2008

# Enhancing non-academic classroom skills for young students with disabilities through social stories

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## Recommended Citation

Kirkbride, Katherine Sue, "Enhancing non-academic classroom skills for young students with disabilities through social stories" (2008). *Theses Digitization Project*. 3564.
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ENHANCING NON-ACADEMIC CLASSROOM SKILLS FOR

YOUNG STUDENTS WITH DISABILITIES

THROUGH SOCIAL STORIES

A Thesis

Presented to the

Faculty of

California State University,

San Bernardino

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

in

Education:

Special Education

by

Katherine Sue Kirkbride

June 2008

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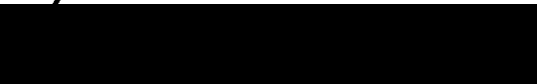San Bernardino

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by

Katherine Sue Kirkbride

June 2008

Approved by:

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Dr. Judith Sylva, First Reader        Date

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ABSTRACT

Non-academic classroom skills enhance the ability of a
student to interact appropriately with peers and adults.
The ability of young children to follow routines,
transition, and engage socially can factor into school
success. In this study, three participants with a variety
of disabilities were selected from a special day class.
Non-academic skills were identified with the attempt of
increasing these proficiencies and decreasing challenging
behavior through social story interventions. The
effectiveness of the interventions was measured through
data collection and analysis. Two participants increased
appropriate behavior in the school setting while the third
participant's behavior did not undergo significant
alteration. Classroom implications include methods of
decreasing behavior and increasing pro-social behaviors
within a school setting.

## ACKNOWLEDGEMENTS

DEDICATION

This thesis is dedicated to five people who have created and shaped the person I am today. First, I dedicate this to my Papa and Grammy for seeing the value of education, supporting my education financially, and teaching me the value of hard work. Next, I would like to dedicate this to my parents, Barb and Mike, for the emotional support and teaching me to believe I can do anything I set my mind to. Finally, I would like to dedicate this to my husband, Dan, for endless support, encouragement, and all the cooking, cleaning, and millions of other things you have done to help me achieve my goals.

TABLE OF CONTENTS

CHAPTER ONE

INTRODUCTION

Challenging behaviors in young children can create a
multitude of difficulties in life (Powell, Fixsen, Dunlap,
Smith, & Fox 2007). Aggression, noncompliance, tantrums,
and defiance are some of the social behaviors that cause
children to be referred for special services.
Unfortunately, the cycle of consequences for those with
poor social behavior does not end with childhood. Tremblay
(2000) notes the last 100 years of research on aggressive
behaviors has shown aggressive behaviors over time to be as
stable as intelligence. Challenging behaviors can cause
peer rejection, punitive interactions with teachers, and
school failure leading to unemployment (Powell et al.,
2007). Rates of externalizing behavior problems among
kindergarten students range from 8% to 25% of the
population (West, Denton, & Reaney 2000). Many of the
behaviors previously mentioned are common among children
with Autism Spectrum Disorder (ASD) and begin in pre-school
(Batshaw, 2002).

Autism Spectrum Disorder (ASD) is associated with
poor social behavior. The Diagnostic and Statistical

1

Manual of Mental Disorders- IV-TR (2000) lists impaired social interaction, communication, and behavior abnormalities as the three deficiencies required for diagnosis of ASD. Among children with autism, the social skills and behaviors can range from mild to severe (Crozier & Sielo, 2005). The social behaviors of children with ASD can affect their ability and desire to interact appropriately with peers. Overall, the social effects of ASD are a "severe disruption of the normal developmental processes" (Leaf & McEachin, 1999, p. 7). Theory-of-mind deficit is thought to be related to some of the social and behavioral oddities of children with ASD.

"Theory of mind refers to an understanding of mental states- such as belief, desire, and knowledge- that enables us to explain and predict others' behavior" (Miller, 2006, p. 142). Because of this deficit, students with ASD find it more difficult to correctly identify jokes, lies, and white lies than their age-appropriate peers (Kaland, Moller-Nielson, Smith, & Mortensen, 2005). In typically developing children, theory-of-mind skills generally develop between age 3-4 and continue to advance in sophistication through age 6 (Papalia, Olds, & Feldman, 2004). Papalia and colleagues (2004) also note that

2

children rated high in social skills and language development tend to develop theory-of-mind skills sooner. Since social skills and language are noted weaknesses in children with ASD, it stands to reason that theory-of-mind skills would be significantly delayed in these students.

Social story intervention is a relatively new approach at least loosely based on tackling theory-of-mind deficits (Kuoch & Mirenda, 2003). Because social stories explicitly teach how others feel, they are becoming an increasingly popular intervention to bridge the gap between learning readiness skills and social skills (Crozier et al., 2005).

The purpose of the present study is to examine the relationship between a social story intervention and non-academic social behavior in young students in a special day class. When individual undesired behaviors are taken into account along with functional equivalents, identified through a functional behavior assessment, it is hypothesized that undesired behaviors will decrease with a corresponding increase in appropriate behavior. Consideration will be given to the integrity of social story implementation in addition to the ability of students to follow delayed instruction and comprehend the story. Additionally, the student's correspondence ability for

auditory instructions and performing behaviors will be taken into account before students are selected for the study. It is believed that this information will contribute to the field by providing support for the effectiveness of social stories used as a behavioral intervention. It is also believed the information will help practitioners to more effectively implement social story interventions by maintaining social story integrity and identifying functions of behavior before implementation.

CHAPTER TWO

LITERATURE REVIEW


Social Stories

In the 1980s, Carol Gray, a special education teacher in Michigan, began the use of social stories with her students. The Gray Center for Learning and Social Understanding explains that a social story,

> describes a situation, skill, or concept in terms
>
> of relevant social cues, perspectives, and common
>
> responses in a specifically defined style and
>
> format. The goal of a Social Story is to share
>
> accurate social information in a patient and
>
> reassuring manner that is easily understood by
>
> its audience (Gray, 2007, p.1).

Even though social stories are relatively new, a small body of studies exists that seek to identify causal relationships between social stories and increased social skills. The existing research has investigated the uses of social stories to help students adjust to change, enhance non-academic skills, or reduce problem behavior (Adams, Gouvousis, VanLue, & Waldron, 2004; Hagiwara & Myles, 1999; Kuoch & Mirenda, 2003; Kuttler & Myles, 1998; Lorimer,

Simpson, Myles, & Ganz, 2002; Norris & Dattilo, 1999; Rogers & Myles, 2001; Reynhout & Carter, 2007; Scattone, Wilczynski, Edwards, & Rabian, 2002; Swaggart, Gagnon, Bock, Earles, Quinn, & Myles, 1995; Thiemann & Goldstein, 2001). Reducing problem behavior and/or teaching non-academic replacement behavior appear to be the most commonly studied functions of social story interventions at this time.

Before writing a social story, it is essential to gather appropriate information. "The process of gathering information is often more important than the Social Story™ product" (Howley & Arnold, 2005 p. 29). Antecedents, behaviors, and consequences must be fully assessed in order to create an effective social story (Howley & Arnold, 2004). Sansosti, Powell-Smith, and Kincaid (2004) assert the process of developing a social story is similar to completing a functional behavior assessment (FBA). An FBA determines where, when, and why a behavior problem occurs. When interventions are implemented disregarding behavior function the effects can be "insufficient, ineffective, and even harmful" (Cooper, Heron, & Heward, 2007, p. 503). In their review of 143 FBA intervention studies, Ervin, Radford, Bertsch, Piper, Ehrhardt, and Poling (2001) found

that all but two interventions reported desired behavior

change with the implementation of a FBA based intervention.

A functional behavior assessment is widely considered to be

a best practice for behavior interventions as evidenced by

its mandated use in the Individuals with Disabilities

Education Act (IDEA) 1997 (Ervin, et al., 2001).

After hypothesizing a function, it is essential to

identify and teach a functionally equivalent replacement

behavior in order to decrease undesired behavior.

Specifically, the behavior being taught should get the same

result with equal or less effort than the undesired

behavior (Cooper, Heron, & Heward, 2007). Regardless of

using Gray's specific framework or conducting a FBA, the

success of the social story depends on the correct

contextual function of the behavior being addressed

(Sansosti et al., 2004; Howley & Arnold, 2005).

In addition to the mindfulness of behavior function,

it is also recommended the author of the social story

adhere to Gray's specific guidelines for writing a social

story. First, the story must be at the student's

comprehension level. The story should also be written from

the point of view of the child. Gray (2007) originally

employed four main sentence types in writing a social

story: descriptive, directive, perspective, and affirmative. Descriptive sentences define variables of the context. Directive sentences explain and emphasize the desired alternative behavior. Perspective sentences relate to theory-of-mind in letting the student with ASD gain insight to how others feel about the situation. Finally, the affirmative sentences give beliefs of people or cultures.

Gray (2007) later added two more types of sentences making the formula for social stories more sophisticated. These two new types of sentences are control and cooperative. Control sentences are personal statements written by the student to help recall strategies while cooperative sentences tell the student what others will do to assist the student in learning the new behavior or skill. In their meta-analysis of eleven studies regarding the efficacy of social stories, Reynhout and Carter (2006) discovered that 90% of the studies that included samples of their social stories also had a seventh type of sentence. They termed these sentences "consequence sentences" as they stated the result of the student's action(s).

Gray (2007) has a specific ratio for determining how many of each sentence should be in a well-written social

story. A complete social story consists of two to five descriptive, perspective, and affirmative sentences for every one directive or control sentence. Illustrations may or may not be used within a social story. When social stories were first used in the early 1990s, illustrations were not recommended. However, along with increasing research supporting the use of visual supports for students with ASD, illustrations are now suggested useful to the social understanding of the story (Reynhout & Carter, 2006).

Once a social story is written, there are three main ways it can be implemented. First, if the child is literate, the teacher can read the story to the student the first time and from that time on, the student reads the story to him/herself. If the child is unable to read, an adult can read the story or a recording of the story can be made with an auditory "turn page" prompt. The final way to implement social stories is through video modeling. This involves videotaping sequences showing desired alternative behavior(s) (Gray, 2007). Sansosti and colleagues (2004) also mention that a social story can be implemented though a computer.

An essential step after the implementation of the social story is checking for comprehension. The adult implementing the social story can either elicit verbal or written responses to comprehension questions. Gray (2007) also recommends a checklist to check for comprehension. Gray's emphasis on multiple readings and comprehension checks are supported by early literacy research as well. Morrow and Gambrell (2001) cite several studies that support multiple readings. One obvious effect of multiple readings is an increase in comprehension. Students who have listened to the same stories multiple times not only become more interpretive and evaluative, but also increase their ability to attempt to read stories independently and reenact events (Morrow & Gambrell, 2001). Reenacting the events of a social story is just what students need to do in order for it to be successful. Even though the theoretical evidence suggests social stories can be an effective social behavior intervention, the available research shows mixed reviews.

Social Story Research

Studies using a social story intervention have been completed across the world using all ages and varying

10

diagnoses along the autism spectrum. Eleven studies were identified though PSYCH INFO and ERIC search that appeared to show significant relevance to the field of social story research. The studies varied in size from one to five participants. The ages of students ranged from 3 to 15. Most students had mild to moderate autism, however, one student had Fragile X Syndrome (Kuttler et al., 1998), one had Asperger's Syndrome (Rogers & Myles, 2001), and one other subject was diagnosed with pervasive developmental disorder (Swaggart et al., 1995).

Study design and targeted behaviors varied across the studies. The two most popular designs were an ABAB baseline/intervention (Kuttler et al., 1998; Lorimer et al., 2002; Adams et al., 2004) and multiple baseline (Hagiwara & Myles, 1999; Scattone et al., 2002; Thiemann & Goldstein, 2001) single subject designs. Other studies used various design methods. None of the identified studies used a control/comparison group. The length of the studies ranged from one participant's baseline and intervention lasting 12 days (Kuoch & Mirenda, 2003) to 72 days (Hagiwara & Myles, 1999). All types of behavior were addressed from adaptive (e.g. hand-washing (Hagiwara & Myles, 1999)) to reducing self-stimulatory tapping

11

(Reynhout, 2007). Some of the other behaviors addressed include intervening during precursors to tantrums (Kuttler et al., 1998; Lorimer et al. 2002), sharing toys (Kouch & Mirenda, 2003), response to verbal direction (Rogers & Myles, 2001), and securing and initiating attention (Thiemann & Goldstein, 2001).

Even though some of the measures and study design reported had questionable validity (which will be discussed in greater depth later), only one of the eleven studies reported results that did not indicate a positive outcome (Norris & Dattilo, 1999). Most of the studies reported at least two outcomes. Some outcomes increased pro-social behavior, and others showed a decrease in challenging behaviors (Reynhout & Carter, 2006).

Of the studies that increased pro-social behavior, Hagiwara and Myles (1999) reported one subject had 100% task completion on hand-washing, another subject achieved 92% task completion, and the third subject partially improved on-task behavior. Rogers and Myles (2001) similarly reported positive behavioral gains in response to verbal directions and increased promptness to class. Swaggart et al. (1995) and Thiemann and Goldstein (2001) report increased appropriate social interactions.

In addition, some studies reported a reduction in inappropriate behaviors. Adams et al. (2004), Kouch and Mirenda (2003) and Scattone et al., (2002) saw a reduction in the target disruptive behaviors including crying, screaming, chair tipping, and hitting for all participants. Similarly, Reynhout and Carter (2007) saw a decline in self-stimulatory tapping after the social story intervention. Both Kuttler et al. (1998) and Lorimer et al. (2002) reported very similar findings. Both found that precursors to tantrum behavior decreased when social story interventions were put in place and were followed by a marked increase in precursors to tantrums post-intervention. Although the findings of these eleven studies are overwhelmingly positive, limitations are present in the existing body of research.

## Conclusions

Social stories are beginning to show great promise as a tool to promote positive social behavior and decrease challenging behavior. However, the generalization of these studies is limited at this time. Before the application of social stories can be recommended, it is important to know the limitations.

13

Limitations

The body of research on social story interventions is relatively small at this time. As social stories have only been around since the early 1990s, it is natural that the literature on the topic is limited, but increasing in recent years.

As previously noted, the sample sizes of all of the social story interventions were quite small. Of the eleven studies used in this synthesis, six had only one subject, four had three subjects, and one had five subjects (Reynhout & Carter, 2006). It is impossible to generalize with such small sample sizes. However, since the implementation of a social story is so individualized it may be difficult to have a large scale intervention.

Furthermore, there is a specific formula for writing a social story. However, it is not always followed when writing stories to be used in an intervention. Of the eleven cited studies, only four follow Gray's basic format for writing a social story. Two of the eleven did not show samples, and the rest had inappropriately modified social stories (Reynhout & Carter 2006). Additionally, even though Gray (2007) states comprehension checks are an important part of social story implementation, only three

out of eleven studies had a comprehension check as part of the intervention.

There are also confounding variables within the studies cited. There were additional strategies used in many of the studies ranging from discrete trial type behavior therapy to verbal prompts while reading the social stories (Reynhout & Carter, 2006). It is impossible to state with certainty that the social story interventions alone are responsible for behavior change when additional interventions are occurring concurrently. In addition, long term effects of social story interventions are weak at best. Most studies did not allow time to observe long term efficacy. Only a small handful of the studies even report maintenance of skills. In fact, Lorimer et al. (2002) and Kuttler et al. (1998) found that when the social stories were removed behaviors returned to baseline rates.

Some critics question the reliability of tools available for assessing social growth. Landa (2005) points out that very few formal assessments exist that rate social language. Many of the assessments given to determine social language growth are parent/caregiver questionnaires. Other popular methods of reporting social growth are parent/caregiver anecdotes. The validity of these measures

is questionable. Many of the studies create their own measure of assessing the social language production of the subjects. These measures may be biased if they were not group-normed. Additionally, Hughes and Leekam (2004) point out that the theory-of-mind deficits are not defined clearly in their relationship to social skills. Theory-of-mind skills are "multifaceted" and researchers are often contradictory in the skills they choose to assess.

Finally, social stories make several assumptions about the cognitive processing abilities of the consumer. Assumptions are made that a student can effectively follow an instruction in a delayed circumstance. Also it is assumed the student has correspondence between what he/she will hear or say and later, do. It is difficult to define and measure the correspondence between verbal and non-verbal behavior (Matthews, Shimoff, & Catania, 1987). The ability of children to demonstrate correspondence between what is said and done should be considered before a verbal behavior intervention is implemented.

Recommendations

Social stories show promise as a successful behavioral intervention. However, before social stories can be widely recommended, more research needs to take place. To begin

with, theory-of-mind in typically developing children begins between ages three and four. It would stand to reason that all students with disabilities functioning cognitively below age 4 may benefit from social stories. However, the current research is limited primarily to students with ASD. Additionally, in the studies of students with ASD, only two studies had participants under the age of six. More research needs to be done with children five and under with all types of disabilities and those typically developing. Additionally, early literacy research promotes reading within a small group setting to increase comprehension (Marrow & Gambrell, 2001). However, most social story interventions are done one-on-one. It would be interesting to see if a group story would have a greater effect on student behavior.

The sample sizes for future research should be larger to promote generalization. Additionally, close attention should be paid to research design. Social stories need to be accurate with guidelines set by Gray and there should be no additional interventions that cannot be held constant for the purposes of the study. Finally, the long term efficacy of social story interventions needs to be examined. Participants should be observed in their typical

setting performing their new skills in addition to seeing if their skills will transfer to novel situations. There is still much research to be done regarding social stories as a social/behavioral intervention.

CHAPTER THREE

METHOD


Participants

After obtaining approval from the California State
University San Bernardino Institutional Review Board,
participants were selected for the study (see Appendix A).
Participants for this study were recruited from the
researcher's classroom in Palm Springs Unified School
District. The participants all were enrolled in an early
intervention program special day class at one elementary
school and all had a qualifying condition entitling them to
an Individualized Education Program (IEP). For inclusion
in the study, the participants demonstrated a deficit in
non-academic classroom skills that impaired the learner's
ability to follow the routine, get needs met, or interact
with peers. The participants also demonstrated the ability
to attend to stories, recall and predict events, and
perform tasks after instructional delay through several
informal observations. The above skills were deemed
prerequisite for the efficacy of a social story
intervention by the researcher. After focus participants

were identified, guardians gave informed consent for their child to participate in the study.

The first participant, Jeremiah, was five years, seven months old and in a special day class mainstreaming into a general education kindergarten with an instructional aide three times per week. Jeremiah is a Caucasian male diagnosed with orthopedic impairment due to cerebral palsy. Jeremiah enjoyed helping in the classroom and getting attention from peers and adults. He communicated in four-to-five-word sentences.

The second participant, Angel, is a Hispanic male age six years, two months. He was also in a special day class and mainstreamed into general education kindergarten with an instructional assistant two days per week. Angel qualified for special education under the category of speech/language impairment. Angel's mother reported an independent diagnosis of autism that is currently not a qualifying condition on his IEP. Angel spoke in four-to-five-word sentences, and enjoyed independent activities.

The third and final participant, Ethan, is an African American male, age five years, three months. Ethan was a pre-kindergartner and attends a pre-kindergarten/kindergarten special day class. He qualified

for special education under the diagnosis of autism. Ethan communicated in three-to-four-word sentences and enjoyed peer and adult attention.

All participants were low income as evidenced by their qualification for the free lunch program. Additionally, the three boys were emerging in their ability to identify sight words and letters. Jeremiah, Angel, and Ethan all appeared to enjoy listening to stories as indicated by their attending to the activity, requesting stories, and referring to familiar stories throughout the school day.

Target Behaviors

Each student had an individual target behavior based on the researcher's observations of socially significant problem behaviors or behavior deficits. The researcher conducted a functional behavior assessment (FBA) on each student to ensure appropriate social skills were targeted. Upon completing the FBA, only one participant's significant behavior (Jeremiah's) was applicable for teaching a functionally equivalent replacement behavior. For both Angel and Ethan it was determined that a focus on behavior celeration would be more beneficial.

Jeremiah yelled often during each school day when he was denied a reinforcer that he expected. The definition of "expected" for this purpose was an activity or item that Jeremiah had a history of receiving as a certain part of a routine. The target behavior for Jeremiah was yelling, and the replacement behavior is saying "It's Okay", or doing any item from his calming chart (e.g. squeezing hands, counting to 10, breathing in and out, or laying on the bean bag). Frequency data were collected on yelling and the replacement behaviors.

Angel's target behavior was an increase in manding, or requesting, to peers. Though Angel had sufficient verbal ability, he often remained quiet and did not assert himself. He had a history of letting other students touch him and take his things without defending himself and his property. In addition, even when he did not have materials necessary to complete a task he did not often spontaneously mand. Data were collected on the frequency of manding to peers and adults.

Ethan's target behavior was an increase of holding onto the line rope during in-and-out-of-class transitions. Ethan frequently let go of the rope and occasionally bolted away from the group during transition times. Duration data

were collected on the entire duration of transition, and the amount of time he was not holding the rope during the transitions. There were three transitions per day in which Ethan was expected to hold onto the rope; from the bus to the cafeteria, from the cafeteria to the classroom, and from the classroom to the bus. Each transition was calculated separately and combined to create a daily percentage of time holding and not holding onto the line rope.

## Social Story Development

In accordance to Carol Grey's guidelines, Howley and Arnold (2005) took care in identifying appropriate behaviors and conducting a FBA before writing the social stories. In addition, the researcher did not give the individual's perspective and did include phrases such as "I can" or "I will try to" in order to reduce the individual's stress and anxiety for perfection (Howley & Arnold, 2005). Furthermore, the recommended sentence ratio of zero to one directive for every two to five perspective and/or descriptive sentences was adhered to. The researcher also consulted with the school speech/language pathologist who has all three participants on her caseload and who has been

23

trained in social story implementation by Carol Gray. As

approved by The Gray Center (2007), the social stories all

contained pictures of the students engaging in situations

similar to the target situations and behaviors in the

stories. In order to protect participant confidentiality,

pictures were left out of the social story sample in the

appendix. Each story consisted of four pages of two to

three sentences with 20 point font. The first page was a

title page with the participant's picture. Each story was

laminated and bound. Comprehension questions for the adult

to ask the student were written on the back of the last

page with suggested answers. See Appendix B for sample

social story text with comprehension questions. An

additional page is added that has the reader record her

initials, date, time story was read, number of

comprehension questions asked, and number of questions the

student answered correctly.


## Setting

Social story readings took place within the daily

activities of the class. Readings took place in the

cafeteria, in all activities in the classroom, and in the

general education kindergarten. Observations of the

behaviors also took place across all aspects of the daily activities. The class contains nine students with a wide range of special needs. Two to four adults are in the classroom at all times. The social stories were read before potential problem activities for each participant and also randomly throughout the day. The social stories were read a minimum of three times daily to each participant.

Procedure and Data Collection

An AB, baseline (condition A) intervention (condition B), design was used for this study. A data collection chart was completed for each student based on his target behavior. Both Angel and Ethan also had a maintenance phase to their design because both met the criteria for mastery of their respective skill. During the maintenance phase, the social stories were available to both students, but the student had to initiate the reading of the story by asking or handing it to an adult.

Jeremiah's data chart tracked the frequency of yelling and saying "that's okay" and/or activities from the calming chart. Angel's data collection chart was a T chart where mands to peers and adults were recorded. Ethan's chart

25

collected duration data on holding onto the line rope. Baseline data were collected for four days on each student's targeted behavior. Social stories were introduced after this time and read a minimum of three times daily. Data collection was taken daily during the intervention phase as well. In addition to data collection on the target behavior, data was also collected for each reading on the ability of the participant to correctly answer the comprehension questions printed on the back of the social story.

## Reliability

Instructional assistants were trained in the data collection procedures for each student participant and their observations were used for interobserver agreement with the primary investigator. Interobserver reliability was assessed for a minimum of 20% of data collected throughout the school day. During baseline interobserver agreement was collected on 25% of sessions for all participants. During the intervention phase(s), interobserver agreement was collected on a minimum of 25% of sessions for all participants.

Reliability was calculated by dividing agreements by the total number of agreements and disagreements and multiplying by 100. Interobserver agreement for Jeremiah's yelling averaged 82% across sessions. Agreement for Angel's manding behavior averaged 91% across sessions. Agreement for Ethan's off the line rope behavior was 98% across sessions.

CHAPTER FOUR

RESULTS AND DISCUSSION


Jeremiah

As indicated in Appendix C, Jeremiah's frequency of

yelling increased during baseline.  At no time during

baseline did he say "that's okay" or use any items from his

calming chart.  Immediately following the introduction of

the social story, Jeremiah increased the amount of times he

said "that's okay" and decreased the amount of yelling

behavior.  These trends continued for the first two days of

intervention.  However, Jeremiah was then absent for two

days.  After four days of no school (including a weekend),

Jeremiah returned and had a slight increase in yelling and

decrease in saying "that's okay".  Jeremiah continued to

increase in challenging behavior to a rate comparable to

baseline.  By the end of the intervention, Jeremiah's rate

of yelling was not significantly decreased.  He averaged 4

incidents of yelling per class period during baseline and

3.2 incidents per class period during intervention.  Saying

"that's okay" did increase during the intervention, but

there was only one session in which he used his replacement

behavior more than yelling.  Jeremiah's challenging and

replacement behavior did not show significant improvement as a result of the social story intervention. However, when comprehension data was collected for Jeremiah he answered an average of 77% of the questions correctly, which is a higher percentage than either of the other participants (see Appendix D).

## Angel

As shown in Appendix E, Angel manded more to adults than peers during baseline. He averaged 5.75 mands per school day to adults and 2.5 mands per school day to peers. Immediately after the social story intervention began, Angel began manding significantly more to peers. His rates of manding to adults also increased from baseline. Based on Angel's baseline data, a criterion was set to indicate desired rates of manding to peers. The intervention would cease when Angel manded 8 times to peers during a school day for three consecutive days. Angel met this goal after the sixth day of intervention. Upon meeting the set criteria, a maintenance phase was introduced. During this phase, the social story was left in a central location in the classroom. Angel had to initiate reading the story with an adult. His manding dropped slightly during this

phase, but still maintained at higher rates than baseline. Overall Angel's targeted behavior of manding to peers increased from an average of 2.5 per day during baseline to an average of 8 per day during the two intervention phases. Although not directly targeted, Angel's manding to adults increased from an average of 5.75 mands per day during baseline to 7.75 mands per day during both phases of intervention.

Even though Angel did mand some to peers during baseline, his mands were varied during that time and included phrases like "Excuse me Ethan" and "That's my chair". Angel's social story included the phrase "I want some please" to teach Angel a general tool for getting items from peers. During and after intervention, the majority of Angel's mands to peers (as many as eight per day) were the exact phrasing from the social story. Sometimes Angel would mand "I want some please" to his peers when his peers had several items. At this point he would occasionally not complete the mand by stating the exact item he was requesting. In the first few days of the intervention, Angel would get upset when he had to ask for items. On one occasion he cried when not given a book without requesting. However, as he started to mand more he

was less emotional about not getting items unconditionally. During the maintenance phase, Angel generalized his skills beyond the classroom by asking a regular education student at recess to share her candy. This was atypical behavior for Angel as all other mands took place within the classroom setting and with peers and adults from his special day class.

By the maintenance phase, Angel would look at his story and paraphrase the story and also would recall some sentences (including "I want some please") verbatim. Data was collected on Angel's ability to correctly answer a minimum of two comprehension questions after each reading. Angel's ability to answer the comprehension questions correctly increased the more the story was read. He averaged 71% correct answers across all readings (see Appendix D).

Ethan

As demonstrated in Appendix F, baseline data for Ethan showed him holding onto the line rope for 60-93% of transitions. There are three transitions during the day for which holding the line rope is required (bus to cafeteria, cafeteria to class, class to bus). The third

transition from the classroom to the bus was the most

problematic for Ethan. During baseline, the third

transition was the most common time that Ethan did not hold

the line rope. After the social story intervention began,

Ethan quickly increased his behavior of holding the line

rope during the third transition. From the intervention on

Ethan never went below 93% of time holding the rope.

Ethan's criterion for mastery (based on baseline data) was

to hold onto the rope a minimum of 95% of the time during

transitions for four out of five days. Ethan met this goal

after five days. He then entered the maintenance phase, in

which the social story was available at his request, but he

was not required to read it. During the maintenance phase,

he sustained the rope holding behavior at 99-100%. Data

was collected on Ethan's ability to answer comprehension

questions related to the social story. He was asked a

minimum of two questions during each reading. The

percentage of questions he answered predictably increased

with multiple readings of the story. Overall, Ethan

averaged 64% accuracy on comprehension questions for all

readings (see Appendix D).

Of all the students in the intervention, Ethan seemed

to enjoy reading the story the most. Even in the

32

maintenance phase he would request the story several times

per day. Even if he did not request the story, he would

often ask where it was or would look at it. At the end of

one school day when asked what he did well that day he self

reported that he held onto the line rope. Like Angel,

Ethan was able to "read" the story himself by the beginning

of the maintenance phase. He would recall some parts

verbatim and others he would paraphrase.

## Discussion

Two of the three participants made significant

progress in increasing pro-social behaviors during the

social story intervention. Several factors may have

contributed to the less successful outcome of the one

participant (Jeremiah) and the more successful outcome for

the other two participants (Angel and Ethan).

First, Jeremiah was the only participant with an

identified challenging behavior and functional equivalent.

Both Ethan and Angel had goals of behavior celeration. In

looking at the data and anecdotal records of Jeremiah's

progress it seems that saying "It's Okay" was not an

effective functional equivalent. Jeremiah wanted to get

the job or item that he wanted immediately. Although he

was sometimes reinforced for saying "It's Okay", he was not always getting the same result that he would get when he yelled. Additionally, since Jeremiah had a significant amount of absences during the intervention, this may have also affected his progress. Jeremiah had only five days of intervention and had only 13 readings of his social story as compared to 19 readings for the other participants. However, even though he had less readings, he did answer 77% of comprehension questions correctly, a rate higher than the other two participants. Even though Jeremiah appeared to understand the content of the story, he did not make significant behavioral change based on the information.

Jeremiah also was the only participant that does not have an ASD. If social stories do operate on a deficit of theory-of-mind (Kouch & Mirenda, 2003), it is possible that simply providing Jeremiah with the perspective of others is not necessary or effective in changing his behavior. Ethan and Angel both have an autism spectrum disorder and were both working to increase a pro-social behavior. Giving them the perspective of those around them through the social story did increase their appropriate behaviors.

However, Angel's skill of increased manding is difficult to attribute to only one cause. By nature, manding is maintained by socially mediated positive reinforcement. The social story may have given Angel the words to use, but the behavior was likely maintained through receiving the items for which he asked.

On the other hand, Ethan was given no more reinforcement than usual for walking holding the line rope. All students are randomly given verbal praise as a class and individually for walking in the line. Ethan has been praised the entire school year when holding onto the rope, but he has not consistently held the rope. After the social story intervention he held onto the rope 99% of the time or more with the exception of one day. The only variable at this time was the social story. This researcher sees a causal relationship between his improved duration of holding the line rope and the social story.

The structural integrity of the social stories and use of illustrations also made the stories more accessible and reinforcing to the participants. All three participants requested the stories at multiple times during the intervention. The photograph illustrations of the students participating in the appropriate activities seemed to

35

increase the comprehension of the participants. All of the participants looked back at the pictures to answer comprehension questions in the beginning of the intervention.

The results of this study are similar to many of the social story interventions that have been conducted previously. Hagiwara and Myles (1999), Rogers and Myles (2001), Swaggart et al, (1995), and Theimann and Goldstein (2001) all reported social story interventions that promoted increased pro-social behavior. Both Angel and Ethan increased their pro-social behavior during the social story intervention. Norris and Dattilo (1999) reported the only outcome that was not positive. Their subject did not increase appropriate interactions, did decrease inappropriate interactions, and did not increase overall in number of social interactions. Similarly, Jeremiah's overall behavior change was insignificant in regards to classroom functioning.

# CHAPTER FIVE

## SUMMARY, RECOMMENDATIONS, AND CONCLUSION

### Summary

The purpose of the present study was to determine the relationship between social story interventions and increased non-academic social skills. A functional behavior assessment (FBA) was used to determine challenging behaviors for three participants within the setting of a special day class. Specific behaviors were targeted and two participants had an intervention designed to increase appropriate social behavior. A third participant had a targeted challenging behavior with an appropriate functional equivalent identified. Social stories were created utilizing the format designed by Carol Gray and illustrated with pictures of students engaging in the targeted behaviors. An AB baseline/intervention design was used to determine whether social story interventions would bring about the desired behavioral change in the selected participants. For the two participants who met the identified criterion, a maintenance phase was implemented in which the students had to initiate the reading of their respective stories.

Findings indicated that two out of three participants increased non-academic social skills at least partially due to the social story intervention. The third participant did not significantly reduce problem behavior as a result of the social story. This may be at least in part due to the functionally equivalent behavior not meeting the immediate needs of the student.

Implications

This study adds to the literature supporting the use of social stories for pro-social behavior celeration in students with autism spectrum disorder (ASD). This study is one of few to suggest that social stories can be beneficial for young children (ages 5-6) without the ability to read independently. Additionally, this is one of the few studies in the existing body of research to implement social stories in the format recommended by Carol Grey and as an intervention independent of other variables.

Furthermore, this study raises a question of the effect of social story comprehension in relationship to behavior change. The participant with the highest average comprehension score (77%) made the least improvement in behavior. However, the participant with the lowest

comprehension score (64%) made the most overall improvement in behavior.

Limitations

Several limitations exist in applying this study to other situations. First, the researcher, being the teacher in the classroom, was not blind to the purpose of the study. The researcher did have a vested interest in the participant's behavior improving. Even though data was collected in a manner attempting objectivity, it was clearly not a blind study.

In addition, the small sample size and specificity of the behaviors and social stories make this study impossible to generalize. Although the social stories did create positive behavior change in two of the three participants, it is not clear which exact aspect of the social story influenced the change in behavior. Furthermore, no long term data was collected to determine whether the students maintained their behavior change over time.

Finally, no normed assessments were given to the participants at the beginning of the study to attain cognition levels of the participants. There are no tools or procedures recommended by Carol Grey to assess whether a student can cognitively benefit from social stories. This

raises questions about what characteristics a participant should possess in order to be a candidate for social story intervention.

## Recommendations

There is still research to be done regarding the efficacy of social stories as a behavioral intervention. If social stories are being used as a behavioral intervention, the implementation and delivery of the intervention needs to become more scientific in nature. Future research should look into creating a tool for assessing the ability of students to benefit from social stories. This may include assessments of cognition, comprehension, and correspondence between saying and doing. Furthermore, those creating interventions utilizing social stories should follow the guidelines set by Carol Grey. If the guidelines are not followed it is impossible to measure the efficacy of social stories as an intervention. Since only four out of eleven studies cited had appropriately written social stories, it seems that many of the studies previously conducted were not actually "social stories" but

rather a simple narrative language based intervention
(Reynhout & Carter, 2006).

In addition, more research should be done in regards
to the effectiveness of social stories to build theory of
mind skills in young children with disabilities not
including ASD. The one student from the present study
without ASD did not make significant gains from the
intervention; however, several variables including school
absence and an inappropriately targeted functional
equivalent skill may be the cause of the lack of behavioral
change. Young students without ASD may be an area to
target in future research. The body of research for social
stories must increase before it can be considered a truly
validated practice for teaching social skills effectively.


Conclusion

Challenging behaviors in young students with
disabilities can create negative effects when not
intervened upon. It is essential for educators to have
many effective tools to address nonacademic social
behaviors within the school setting.

This study set out to identify the relationship
between social story interventions and increased pro-social

41

behavior. The researcher found that two out of three participants increased pro-social skills through a social story intervention. Although social stories appear to hold promise as an intervention for behavior change, future research is needed to determine the influential factors of social stories as a tool for behavior change.

APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

Academic Affairs
*Research and Sponsored Programs*

March 7, 2008

<table>
<tr><td>

Ms. Katie Kirkbride
c/o: Prof. Judy Sylva
Department of Educational Psychology and Counseling
California State University
5500 University Parkway
San Bernardino, California 92407

</td><td>

**CSUSB
INSTITUTIONAL
REVIEW BOARD**
Exempt Review
IRB# 07068
Status
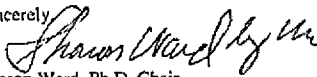**APPROVED**

</td></tr>
</table>

Dear Ms. Kirkbride:

Your application to use human subjects, titled, "Enhancing Non-Academic Classroom Skills for Young Children with Disabilities through Social Stores" has been reviewed and approved by the Chair of the Institutional Review Board (IRB) of California State University, San Bernardino and concurs that your application meets the requirements for exemption from IRB review Federal requirements under 45 CFR 46. As the researcher under the exempt category you do not have to follow the requirements under 45 CFR 46 which requires annual renewal and documentation of written informed consent which are not required for the exempt review category. However, exempt status still requires you to attain consent from participants before conducting your research.

Although exempt from federal regulatory requirements under 45 CFR 46, the CSUSB Federal Wide Assurance does commit all research conducted by members of CSUSB to adhere to the Belmont Commission's ethical principles of respect, beneficence and justice. You must, therefore, still assure that a process of informed consent takes place, that the benefits of doing the research outweigh the risks, that risks are minimized, and that the burden, risks, and benefits of your research have been justly distributed.

You are required to 1) notify the IRB if any substantive changes (no matter how minor) are made in your research prospectus/protocol, 2) if any adverse events/serious adverse/unanticipated events are experienced by subjects during your research, and 3) when your project has ended. Failure to notify the IRB of the above, emphasizing items 1 and 2, may result in administrative disciplinary action. You are required to keep copies of the informed consent forms and data for at least three years.

If you have any questions regarding the IRB decision, please contact Michael Gillespie, IRB Secretary. Mr. Michael Gillespie can be reached by phone at (909) 537-7588, by fax at (909) 537-7028, or by email at mgillesp@csusb.edu. Please include your application identification number (above) in all correspondence.

Best of luck with your research.

Sincerely,

Sharon Ward, Ph.D, Chair
Institutional Review Board

SW/mg

cc: Prof. Judy Sylva, Department of Educational Psychology and Counseling

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44

APPENDIX B

SOCIAL STORY

# I CAN ASK!
## Social Story for Angel

Sometimes my friends have things I can have too. My friends may have cookies, candy, markers, and toys that I can ask for. Usually when someone has something I also want I don't say anything. When I don't say anything my friends do not know I want some.

When I want something a friend has I will try to say "I want some please".

This will let my friends know I would like them to share.

## Comprehension Questions
### Please **ask** at least 3 of these questions with **each reading**
### Record the information on the next page

1. Can you have cookies, candy, and markers your friends have?
   (Yes!)

2. What do you have to do to let your friends know your want some?
   (ask, say I want some, etc.)

3. What happens when you ask?
   (my friends will share, I will get some cookies, etc.)

4. Why don't my friends know you want what they have?
   (I don't ask, etc.)

5. When should you ask?
   (when I want something, etc.)
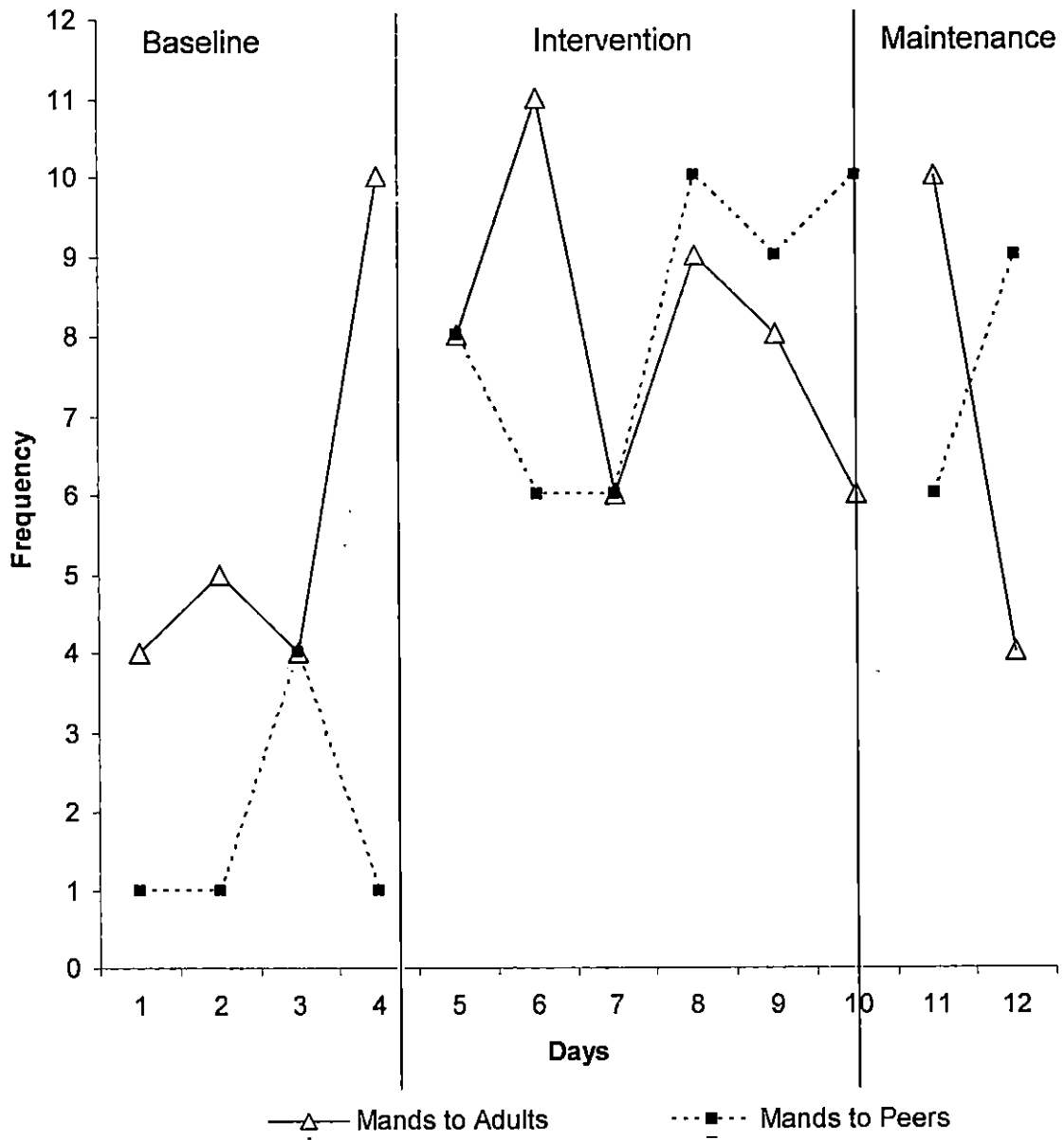
APPENDIX C

JEREMIAH RESULTS

49
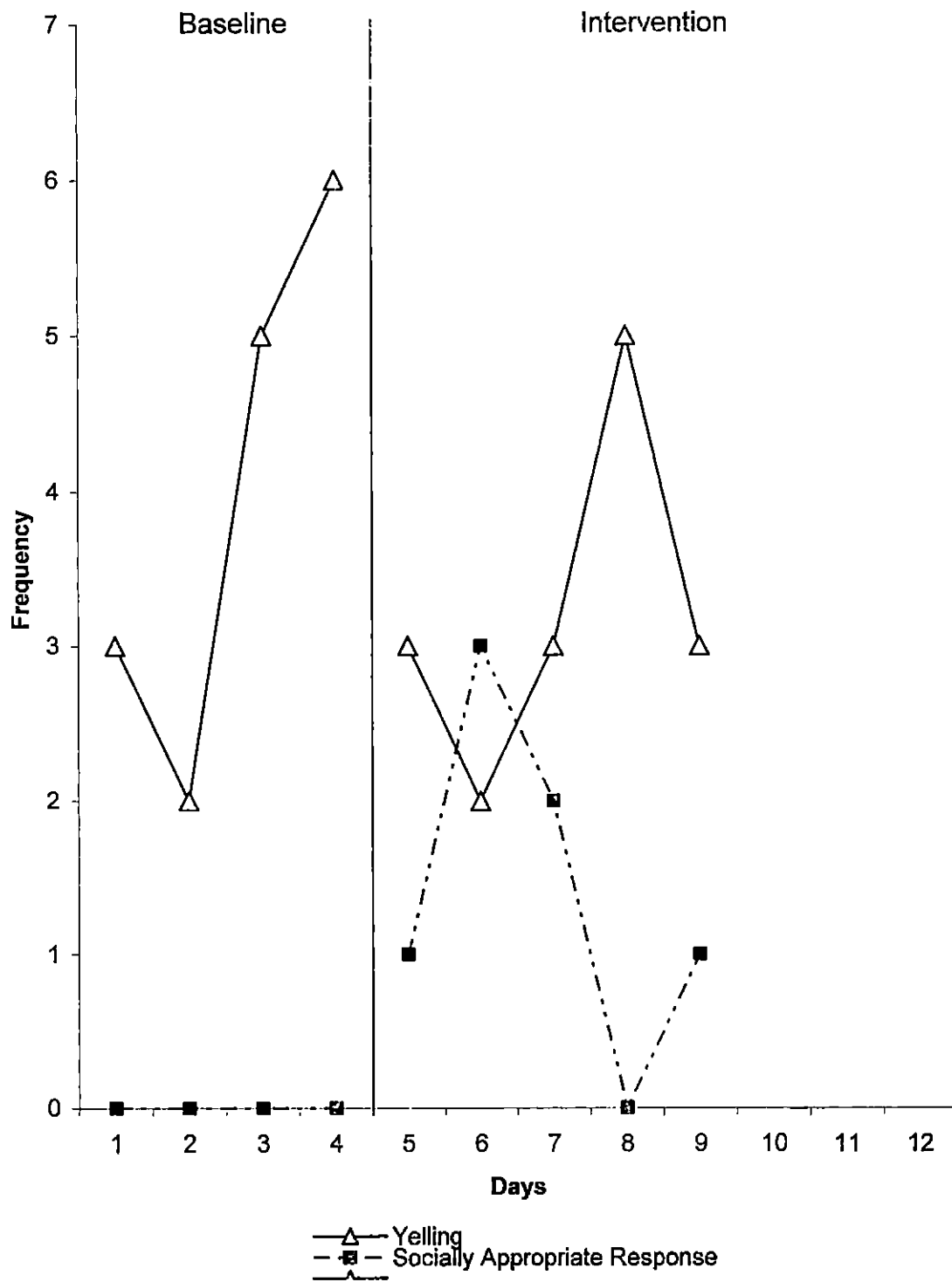
APPENDIX D

COMPREHENSION DATA
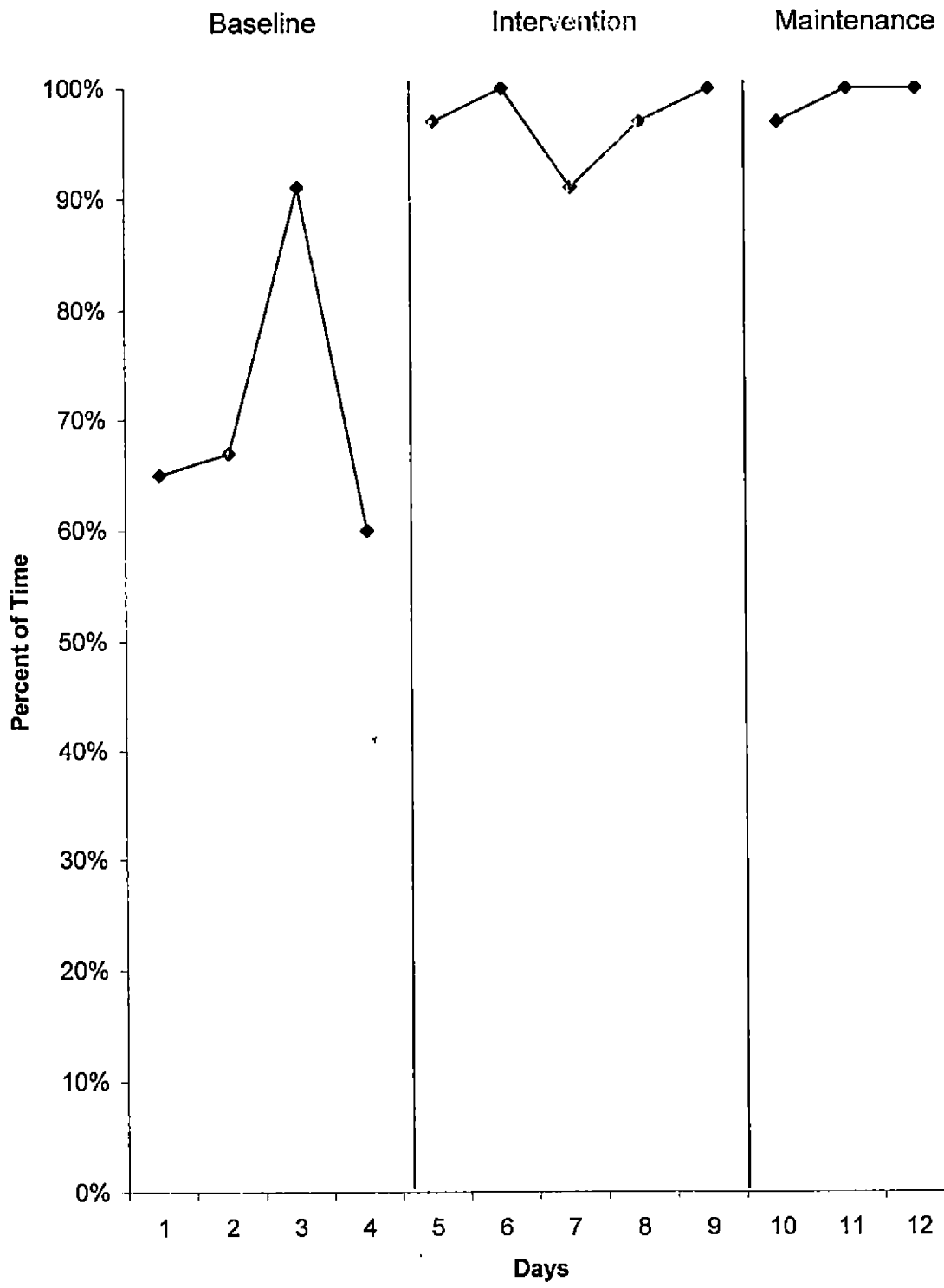
**Percentage of Comprehension Questions Answered Correctly**



Legend: Jeremiah, Angel, Ethan
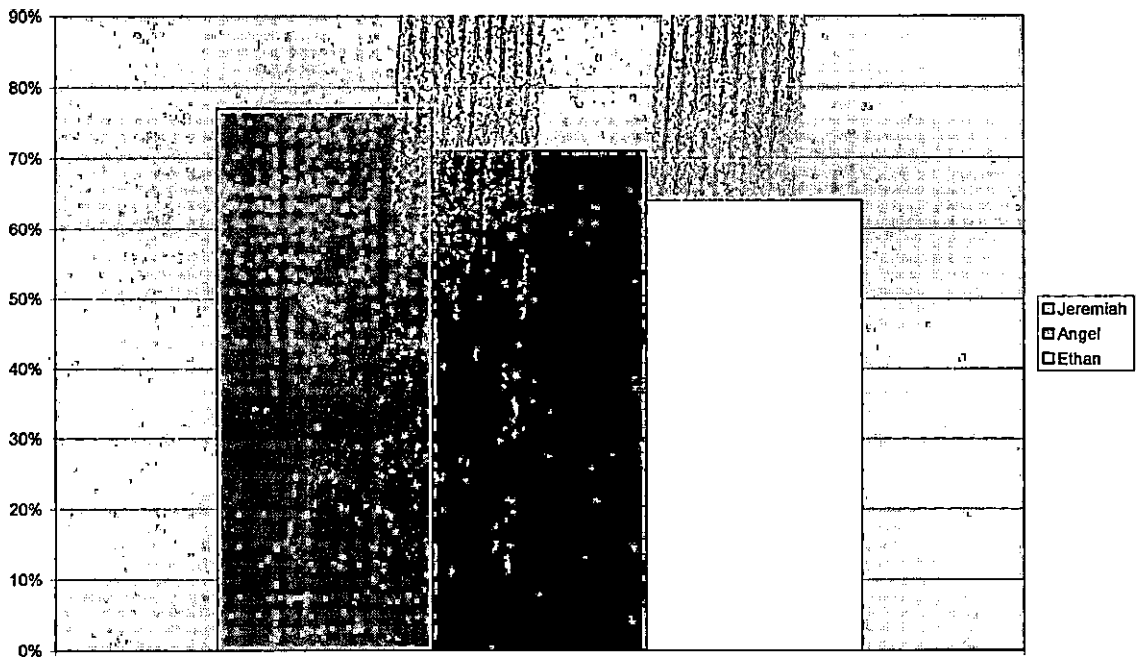
APPENDIX E

ANGEL RESULTS

APPENDIX F

ETHAN RESULTS

Baseline  Intervention  Maintenance

Percent of Time

Days

55

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