See the children walk into the classroom. They are not running or skipping. They are walking calmly. They walk past the other children and do

not stop to talk or make noises. They get into their seats and look at their teacher. They are ready to learn.

We go many places in our classroom and around the school during the day. Sometimes there are few people and sometimes there are many people. Even if there is a lot of movement and noise, we must stay quiet and not make any mouth noises.