THE USE OF VIDEO MODELING TO FACILITATE COMPLIANCE AND SOCIAL SKILLS WITH A SPECIAL EDUCATION PRESCHOOL GROUP

By

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ABSTRACT

This study's purpose was to identify the effects of video modeling in a group, using the target behaviors of appropriate play and independent cleaning. The participants within the study were a group of preschool special education students. The disabilities and behaviors represented within the group varied. This study was an action research study with an A-B-A design. Data were recorded to obtain the frequency of redirection needed during playing and cleaning, the duration of playing and cleaning, and the number of independent cleaners. The quantitative data were analyzed through the graphical representation of the data. Anecdotal observations were analyzed to determine the effects on the individuals of the group. The results reported that there were both positive and negative changes. There was a decrease in redirection during play, an increase in redirection during cleaning, an increase in the amount of time spent cleaning, and an increase in independent cleaners.

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CHAPTER I

INTRODUCTION

Throughout the years many interventions have been used to address negative behavior and to teach students to replace negative behaviors with positive and expected behavior. One of the strategies often used is modeling. In fact, modeling is not just used for purposefully re-teaching behavior, but it is a teaching strategy that naturally occurs and that is a part of every child's learning experience. Babies learn how to act, how to develop basic living skills, and how to develop language, through the modeling of their parents, older siblings, and others around them. Modeling is a type of instruction that involves demonstrating behaviors to an engaged viewer or listener (Buggey & Ogle, 2012). The act of modeling can be either intentional or unintentional, and it can be done in a number of ways, including adult and peer modeling. More recently, with the development of video technology (camcorders and video sharing internet websites) there has been increased interestin video peer modeling. The introduction of user-friendly editing software has even allowed for the development of video self-modeling (VSM).

Background

Modeling has been studied by a number of researchers over the years. Probably the most well-known researcher in this field, Albert Bandura (1986), has done an extensive amount of research (e.g., Bandura, 1977, 1986, 1989, 1997) about modeling as a primary means of learning. Bandura stated that people's environment and the experiences observed within that environment

are a major factor and constructor of their beliefs and actions. The intervention of modeling evolves throughout one's life and one's experiences. Adults are the first models for young children (Buggey & Ogle, 2012). As children age, their primary models become their peers.

Built on the history and theory of modeling, video modeling has been used as an intervention to address behaviors across a wide range of settings, variables, and participants, including children (e.g., Bellini & Akullian, 2007; Bellini, Akullian, & Hopf, 2007; Buggey, 1995, 2005; Dowrick & Raeburn, 1995; Ganz, Earles-Vollrath, & Cook, 2011; Ogilvie, 2011) and adults (e.g., Cream, et al., 2010; Dowrick & Ward, 1997; Jackson & Martin, 1983; Magill-Evans, Harrison, Benzies, Gierl, & Kimak, 2007). Video modeling has been used to address behaviors across multiple disciplines including language and communication (e.g., Buggey, 1995, 2005; Pigott & Gonzales, 1987), motor skills (e.g., Coulson, Adams, O'Dwyer, & Croxson, 2006; Dowrick & Dove, 1980), social skills (e.g., Bellini, et al., 2007; Buggey, 2005; Clare, Jenson, Kehle, & Bray, 2000), and functional skills (e.g., Buggey, 2007; Haring, Kennedy, Adams, & Pitts-Conway, 1987).

Video Modeling

Video modeling is a behavior modification technique that uses a video rather than a live situation for a child to observe a desired behavior (McCoy & Hermansen, 2007). The use of video modeling typically involves a child watching a video of adults, peers, or themselves engaging in the behavior being taught (Delano, 2007). It has been reported that video modeling has resulted in quicker rates of acquisition and generalization than live modeling (Buggey, 2011). There are a number of different video modeling strategies, including video prompting, in-vivo modeling, video peer modeling, and VSM (Ogilvie, 2011).

Video Peer Modeling

Video peer modeling has been used with adults and children in a number of different environments, including home and school (McCoy & Hermansen, 2007). Video peer modeling has been used for years, but does not seem to work as efficiently or as effectively as VSM, in part due to the fact that video peer modeling does not provide self-efficacy, or an individual's belief in their competency and ability to succeed in situations, as VSM does. Delano (2007) suggested that video peer modeling may need to be combined with other interventions to increase participant's initiations of the target behavior.

Video Self-modeling

VSM first appeared in the literature in the early 1970s through a study done by Creer and Miklich (1970). Since that time, the use of VSM has been researched in over 200 studies (Buggey & Ogle, 2012; Hitchcock, Dowrick, & Prater, 2003). VSM is a type of video modeling that shows the target individual performing a desired skill, or skills, from an outside perspective (Bellini, et al., 2007). Videos used in self-modeling often require editing so that the desired and target behaviors are shown instead of the unwanted and maladaptive behaviors, which are removed from the video. Often times when filming a person for VSM the person will role play or is prompted by an adult to perform the desired behavior or skill. These prompts are also edited out of the video. VSM has also been used in a number of situations and to address a variety of behaviors.

Purpose and Significance of the Study

The purpose of this study was to research the effectiveness of video modeling, more specifically, a combination of VSM and video peer modeling, when used in a group scenario within a self-contained, special education preschool classroom. VSM has been used in a number of situations, concerning multiple desired skills, such as communication, appropriate behavior, eating therapy, appropriate social interaction, and more. Although there have been a number of studies done on VSM, there continues to be a need for more studies supporting the use of VSM in improving one's behavior in the educational environment (Buggey& Ogle, 2012; Hitchcock, Dowrick, & Prater, 2003). VSM has been used with individuals and groups, but there have not been as many group studies as individual studies. One of the possible reasons why there are so few studies of VSM use with groups is that participants will be able to see their peers as well as themselves. Thus, it is difficult to determine the source of effects. So, not only will this study examine the efficacy of self-modeling being used with a group, but it will also address video peer modeling, as both will be used simultaneously within this study. Therefore, the intervention used in this study will be referred to as video modeling.

Statement of the Problem

The study conducted was an action research case study, utilizing an A-B-A design, which was used to obtain information concerning the effectiveness of video modeling in a special education preschool group. The problems addressed in this study are issues that are seen often within preschool group play settings. In this study, the goals were for the students to progress from parallel and associative play to cooperative play and to move from needing prompting from

an adult when cleaning to independent cleaning. The cooperative play, defined as sharing with peers, will be identified in this study as appropriate play. There are many stages of play that a child goes through, including unoccupied play, solitary play, onlooker play, parallel play, associative play, and, lastly, cooperative play (Morrison, 2007). Cooperative play is described as people interacting during play and showing evidence of reciprocity among one another (Jahr, Eldevik, & Eikeseth, 2000). Reciprocity in play is defined as an equal exchange between two children (Strain, 2001). The ability for a child to show reciprocity in social exchanges, such as playing with peers, is an important skill when building friendships.

The research questions addressed in this study were as follows: 1. Will videos illustrating students and their peers engaged in appropriate play decrease the need for teacher redirection during play time?; 2. Will videos of students and their peers performing clean-up tasks result in the need for less teacher prompting during cleaning time?; 3. Will videos of students and their peers performing clean-up tasks result in an increase in the number of students cleaning independently and without redirects by teachers?; 4. Will videos of students and their peers performing clean up tasks result in a decrease in the amount of time it takes for the class to clean the play area?

Assumptions

It was assumed that some of the participants selected for this study may have already been exposed to the use of peer video modeling or VSM as an intervention at school, before this study. Another assumption was that all data collectors participating in the study counted incidents in the same manner and defined behavior using the same operative definitions.

CHAPTER II

LITERATURE REVIEW

Introduction

There is an emerging body of research available that demonstrates the effectiveness of video modeling, including video peer modeling and VSM, in addressing a number of skill areas and a number of different age groups and abilities. Video modeling has been used to address behaviors within multiple disciplines including academic performance (Bray, Kehle, Spackman & Hintze, 1998; Hitchock, Prater & Dowrick, 2004; Marcus & Wilder, 2009), language and communication (Buggey, 1995, 2005; Pigott & Gonzales, 1987), emotional behavior (Embregts & Petri, 2002; Kehle, Clark, Jenson, &Wampold, 1986; Osborne, Kiburz, & Miller, 1986; Zhou, 2002), functional skills (Buggey, 2007; Haring, Kennedy, Adams, & Pitts-Conway, 1987), social skills (Bellini, et al., 2007; Buggey, 2005; Clare, et al., 2000; Ogilvie, 2011), and motor skills (Coulson, et al., 2006; Dowrick & Dove, 1980). Different disorders have been represented throughout studies as well, including Autism Spectrum Disorder (ASD) (Buggey, 2005; Buggey & Hoomes, 2011), emotional behavior disorder (Ogilvie, 2011; Zhou, 2002), communication disorder (Buggey, 1995), and attention deficit hyperactivity disorder (Woltersdorf, 1992).

There have been hundreds of studies done on the effects of both video peer and self-modeling (Buggey & Ogle, 2012). The results have been universally positive for both methods. When compared VSM has had better or equivalent results than peer-modeling, indicating that

VSM might be a slightly more effective method. Studies on VSM also report strong generalization and maintenance effects.

Most studies indicate that VSM is a resilient technique and yields positive results, with the exception of some preschool studies (Buggey & Ogle, 2012). It is believed that in order for a child to gain self-efficacy from a video model of themselves they need to have the ability to attend to the video and recognize themselves. Some younger children may not have this ability, and, therefore, may not be affected by VSM. Of the forty-four studies reported within Buggey and Ogle's literature review only three studies showed no change and the remainder of the studies reported positive gains. Two of the three studies that showed no change were studies done with preschoolers as participants. More discussion of these concepts and ways in which video modeling has been shown to affect individuals will be given throughout the review of literature.

History and Theory of Video Peer Modeling and VSM as an Intervention

Bandura's (1986) theory of social learning is the foundation of video modeling (Bellini & Akullian, 2007; Buggey, 2005; Dowrick, 2012; Hitchcock, Dowrick, & Prater, 2003). Bandura (1986, 1977) believed that children learned through modeling and observation better than they learned through experience. He explained that observing or watching the consequences of behaviors shown by others can reinforce or discourage present behaviors of the observer. Bandura (1997) found that most effective models tend to be individuals that are closest to the observer's age and have similar traits and characteristics. Bandura (1986) also said that a child's attention and motivation toward the model, retention in memory, and reproduction of the behavior at an appropriate time are essential to learning a new behavior. Often, with video peer

modeling (if the model is similar enough to the observer in physical characteristics), and especially with VSM, the observer is very interested and attentive to what is happening in the video (Buggey & Hoomes, 2011).

Furthermore, it has been stated that one's ability to have self-recognition and recognition of the key targeted skills are essential for video modeling to be effective (Buggey & Ogle, 2012). For the modeling to be of value, the model should provide an opportunity to register the behavior and recognize one's potential in reaching the desired behavior (Dowrick, 2012). Bandura (1989) stated that self-efficacy is an important component of the theory of social learning, and, therefore, looked favorably on the use of video modeling. According to Bandura, a person needs certain knowledge and skill to regulate their own behavior, along with a sense of personal efficacy. However, Bandura also says that there was a difference in having knowledge and skill and being able to use them effectively and consistently under varied circumstances. The findings of strong generalization across behaviors and situations that are often reported with VSM research may very well be due to the change in perceived self-efficacy that a person receives when watching themselves perform desired tasks and display positive behavior (Buggey, 2005). Bandura (1997) has more recently stated that there is an advantage to seeing oneself perform a desired task because it enhances their belief in their capability.

Cantor, Markus, Neidenthal, and Nurius (1986) also suggest that our self-concept contains many possible selves and those concepts influence our life goals. Cantor et al. stated that people are likely to be guided by representations they have of themselves in the future. VSM provides a highly motivating model that gives the observer confidence to perform the task because they see that they are successfully completing the task in the model.

There is also neuropsychological support for this intervention, referred to as "mental time travel" (MTT; Suddendorf & Corballis, 2007). MTT refers to a person's ability to think of future events as well as past events and the manner in which images of the future can be neurally constructed. VSM gives opportunity for individuals to participate in MTT because of the emphasis on the "future" and the probable neural construct of future behavior that takes place after viewing a video of one's self. During VSM people plan, record, and edit concepts within their brain, and it seems as though the target skill is built or reconfigured from component behaviors in a person's repertoire (Dowrick, 2012). Susan Coulson and colleagues (2006) suggested that there was superior neuronal functioning taking place with VSM.

It has been suggested that VSM provides an opportunity for people to modify their memories of their own dysfunctional behaviors to a memory of the new target behavior (Margiano, Kehle, Bray, Nastasi, & DeWees, 2009). Watching a video of oneself demonstrating a target behavior successfully may alter the viewer's memories of their past behaviors and replace their maladaptive behaviors with the new target behavior (Bellini, et al., 2007). However, it is important to note that the target behavior must be within a child's zone of proximal development (Vygotsky, 1978), or the distance between a child's current level of functioning and their potential for development. Buggey (2007) stated that the only way that a self-modeling video could result in harm to viewers is if it portrayed them so far beyond their present functioning level that success was impossible.

Video Modeling in Review

Video modeling is an intervention technique that addresses a desired or target behavior through the use of a model or demonstration of the behavior through video footage for the child

to observe (Bellini, et al., 2007; McCoy & Hermansen, 2007). This allows the child's attention to be focused on one thing, therefore facilitating an understanding and foundation of a desired skill that will provide the observer with an opportunity to imitate and generalize or adapt their behaviors to parallel the target behaviors. Video modeling can be used with peers, adults, or oneself as the model (Delano, 2007; Dowrick, 1999; McCoy & Hermansen, 2007).

Video modeling can be used within the classroom, home, and other environments to assist people in obtaining skills that they do not have the ability to obtain or develop independently. It has been suggested that video modeling, specifically VSM, can be used to increase target behavior and academic skills, and, therefore, keep students from being at risk for failure in the general education environment (Hitchcock, etal., 2003). Data collected from past VSM studies suggest that VSM has high rates of maintenance and generalization of the desired behavior or task (Buggey & Ogle, 2012; Woltersdorf, 1992). There are very few other means of intervention that can provide such high rates of generalization and maintenance without further direct instruction

Creating Videos

There are steps to take when creating a video to be used for video modeling. Video peer modeling requires a peer to act out or perform a desired behavior (McCoy & Hermansen, 2007). A target, or desired behavior, is first chosen and then a peer is selected to be the model. The peer selected should be similar to the person that will be using the video modeling to address their behavior.

However, VSM requires gathering video footage of children that will be using the modeling to address their behavior. The child will role-play or imitate the desired behavior

(Buggey, 2007). If the child will not respond to requests then prolonged footage can be taken so that the rarely performed behaviors can be captured and presented in a condensed format. According to Bellini and Akullian's (2007) review of studies, it was unclear which type of recording strategy yielded the best results. In the area of language, it is possible to overlay a peer's voice over the visual images of the child. Children are rarely able to recognize their own voices so the child may believe they are listening to themselves. This latter method needs to be used with caution to ensure that the peer's language is within the child's zone of proximal development (Vygotsky, 1978).

Dowrick (1999) analyzed VSM and stated that it falls into two categories, including positive self-review (PSR) and video feedforward. PSR is when individuals review themselves successfully engaging in a behavior that is within their behavior repertoire but is used with low frequency and is not yet mastered. Video feedforward is practiced when an individual observes themselves successfully demonstrating a skill that is slightly above their current capability, yet still in their zone of proximal development (Vygotsky, 1978). Video feedforward may require "hidden support" by an adult through prompting (Bellini & Akullian, 2007). After the video is recorded it is edited to create a video of the participant exhibiting all positive examples of the target behavior. The video is then shown to the participant, and they watch themselves performing the target behavior (Buggey, 2007; Buggey & Hoomes, 2011).

Advantages of VSM

Researchers have investigated the outcomes associated with VSM, and they have found several positive and consistent characteristics of the method. These positive characteristics include rapid acquisition, strong maintenance, good generalization across behaviors and settings,

and quick assessment as to whether the intervention is successful. Rapid learning is one evident and reported effect found in many studies using VSM as an intervention (Dowrick, 2012). Participants seem to learn very quickly from self-models, and, in many cases, much more quickly than through other interventions previously attempted. There are a number of specific cases that clearly exhibit rapid learning through the intervention of VSM. One of those studies, reported by Dowrick (2012) in 1979, was about a girl, named Shirley, who experienced changes in her walking and stepping coordination skills from the intervention of VSM. Shirley was only able to shuffle her feet; she could not lift them. The video used for intervention was made by having Shirley navigate a course with attendants physically manipulating her legs. The footage focused on her feet and face so that the attendants were not visible. Shirley navigated the course after only one viewing of the video.

In many studies, it has been shown that participants maintain their newly acquired skills over time (Buggey & Hoomes, 2011). This has been shown in a number of studies as well, including some studies done by Buggey (2005) in a small private school setting. Three studies were done to see if VSM could be used to modify behavior across a range of ages. The three studies were done with boys ranging from ages five to eleven-years-old, all of whom had autism. The behaviors addressed in the study were tantrums, social initiations, language production, and aggressive pushing. In all three studies the students' behaviors were affected positively, and all of the students maintained the behaviors after the showing of the intervention videos withdrawn.

Generalization of acquired new skills to other settings and behaviors are seen often in studies done with video modeling (Buggey & Hoomes, 2011). In his study with Shirley, Dowrick (2012) found that besides navigating a contrived obstacle course she was able to immediately navigate curbs and climb stairs. With most of the studies done about the use and

effectiveness of VSM no other interventions are needed to help generalize the behaviors modeled and taught through the videos.

Other advantages include the fact that a quick assessment of efficacy can be done and the researcher or teacher has the flexibility to change the video quickly to better portray or redirect focus to the target behavior. Many researchers have also stated that VSM is a preferred method of intervention because of its lack of interference in the classroom activities, the lack of distraction of classmates, and the fact that very little time is required of the individual (Dowrick & Dove, 1980; Zhou, 2002). Researchers have stated that the optimum length of a video is two to three minutes (Buggey, 2005; Dowrick, 1999). VSM is often used in inclusion settings because of the nonintrusive nature it has. The nonintrusive nature is built on the fact that children can watch the video in a private setting away from their peers. VSM is an extremely flexible intervention, and it can be used with any behavior that is observable and can be captured on videotape (Buggey & Hoomes, 2011)

Some researchers suggest that when peer modeling does not work that VSM may still work. Dowrick (2012) gives an example of a selective mute child not benefiting from being around frequent and fluent speakers, but instead being held back and inhibited by the models and making it difficult for the child to recognize his potential. However, when the child's image or voice was given as a model to him then his behavior seems to change very quickly. Some researchers have stated that it seems that memories of past maladaptive behaviors are replaced by memories of exemplary behaviors that are observed on videos (Bellini, et al., 2007; Margiano, Kehle, Bray, et al., 2009; Zhou, 2002). Observing a positive self-model should provide an individual the opportunity to record such behavior into their memory and recognize that they have the potential to reach a valued goal.

Behaviors Addressed with Video Modeling and VSM

Video modeling and VSM has been used as an intervention to address a number of different behaviors, including academic skills, communication, emotional behavior, functional skills, social skills, and motor skills. Video modeling has had positive effects on academic performance in the areas of reading, writing, and math (Prater, Carter, Hitchcock, & Dowrick, 2012). Reading skills, such as oral reading fluency, comprehension and textural response have been increased through the use of VSM (Bray, et al., 1998; Hitchock, Prater, & Dowrick, 2004; Marcus & Wilder, 2009). In Bray and colleague's (1998) study, VSM was used as the primary intervention. Videos were created that showed students' reading fluency being ten to fifteen words per minute faster than their actual rate or depicted students fluently reading more advanced material than they usually read. After these videos were watched by participants they made gains in oral reading fluency and they continued to improve their fluency following the intervention phases of the experiments.

Delano (2007) conducted a study about the effect of VSM on the writing skills of three adolescents with Asperger syndrome. The author reported mixed results related to the maintenance of skills. The students were recorded using self-monitoring strategies for increasing their word count and the number of functional elements they used within their essays. All students increased in the number of words and the number of functional essay elements they used within their essays. However, only the increase in the number of words written, not in the number of functional essay elements used, was maintained by all students

A study using video modeling, within the area of math, was done by Schunk and Hanson (1998). The students that participated in the study all had below-average achievement in math.

They were shown videos of their peers and of themselves solving fraction problems. All of the students who viewed video peer models and a video self-model performed significantly better after exposure to the intervention than they did before.

VSM seems to also improve students' participation in instructional activities and ability to stay on task when working independently, both of which have an effect on the academic performance of a student (Prater et al., 2012). One example of this effect was a study done using VSM to address student participation (Hartley, Kehle, & Bray, 2002). Students were recorded raising their hands and correctly answering questions during instructional time in the classroom. After the video was created, and prior to instruction time, the students viewed themselves in the footage participating in class, and all students' percentages of participation increased from 11% to 43%. This change in behavior was maintained and an increase in participation was reported six weeks following the intervention.

Some researchers have also focused on the production of spoken language skills and speech production (Buggey & Ogle, 2012). The majority of the studies done with communication involved children with autism because of the deficits of communication and language that are often present in a child diagnosed with ASD.

One study done by Pigott and Gonzales (1987) addressed the behavior of a child who was selectively mute for four years. The video footage was taken with the child talking to their parents. The video was then edited to substitute the teacher in the conversation for the parents. The child then watched a video of himself answering, what looked like, direct questions from the teacher. After watching the video there was an increase in the frequency of the child answering direct questions during the school day.

Buggey (1995) had also found that language and communication skills quickly increased in a study he did with three preschool students. The children were filmed imitating short sentences containing forms of the verb "to be" which they were presently not using. After watching their videos in the preschool the children's language was recorded on the playground to determine if they were using the words and whether the effects generalized from the classroom. All three preschool students made and maintained gains in acquiring and using the target behavior in normal conversation.

Buggey used a novel approach to creating language videos in two separate studies, one involving a boy with Down syndrome (2007); the other a boy with ASD (2005). Both boys rarely spoke. These boys both typically used one-word verbalizations and usually did not initiate conversations. The parents and teachers prompted verbalizations from both of the boys and the verbalizations were captured on video. The video was edited and words were cut and pasted to form two, three, and four word sentences. Both boys showed gains in responding to questions asked and in initiations and use of two to four word sentences, after viewing the videos.

There have been other studies that indicate the effectiveness of video modeling on the behaviors of students with serious emotional disturbances (Zhou, 2002). A VSM study of four male students within a self-contained emotional behavior class was conducted (Kehle, et al., 1986). Each of the students was videotaped for approximately twenty-five minutes. The footage was then edited to remove all disruptive behavior. The created videos were shown to the students on five or six occasions over a two week period of time. The treatment effect was considerable. The students' disruptive behaviors were reduced from 47% to 11% after a six week follow-up.

Clare, et al. (2000) found similar effects from VSM in their study. Three students with emotional disturbances were filmed and shown videos of them performing on-task behavior. The results indicated immediate and strong changes in the students' behaviors, from 33% at baseline to 86% during treatment.

Functional skills have also been addressed through VSM. Buggey (2007) conducted some case studies that focused on functional skills at home and at school. The first study was done in the home of a ten-year-old boy with Asperger syndrome. He was having difficulty getting ready for school without constant prompting by the parents. Baseline data were taken and showed that the boy took an average of sixty minutes to get ready to leave to go to school, and his parents had to prompt him about ten times. A storyboard was made to show the boy every step he needed to take to get ready for school, and the boy role-played each step to create a video. The video was edited to convey the boy getting ready for school successfully. The boy watched the video two times the day the video was made. He woke up the next morning and got ready for school in just over twenty minutes. He continued to watch the video for the next week until his interest declined. The boy maintained an improved rate of getting ready for school over an extended period.

Another study done by Buggey (2007) addressed a boy in a school who would not eat his lunch. The boy was taped at lunch, and the video was edited to include a continuous sequence of every incidence captured of the boy raising his spoon to his mouth and chewing his food. He watched the film on a Thursday afternoon, was absent on Friday and Monday and returned to school late on Tuesday. So, he only got to watch the video one time. However, he finished his lunch on Tuesday with minimal prompting, and this behavior was maintained throughout the school year.

Video modeling has also been used often to address a deficit in social skills. Most studies done in this area of development involved participants who have been diagnosed with ASD. One of these studies, done by Bellini, et al. (2007), studied the effect of VSM on social engagement in young children with ASD. Two children participated in this study, but they were treated as individuals in the filming and the data collection. Each child was filmed interacting with peers without the presence of an adult or prompt. The target behavior in the study was social engagement, which was defined as actively participating in an activity or play with a peer involving toys. The feedforward (Dowrick, 1999) technique was used to facilitate social initiations and responses. The children watched their videos individually one time a day for seventeen school days (Bellini, et al., 2007). The data collected were analyzed and exhibited rapid and substantial increases in unprompted social engagement with peers.

The last behavior being addressed, in this summarization of the effects of video modeling, is motor skills. A VSM study, with two boys and two girls who had spina bifida, was done in attempt to increase their swimming ability and skills (Dowrick & Dove, 1980). The children were observed and filmed swimming. Once filmed, the video clips were edited to provide a repeated viewing of the children swimming successfully. Moderate but clear gains were observed in all children.

While most studies that have been done have shown positive results, some studies have shown that video modeling did not have an effect on the participants. One of those studies was done with two students who had severe cases of autism (Buggey, 2005). Both of the students were in their mid-teens. They showed intensive self-stimulating behaviors and did not initiate or respond well verbally. Both of the students were asked to repeat statements and they were recorded. The students seemed initially interested in the videos, but did not maintain interest.

No changes were shown in the verbal behaviors of either of the students. There are a couple of theories for why this study did not yield positive outcomes. One reason could be that the possible target behaviors were too advanced for the students or they may not have had the cognitive development or attention skills necessary for the intervention.

Summary

Video modeling has been used with a variety of people and in a variety of settings since 1970. The use of this intervention strategy has been successful in positively changing behaviors in a large number of participants, including children and adults. Much research has been done about the benefits of video modeling, but more is still needed to support the efficacy of the strategy, especially the use of VSM in group situations.

Therefore, the purpose of this study was to research the effectiveness of video modeling, specifically the combination of video peer modeling and VSM, in a group scenario within a self-contained, special education preschool classroom. One of the possible reasons group studies have not been conducted, especially related to group behavior, is that some degree of peer modeling will occur with the self-modeling. Any group study using video modeling, consisting of VSM, will naturally become a hybrid of self and peer modeling intervention. However, Bellini and Akullian (2007) had shown that both of these methods were effective.

Furthermore, there are limited studies done with video modeling and students with multiple disabilities at the preschool grade level. This study considered the effectiveness of VSM when being used with a group of preschool students in a social situation. There have also been a limited amount of studies conducted with preschoolers with Autism Spectrum Disorder (ASD) and the effects of VSM, and although this group of participants had multiple disabilities

the majority of them have been diagnosed with ASD or show behaviors consistent with the characteristics of ASD. The results of this study should expand on research already done and should give some insight into the use and effectiveness of VSM with preschool students. This study also expanded on previous research of VSM by measuring interactions with same-aged peers in a natural, daily occurring, social group setting.

CHAPTER III

METHODOLOGY

Participants and Setting

Participants in this study attended a special education preschool program. One group, consisting of eight students, participated in this study. The students' ages ranged from four to five-years-old. These students attended a half-day preschool special education program in a rural county school system in the southeastern United States. The students' school days ran from Monday through Thursday from 11:00 a.m. to 2:15 p.m. There were three adults present in the room, one teacher and two paraprofessionals. So, the teacher to student ratio was 1 to 2.7. The students came from a variety of socio-economic backgrounds. Seven of the eight students in the classroom were on free or reduced lunch. The student population was multicultural and was composed of one student of African American ethnicity and seven students of Caucasian ethnicity. One of the students was a female and seven of the students were male.

Students in this preschool classroom were placed in the special education program through evaluations done by a school psychologist. The evaluations consisted of parent rating scales and interviews, observations by school psychologists, and assessments by a speech and language pathologist. The assessments typically used to collect data include the Developmental Profile-3 (DP-3), Hawthorne's Preschool Evaluation Scale (PES), and other developmental, adaptive, and/ or behavioral assessments, according to the school psychologist's discretion. The students must exhibit one significant (two standard deviations below the mean) developmental

delay or two moderate (at least one and a half standard deviations below the mean) developmental delays in the following areas: motor, cognitive ability, social/emotional, adaptive, and communication. The students may be in one of three settings: self-contained classroom, inclusion classroom, or regular education classroom. The classroom used for this study was a self-contained classroom. This population had multiple disabilities. Disabilities included in this group of students consisted of autism, hyperactivity, attention disorders, social emotional disorders, learning disabilities, and communication disorders. Of the eight students, according to the assessments done during evaluation for the eligibility of Significant Developmental Delay (SDD), six students displayed characteristics found on the autism spectrum disorder, such as a significant delay in communication and/or social skills. However, only two of the students had been given an autism diagnosis by a developmental pediatrician. Six of the students showed delays in communication and received speech and language therapy weekly. Six of the students had been evaluated and qualified for occupational therapy through the school system. The students required highly structured activities and visual supports to be successful within the classroom.

Dependent Variable

There were two social behaviors targeted within this study. The dependent variables were the target behaviors of appropriate play and independent cleaning. Appropriate play was defined as playing in a cooperative manner with peers, defined in this study as sharing toys with peers. The goal for appropriate play was to have participants move from parallel and associative play to cooperative play. The goal for cleaning was for the participants to move from being

dependent on an adult telling them how and what to clean during the entire duration of cleaning to being independent in cleaning when they were told it was time to clean.

A need for students to be able to share with peers during play and to clean independently led to the development of this action research case study. The study's purpose was to obtain a solution to these problems by gaining information concerning the effectiveness of video modeling intervention in a special education preschool classroom. An A-B-A group design was employed to assess the effectiveness of the intervention, along with recorded observations. The study was comprised of the following phases: baseline, intervention, and removal of intervention, or maintenance period.

Data Collection Procedures

Data of frequency and duration were recorded through all phases of the study.The dependent variables were measured using frequency counts of the number of redirections given by adults during playing (to intervene when students would not share) and cleaning (to direct students to on-task behavior of cleaning) and a recording of the duration of cleaning, along with anecdotal journal entries. Qualitative notes included what the classroom teacher observed, including the children's attention to the video, changes in behavior not targeted in the video, and conversations among students.

Quantitative Data

A chart was kept to tally the amount of interventions, or redirections, needed during play time and cleaning time. The amount of redirection needed during play was tallied according to how often the teachers had to step in when students were observed not sharing. Tallies were

taken during cleaning time to tally how many verbal redirects and how many physical redirects were needed to keep the students on task. Seven minutes were given to students to have an opportunity to clean without redirects, but when the seven minutes were concluded and the cleaning had not been finished then verbal redirects were given by the adults for three minutes. Then physical redirects were given if the cleaning was still not finished after the three minutes. Physical redirects were given until the play area was cleaned. Verbal redirects consisted of phrases, such as, "Please clean up toys; What time is it?; Time to clean up; First clean, then (insert)". Physical redirects consisted of an adult taking a student back to toys; teacher modeling how to clean; using hand over hand to clean up area; gently guiding a student towards an area that needs to be cleaned. Each adult had a tally counter that they used during the cleaning time. Tallies were reported by each adult after each type of redirect and were added together to get the total sum of redirects needed during each type of intervention, each day.

Qualitative Data

Anecdotal observation data were collected by the main teacher in the classroom each day during play and cleaning time. Observation notes indicated which and how many students participated in appropriate play, consisting of sharing with peers and having mutual trading of toys during play time. Observation notes also indicated which students cooperated during cleaning time and cleaned independently and which students did not.

Procedure

Prior to any data collection, this project was submitted to and approved by the University of Tennessee at Chattanooga's Institutional Review Board (IRB). The letter of approval can be

reviewed in appendix A. A parental consent form, along with a letter explaining the study, was sent to each participant's parents. Every parent in the classroom gave consent for their child to be included in the study. The letter and parental consent form can be reviewed in appendix B.

Baseline

Baseline data were taken to obtain information about the frequency of redirects and duration during clean-up and the frequency of teacher prompts when students were not sharing. The baseline data were taken before video production and one day after the video was produced (before the video was shown and recording of intervention data began). A chart was used to record the frequency and duration data. A recreation of this chart can be found in appendix C. The frequency of redirection needed during play, due to inappropriate play, was recorded on the chart. Inappropriate play was defined as a student not sharing when they should have and/or yelling or physically acting out if upset because someone wanted to share a toy they had. The teachers stepped in to redirect during play if the student was not willing to share with them when their peers were exhibiting a desire to play with their peer or share toys with them. The teachers also stepped in to redirect during play if a student grabbed a toy out of the hands of one of their peers. The frequency of prompts/ redirects given by teachers during cleaning time was also recorded on the form. The teachers redirected during cleaning if a student was not on task and putting toys away. The number of independent cleaners (defined as not having to be redirected or have further prompting to clean other than the normal cue) was recorded on the form also. The duration of overall time spent cleaning was recorded on a chart as well. Time spent cleaning was recorded beginning when the prompt of a cleaning song began to when the last toy was cleaned-up. Three adults in the classroom used tally counters to tally the number of redirects

they administered to the students over the duration of the playing and the cleaning. Qualitative data were also recorded in the classroom through anecdotal observation notes.

Every day, after returning from lunch, the students were told that they could have free play time. The students played with rug toys on the rug, the dramatic play area, and the reading area. When play time was over the students were cued by a song that it was time for them to begin cleaning. The song used was the song that had been used all year to prompt cleaning time. The number of students cleaning independently during this time was noted and recorded on the data form. The students were given a total of seven minutes to clean up without any redirects from the adults in the room. After seven minutes the adults began to give verbal redirects, using statements such as, "Time to clean up; first clean then (insert next activity); what time is it?" Each adult in the room tallied the amount of verbal redirects they gave to students. The adults used a tally counter to record the frequency. Verbal redirects were only given to students who were off task and not cleaning. After three minutes of verbal redirects the adults began to physically redirect the students. The physical redirect was the method used most often in the room to get the students to participate in cleaning. The students in the class had limited initiation of cleaning, and they often had to be prompted physically to participate. The physical redirects included modeling by the adult, giving children toys and guiding them to the appropriate place to put the toys, and hand over hand cleaning. Baseline data were taken for a total of ten days.

Video Production

After some of the baseline data were taken the teacher created a video of the students performing the target behaviors of appropriate and cooperative play and cleaning of toys. On the ninth day of the study the students were filmed by the teacher with a small video camera.

Filming of the children sharing was completed first. This was done by capturing the children naturally sharing or by capturing the children role sharing after a prompt from an adult. A couple of the students still could not perform the task so an adult's hand was shown performing the task and the video was edited to make it look as though the child was performing the task. Filming of the children cleaning was done in two ways. Five of the children had to role play to act out the process of cleaning up because of their inability to clean independently when first prompted to do so. These five children needed very direct instruction in what toys to pick up and where to put the toys, along with modeling, to obtain footage of them cleaning. Three of the children did not need to role play because they had response, though limited, to the cleaning prompt of the clean-up song and could be filmed cleaning independently. So, both feedforward (Dowrick, 1999) and positive self-review were used during the filming and editing of the video. Some students in the group had low frequency behaviors of cleaning and sharing toys, so that was filmed and used in the video. However, most students had to role play and feedforward was used as viewing material for the video. The use of role-play was especially critical during the filming of the students cleaning. The teacher had to have the students sit at a table and wait their turn to be filmed cleaning the toys. The teacher had to walk the students through the cleaning and often modeling what she wanted the students to show her. Most of the cleaning footage was taken using this direct instruction and role-play.

After the raw footage was taken the teacher edited it and created a video of the students appropriately playing and cleaning. The editing program used was Movie Maker for Windows. All unwanted behaviors were removed and each child performing the target behaviors, at least once, was included in the video. The statement "you can share and clean" was added to beginning of the video to ensure that the children knew the salient behavior. The video was split

into two segments, the first being footage of the students sharing. The modeling footage of sharing was prefaced by an auditory and visual statement, "You are sharing and giving toys to friends." This segment was concluded with a statement: "Wow, great job sharing!" The second segment of the video was models of cleaning, and this segment was prefaced by the visual and auditory statement, "You are cleaning. Stop playing and put toys away." As with the first segment, this segment was also concluded with a statement: "Wow, great job cleaning!" At the end of the video the teacher cheered and made the statement, "This class can share and clean. Yay! Good job! Great job cleaning and sharing" A list of all the students was verbally and visually stated as well. The final product was formatted into a digital video and was saved as a file to the computer. In order to include footage of all students demonstrating both target behaviors in the video, the duration of the final product was an extensive eleven minutes and fifty-three seconds.

Intervention and Maintenance

After the video was produced, baseline data was taken for one more day. Then the intervention period began. The video was shown to the students as a group, prior to play time, during circle time, every day for five days. During the viewing of the video the students sat in their seat at the rug and watched the video. The video was shown on a Promethean board that was often used with the class for instruction and viewing videos. The first viewing of the video kept the students attention. The majority of them often made comments about seeing themselves. They were very interested in watching what they were doing on the video. A couple of the students stated, "I'm sharing. I'm cleaning." During the following viewings of the video the teacher did make some redirecting comments to help students focus on the video. The

comments used by the teacher were, "I see cleaning. I see sharing." Although it was recommended by researchers in past studies to not make comments while viewing the video, the teacher felt that it was necessary to do so during this study to keep the group focused. Other studies done had consisted of individuals privately viewing a video of themselves, so there were no opportunities for distractions by peers as there were during this study. No other comments were made during the viewing of the video.

As during the baseline period, data continued to be taken, during and after the video was shown to students, to obtain information about the frequency of prompts needed during play, the amount of time it took for the students to clean, the frequency of the prompts needed during cleaning and the number of independent cleaners. These periods of data collection made up the intervention period and maintenance period. Data were taken to determine if maintenance was occurring, after the video had been withdrawn for a period of three days. The maintenance data were taken for a total of five days. Duration and frequency charts were used to record the maintenance data (as can be seen in appendix C).

Data Analysis

The data for the target behaviors, frequency of prompts needed to redirect students to appropriate play and independent cleaning, along with the time needed for completion of cleaning and number of independent cleaners were all plotted on line graphs or bar graphs. The effectiveness of the intervention was determined through visual inspection of the graphical representation of the data. Qualitative notes were also analyzed to determine the effects on individuals of the group.

CHAPTER IV

RESULTS

Intervention Effects

There were both positive and negative effects recorded throughout this study. According to the quantitative data taken positive change was reflected in the students' ability to play appropriately with peers, without redirection, after viewing the video. Qualitative and quantitative data showed an increase in the number of students observed cleaning independently. Quantitative data also indicated negative effects in the area of cleaning; including an increase in the amount of time spent cleaning and in the amount of redirects needed during cleaning time.

Appropriate Play

The efficacy of the self and peer modeling video for improving the appropriate play in students is presented in Table 1 and in Figure 1. Four of the eight participants did not need redirection during baseline so they were not factored into the evaluation of this behavior. According to the quantitative data taken on the tally chart, four out of the eight students (labeled A-D in Table 1) had decreases in redirection needed from the baseline period to the maintenance period. The Qualitative data supported the quantitative data through recorded observations. Student B and C were observed making statements during play time. Statements included, "Okay, I can share"; "Look, I will share with you." Qualitative data recorded in the form of anecdotal notes also gives evidence of students playing more cooperatively with others during

the intervention and the maintenance period. Student B was most impacted in a positive manner and was observed, on multiple occasions, resolving issues during play by willingly sharing with peers. During the baseline phase he would not share with his peers and would, instead, fight his peers to keep toys or take toys he wanted out of the hands of his peers.

Table 1 Average Daily Redirects needed during Play for each Student during Baseline, Intervention, and Maintenance Periods.

Student	Redirects during Baseline	Redirects during Intervention	Redirects during Maintenance
A	1.8	1.75	1
B	2	1	.6
C	1	.25	.4
D	.6	.25	0

As seen in Figure 1, there was a decrease in the redirection students needed during play time daily throughout the study. The baseline period had the highest amount of redirections given overall by teachers. There was a fluctuation from high to low throughout the baseline data, but when averaged together, there was still a higher amount of redirections given per day during the baseline period than during the intervention and maintenance period (See Figure 2). The amount of intervention needed by the teacher during play decreased after intervention. There were a few days during the baseline period when the intervention needed was the same amount as some days during the intervention period. Overall though, more intervention was needed during the baseline period than during the intervention period.

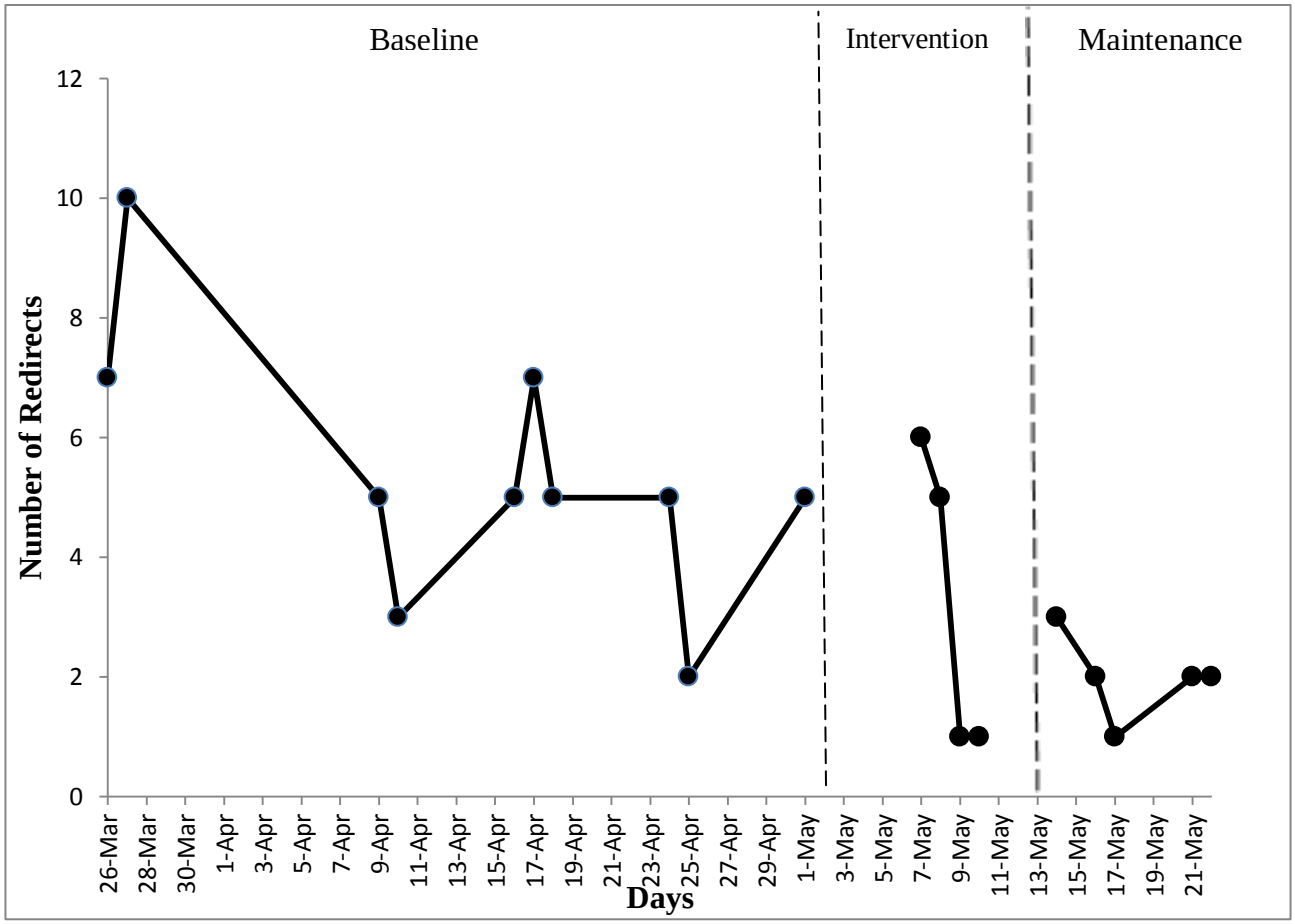

Figure 1 Redirection/ Intervention Needed for Appropriate Play, Day-by-day.

As can be noted in Figure 1, the overall data taken of the amount of redirection needed by the teachers during play shows a decrease in redirection needed throughout the study. There were a total of fifty-four redirections needed during the baseline period, making an average of 5.4 redirections during play each day during the baseline period. A decrease in redirection was seen during the intervention period to an average of 3.25 redirections per day, and even more of a decrease during the maintenance period to 2 redirections needed per day.

Independent Cleaning

According to the Figures 2 through 4,there was a negative change reflected in the students' ability to clean independently, without redirection, after viewing the video. However, according to qualitative data taken there were positive changes observed in some students. Figures 3, 4, and 5 illustrate that students needed more redirection during cleaning time during the intervention and maintenance periods than during the baseline period.

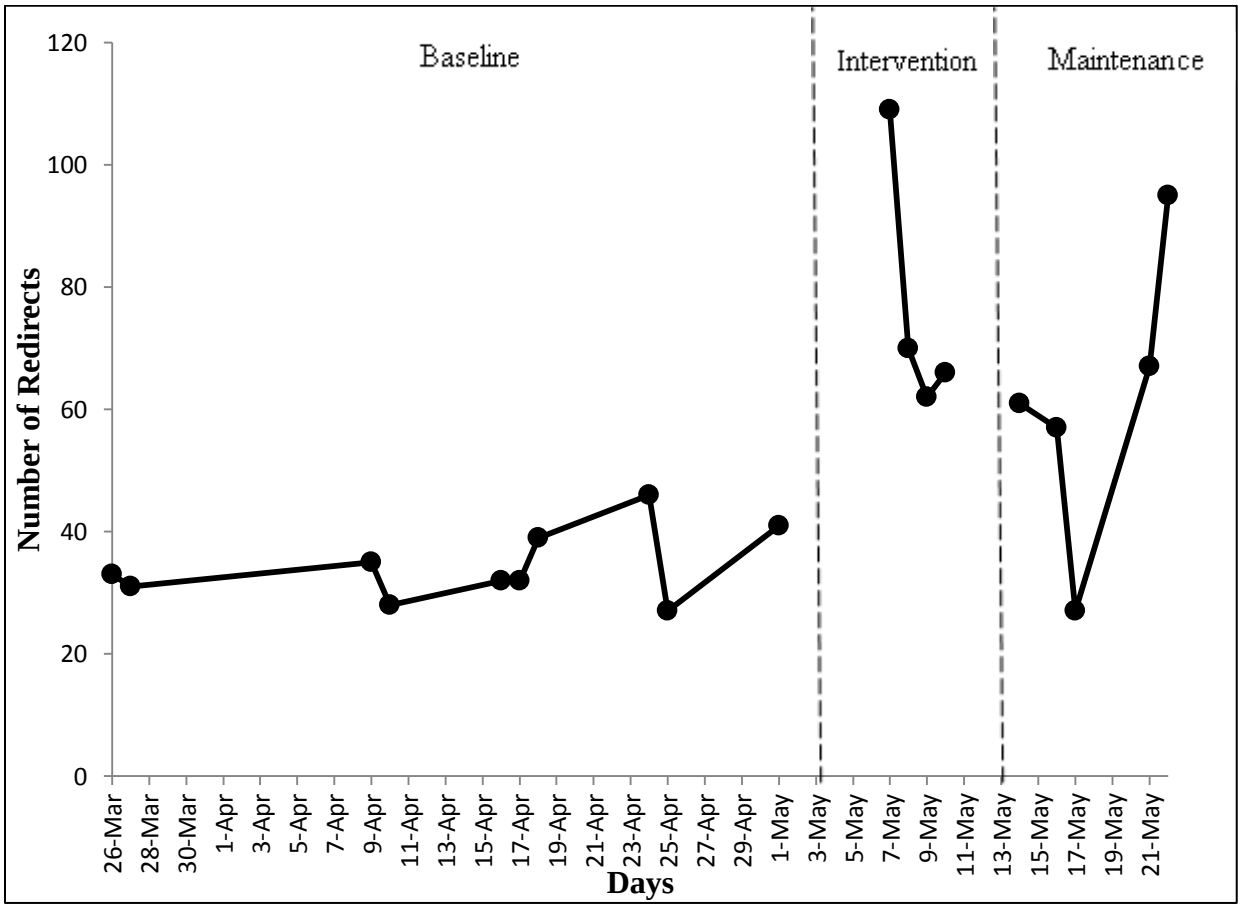

Figure 2 Redirection Needed During Cleaning Time, Day-by-day (A Sum of Both Verbal and Physical Redirects).

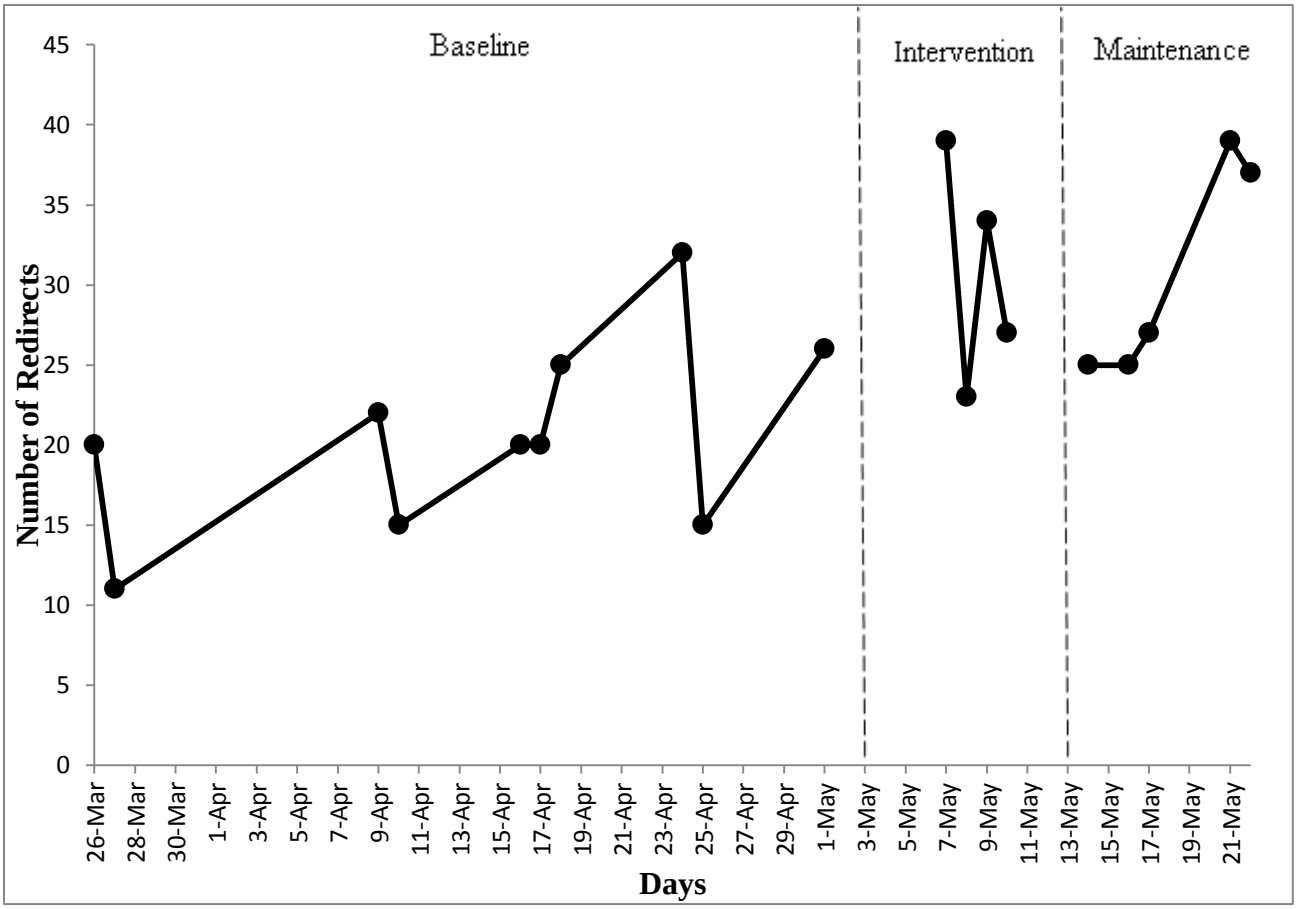

Figure 3 Verbal Redirection Needed during Cleaning Time, Day-by-day

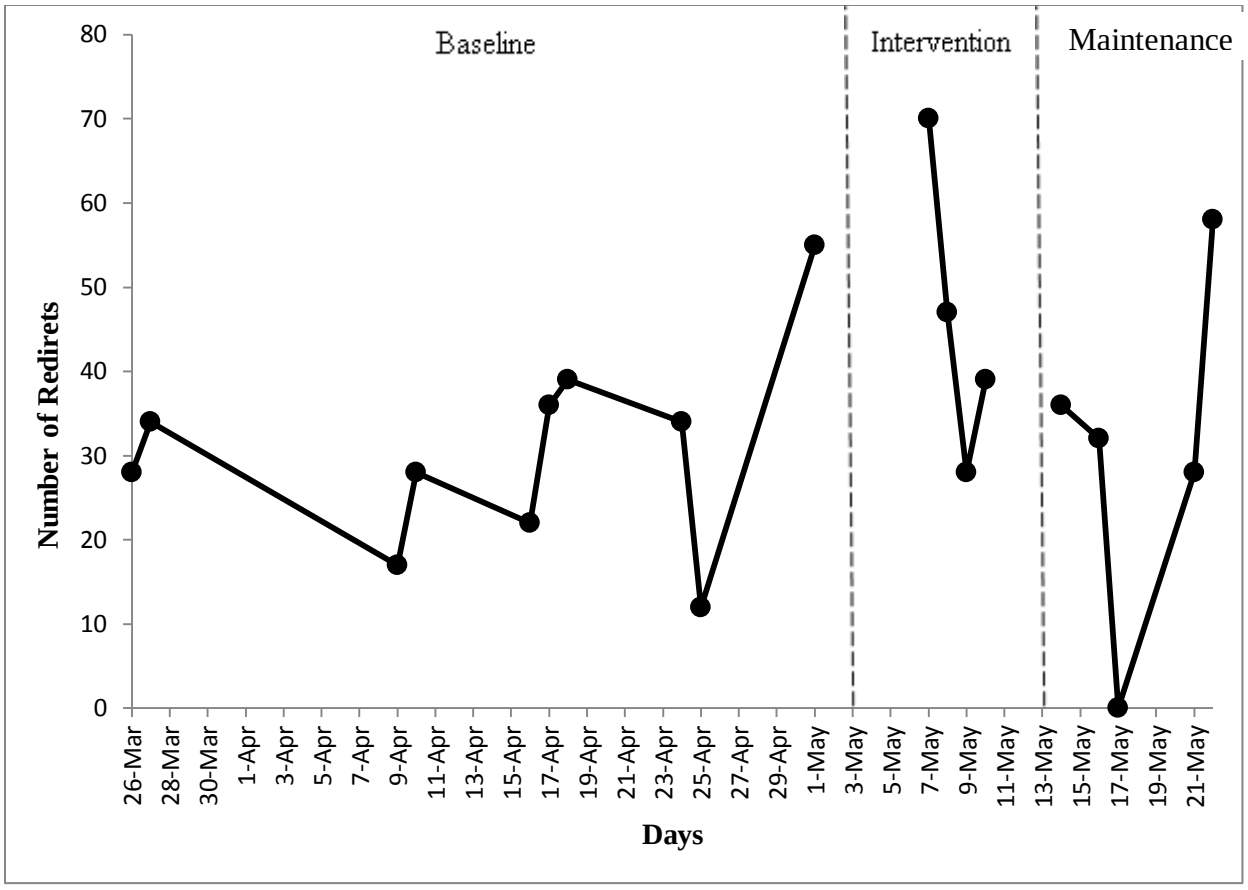

Figure 4 Physical Redirection Needed During Cleaning Time, Day-by-day.

The average time spent cleaning on a daily basis increased from the baseline to the intervention period and then slightly decreased during the maintenance period. This can be seen in Figure 5. Although there was an increase in the amount of time spent cleaning, there was also a change in the number of students that were observed independently cleaning (seen in Figure 6). Throughout the study the number of students cleaning independently fluctuated but did increase during the intervention period. During the maintenance period there continued to be an increase in independent cleaners for a few days and then the number of independent cleaners dropped to zero. These changes were supported by quantitative and qualitative data. Observations noted

that students spent more time cleaning during the intervention and maintenance periods than during the baseline period. The anecdotal observations show that it seems that some individuals' awareness of independent cleaning increased. The anecdotal observations also exhibited that one child's cooperation in cleaning regressed after starting the intervention. There were only four students that showed changes in their independent cleaning during the different phases of the study. These changes in individuals can be seen in Figure 7.

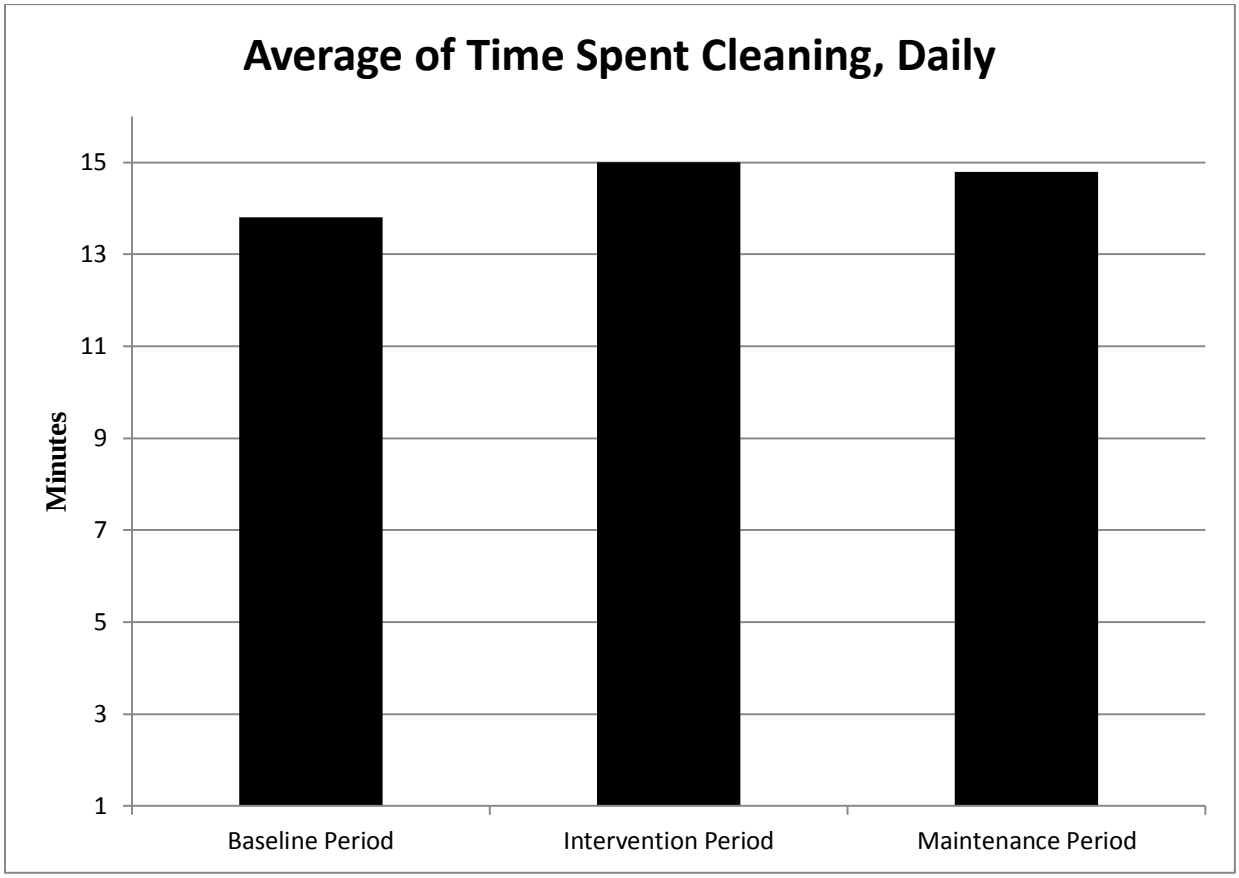

Figure 5 Average of Time Spent Cleaning, Daily.

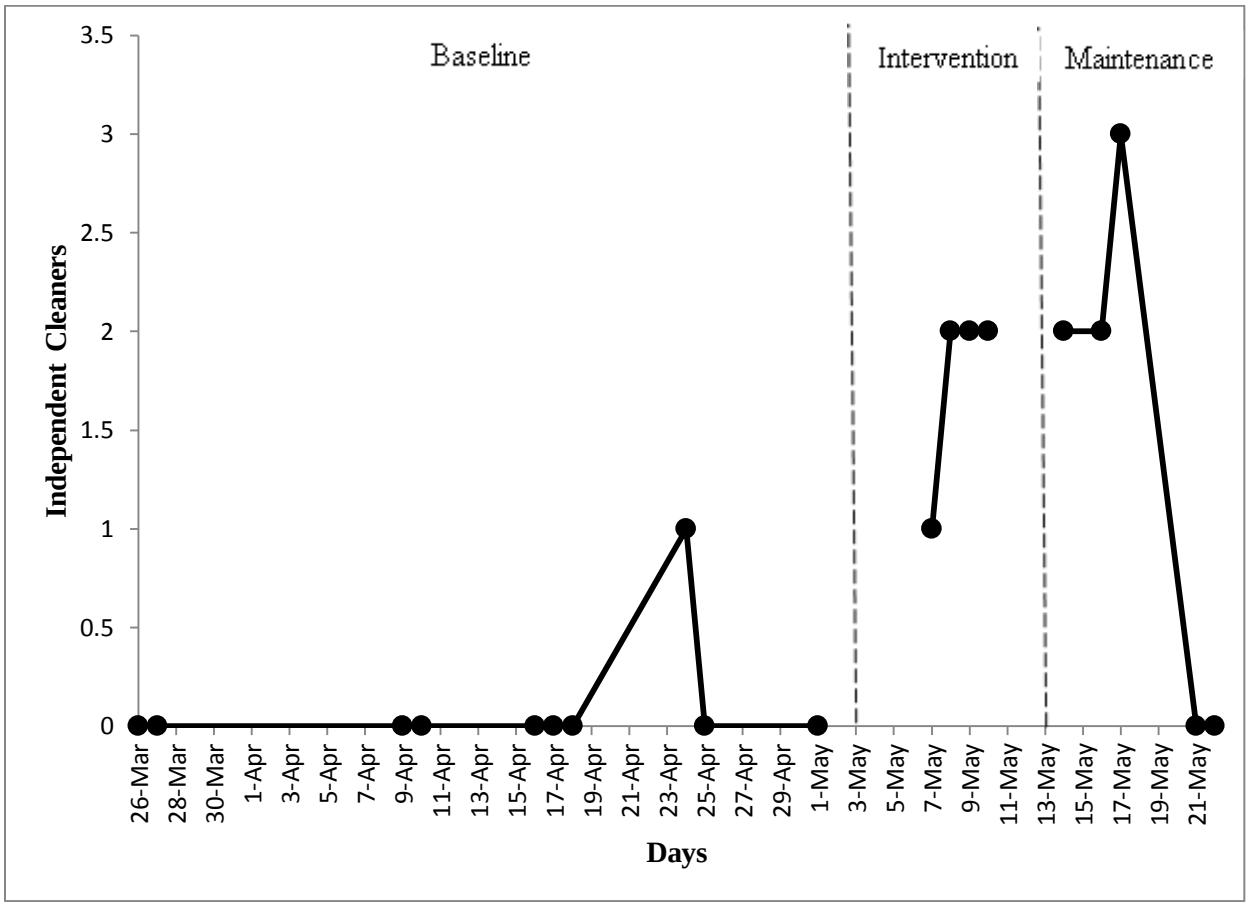

Figure 6 Total Amount of Independent Cleaners, Daily.

Figure 7 displays which students' independent cleaning skills were affected, and the percentage of time they were observed cleaning independently throughout each phase of the study. Student A was observed displaying gains in the percentage of time spent independently cleaning during the intervention phase, but then showed a decrease during the maintenance period. Student A was displayed independent cleaning zero times during the baseline phase, four times during the intervention phase, and three times during the maintenance period. Student B regressed in the percentage of time spent independently cleaning from the baseline period to the intervention and maintenance period. Student B was observed cleaning one day during the baseline period, but was not observed independently cleaning any other day during the study. Student D increased in the percentage of time spent cleaning independently during the intervention period, but then regressed during the maintenance period. Student D cleaned independently zero times during the baseline period and then two times during the intervention and the maintenance phases. Student G was observed displaying gains in the percentage of time spent independently cleaning throughout the study. Student G cleaned independently zero times during the baseline phase, one time during the intervention period, and two times during the maintenance period.

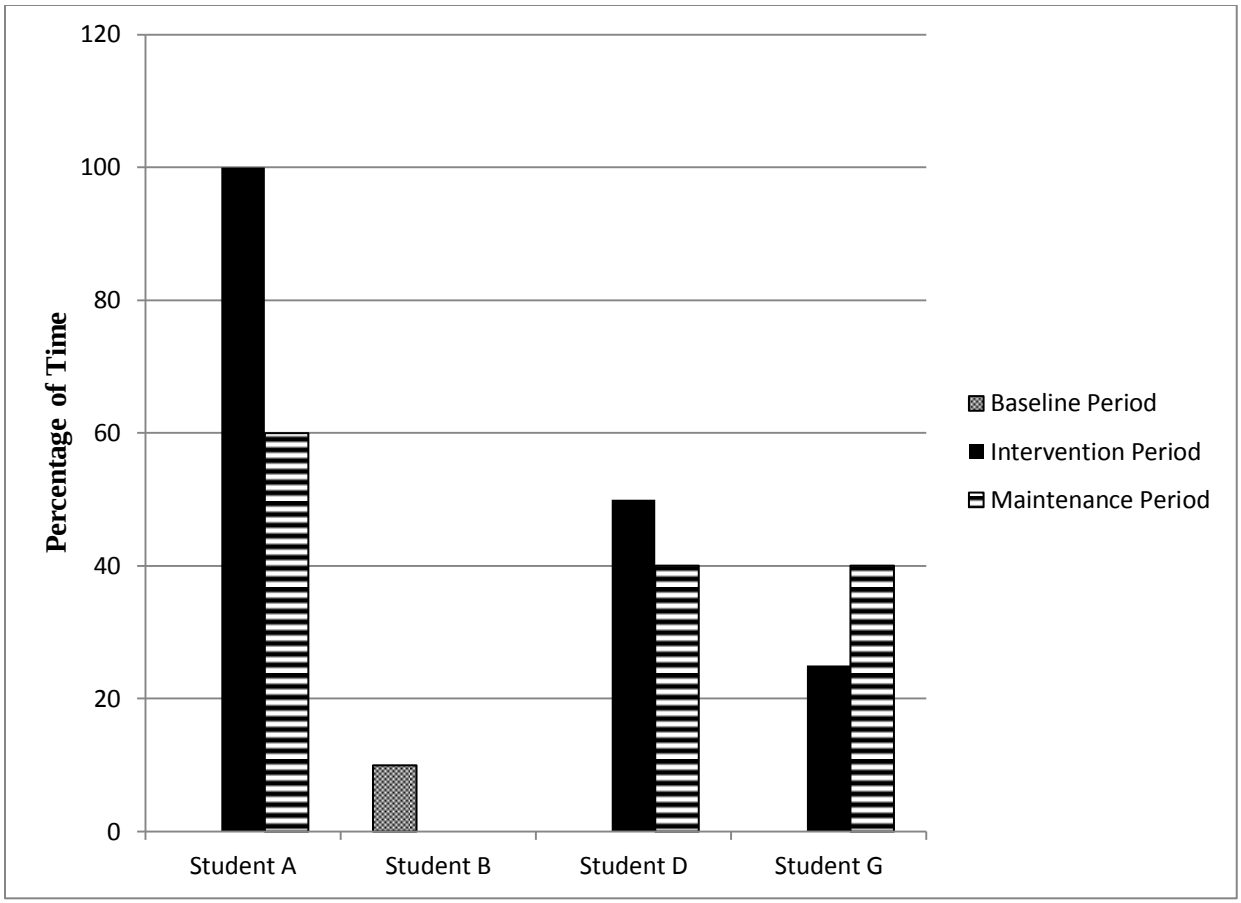

Figure 7 Students Improving in Independent Cleaning, Percentage of Time Child was Observed Cleaning Independently during Each Period

Qualitative Data through Observations

Observations recorded showed valuable information about the effects of the video model used. Observations notes gave evidence of the students' reaction to the viewing of the videos and the conversations that took place during the viewing of the video and during playing and cleaning time. These conversations gave evidence of whether or not individuals were affected by the viewing of the videos. Comments from students like the following exhibited that they had a better awareness of what it meant to share with their peers and clean independently. One student stated, "See, I can share." During cleaning time, another student stated, "I am going to clean these toys." The observations show that some individuals' awareness and behavior of appropriate play and independent cleaning increased while some of the individuals' behaviors did not change. The anecdotal observations also showed that one child regressed during cleaning after starting the intervention. This regression was evident in the notes taken by the teacher. The teacher noted that this student would, upon hearing the cue to clean, take toys off the shelves or out of the cabinets and put them on the floor. This student was also observed running around the room, and, therefore, distracting other students who were cleaning.

CHAPTER V

DISCUSSION AND CONCLUSION

Objectives of the Study

The present study examined the benefits and effects of VSM, including video peer modeling, in increasing appropriate play and independent cleaning within a preschool special education classroom. The VSM procedure was used with a group in this study, as opposed to being used on an individual basis as has been done in previous studies. The use of group VSM led to increases in some areas and decreases in other areas.

Summary of the Findings

As a result of using VSM in the classroom, there was a decrease in the frequency of adult redirection during play when a student was involved in inappropriate play, which was defined as not sharing with peers for the purpose of this study. In another area of study, independent cleaning, there was an increase in the number of times an adult had to redirect the students to cleaning because they were off task. In fact, when comparing the cleaning redirects needed during the baseline period data to the intervention and maintenance period data one can see that VSM had a clear negative effect on the amount of redirects needed during cleaning. As soon as the intervention period began there was an automatic increase in the amount of redirects needed during cleaning. However, there was an increase in the number of independent cleaners from the

baseline period to the maintenance period. The amount of time spent cleaning, from the baseline period to the maintenance period, did not show any positive changes.

Quantitative Findings

The tally charts recorded by adults indicated the frequency of redirects needed in both the periods of playing and cleaning. The chart also indicated the time spent cleaning and the amount of independent cleaners identified daily. According to the tally chart, there was a decrease in the amount of redirection needed by adults during play. The tally charts also showed that there was an increase in the number of redirects needed during cleaning. However, the tally chart showed an increase in the number of independent cleaners tallied during the intervention and maintenance period compared to the baseline period. The amount of time spent cleaning was also recorded on the data form, and it showed that there was an increase in the amount of time spent cleaning.

Qualitative Findings

The anecdotal notes gave some information about the students and their individual behaviors. These individual behaviors are not as evident in the quantitative data as they are in the observation notes because the charts used recorded data based on group observation. In other words, the group was treated as one individual in the quantitative data, but in taking the qualitative data the individual behaviors are made more evident. Only half of the students were affected by VSM in the area of appropriate play. In fact, according to the observations in the baseline data, there were only four students that were having difficulty playing appropriately with peers to start with. Positive effects were seen in all four of these individuals. They all

needed less redirection and intervention after they saw the video of them sharing with their peers. A few of the students were even observed making statements about sharing with their peers. It seemed that these students attended to the video and possibly added an image from the video of them sharing into their memories. One of the students, student B in Table 1, was observed during play in the intervention and maintenance periods as beginning to not share and then stopping what he was doing, as if he was thinking about the video he saw, and then sharing with his peers.

The observational notes taken also reported that there was an increase in the need for redirection for some students during the time of cleaning. One student (labeled as student B in Figure 7) in particular needed more redirection due to her sudden change in behavior during cleaning time. During the baseline period she was observed beginning to clean after a couple of redirects, but during the intervention period it was made evident that she was going to do the opposite of what was expected. She began to take toys out and scatter them throughout the space instead of putting them where they were intended to go during clean up time. This student was also observed in off task behavior, such as running around the room. These behaviors were not seen during the baseline period, and, therefore, were new behaviors after the VSM intervention took place. This student contributed to the increase in the redirections needed during the cleaning time.

However, other students were seen cleaning independently during the intervention and maintenance periods when they were not observed doing so during the baseline period. Even though, according to the quantitative data recorded, there was not an overall positive affect on the group in the area of cleaning, there were some positive effects on individuals, according to observational notes, in this area. There was disparity in the number of students being observed

cleaning independently over the different phases of the study. An explanation for this could be that some of the students were affected negatively by the video. The students that displayed an increase in independent cleaning seem to be affected positively by the visual of watching as they clean. An opposite effect seemed to take place on another student that regressed. For example, Student B seemed to know what was expected of her (we know this because during the baseline data she was cleaning independently), but maybe did not want to comply after seeing that she was doing the right thing on the video. Another possible explanation for the regression noted in the behavior of Student B could be that she may have been expressing displeasure of watching the video had become an unpleasant experience for her because of its length or overstimulation from the large amount of content included in the video. Other students seem to have been affected during the intervention period, but they did not carry over the new behavior into the maintenance period.

Other students seemed to not show any changes within their behavior during the playing or cleaning time. There are a couple of possible explanations for the behaviors of some students not being affected. First of all, the length of the video may have been too long for the students to sit through. The students' "sense of justice" may have been violated, and they may have been expressing their displeasure. Another possible reason is that the students may not have been able to attend to the video model or were not able to transfer the skills observed to their memory and act upon them. Overall, according to observation notes, there was a consistency in the observation of an increase in appropriate language used during playing and cleaning. Appropriate language, such as, "I will share with you" or "Time to clean" were observed throughout the study.

Interpretation of the Findings

There are many possible reasons for the different effects the group video modeling had on the students. One of those explanations could be that when using VSM with a group it is difficult to differentiate the intervention to meet the needs of all of the students within the group.

The need for the use of differentiation can be seen throughout this study. First of all, there are different ways to use VSM: feedforward and positive self-review. Usually one or the other is used purposefully when recording and making a video for an individual. However, when using VSM with a group, it is not possible to fully control this. Therefore, the students may not be getting the best representation of themselves completing the desired skills through the video, based on their individual need.

Another area of differentiation that is effected in this study is the area of skill development. Some students may have been at one stage of sharing or cleaning while some were at another stage. This leads into another possible issue that may arise when using VSM with a group. Modeling research has shown that the modeling that is present in the video should be just above the observer's functioning level (Vygotsky, 1978; Bandura, 1997). The target behavior may not be developmentally appropriate, making some students' development in the focused areas below what they are observing themselves doing. This may make it difficult for them to take what they observed and apply it to what they are doing in reality. In this study, some of the participants had emerging cleaning skills while other participants had no cleaning skills. The children that had emerging skills improved more than the children that did not have any cleaning skills, according to observation notes.

Other skills that are important for a student to have when using VSM is their ability to recognize themselves and their ability to attend to the video. Not all students in this study had

either or both of those abilities, and as a result, change was not seen in those particular students' behaviors during or after the intervention period. This was recorded in the observation notes. One reason for the lack of attention may be the fact that the video was long, at eleven minutes and fifty-three seconds. The video would probably have been more beneficial to the students if it had been shorter, but in order to include footage of each individual student, so that video self-modeling would take place, the video had to be lengthy.

Fluctuations seen within the data recorded may be explained by absence of students throughout the study. It was noticed that when some students were absent the time it took to clean increased or decreased, depending on whether or not the student was usually on task and a helpful cleaner. The data recorded about appropriate play may have also been affected depending on the play skills of the absent students.

When looking at the data it seems odd that the number of independent cleaners increased while the duration of cleaning increased as well. It would be expected that the duration would decrease if the number of independent cleaners increased. However, there may be an explanation for this change. The time of cleaning could have taken longer during the intervention and maintenance periods because of the concentration during cleaning by the observed independent cleaners. This was observed clearly in one student whose independent cleaning ability increased. This student became very focused on organizing areas of the classroom instead of cleaning quickly. While these students were staying on task more often and being engaged, they were also taking longer to clean.

An explanation for the increase in redirection during cleaning time given in the intervention and maintenance periods may be because the adults were able to focus more intensely on the students that were not independently cleaning. During the baseline period the

focus could have been more on the students who would clean independently once redirected once or twice, whereas other cleaners needed a redirect and encouragement for each toy they put away. A focus on the students that had poorer cleaning skills may have resulted in the increase of the redirects recorded.

Another argument for the mixed results may be that video modeling is not an intense and direct enough instruction to increase initiations by some children that have autism (Delano, 2007). It may be necessary for video modeling to be combined with another intervention to be more successful for some students.

Limitations of Study

A limitation to this study was that the period of the study was relatively short, when compared to other studies done with video modeling. More information, especially in the maintenance period, could have been gained to assess whether or not new behaviors were maintained for an extended period of time. The results of the redirections needed during play and cleaning may have been affected by the short amount of time spent in recording baseline and maintenance data. It is difficult to know whether the students' changes in behavior were a result of the filming process or of the viewing of the video.

There should have been a longer period between the filming and the beginning of the intervention phase to better show if the filming resulted in a change in the students' behaviors. Baseline data should have been stabilized before the intervention data began to be recorded, but time constraints prohibited this option.

Another limitation to this study was the lack of control in qualitative data from the baseline period to the maintenance period. The anecdotal notes were taken by one teacher.

Information about the individual students would have been better recorded if each of the three adults were assigned certain students to observe throughout the study to better watch the changes that may have occurred throughout the intervention and the maintenance periods.

Recommendations for Further Study

The present study provides valuable information on the effectiveness of VSM when used with a group; however there are some suggestions for further studies. Better control over the group used would be beneficial in providing more useful outcome data. The individuals within the group chosen for the study need to be more similar in the level of developmental skills and behaviors. Within this study there was a wide range of severity of disabilities and behaviors, and that made it difficult to see if the use of VSM was really beneficial to the group. If the individuals in the group chosen for the study are not similar then there needs to be more attention to what each individual needs within the video to help them understand the target behaviors. It may be beneficial to make a video for each child not including the peer modeling aspect that this study included. If individual videos were made then the time required for attention would decrease as well as would the opportunities for distraction.

A second recommendation is that more qualitative data be taken, in the form of direct observation, on the students' amount and quality of sharing, or cooperative play. While this study had sufficient quantitative data in this area, the addition of qualitative data would make for a more valuable analysis of data.

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APPENDIX A

INSITUTIONAL REVIEW BOARD LETTER OF APPROVAL

MEMORANDUM

TO: Christina Ware **IRB # 12-097**

Dr. Barbara Ray

Dr. Tom Buggey

FROM: Lindsay Pardue, Director of Research Integrity

Dr. Bart Weathington, IRB Committee Chair

DATE: April 27, 2012

SUBJECT: IRB # 12-097: The use of video self-modeling with groups

The Institutional Review Board has reviewed and approved your application and assigned you the IRB number listed above. You must include the following approval statement on research materials seen by participants and used in research reports:

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project #12-097.

Please remember that you must complete a Certification for Changes, Annual Review, or Project Termination/Completion Form when the project is completed or provide an annual report if the project takes over one year to complete. The IRB Committee will make every effort to remind you prior to your anniversary date; however, it is your responsibility to ensure that this additional step is satisfied.

Please remember to contact the IRB Committee immediately and submit a new project proposal for review if significant changes occur in your research design or in any instruments used in conducting the study. You should also contact the IRB Committee immediately if you encounter any adverse effects during your project that pose a risk to your subjects.

For any additional information, please consult our web page http://www.utc.edu/irb or email instrb@utc.edu

Best wishes for a successful research project.

APPENDIX B

PARENTAL CONSENT LETTER AND FORM

UNIVERSITY OF TENNESSEE AT CHATTANOOGA INFORMED CONSENT FORM

Effect of Video Self-Modeling on Social and Adaptive Skills

in a Preschool Special Education Classroom

Dear Parent:

I am a graduate student under the direction of Professor Barbara Rayin the College of Special Education at the University of Tennessee at Chattanooga. I am conducting a research study about the effect of video self-modeling on the social and adaptive skills of special education preschool students.

Your child's participation will involve a video being taken of them, as a part of their class, during free play and cleaning time. The study will start in April and last through May. Your participation, as well as that of your child, in this study is voluntary. If you or your child chooses not to participate or to withdraw from the study at any time, there will be no penalty, (it will not affect your child's grade, treatment, or care, whichever applies). The results of the research study may be published, but your child's name will not be used. This research has been approved the University Institutional Review Board.

Although there may be no direct benefit to your child, the possible benefit of your child's participation is the opportunity to gain social and adaptive skills, pertaining to playing with peers and cleaning.

If you have any questions concerning this research study or your child's participation in the study, please call me Dr. Barbara Ray at 423-313-0789 or email me at Christina-ware@utc.edu

Sincerely,

Christina Ware

340 Evitt Rd

Ringgold GA 30736

I give consent for my child _____ to participate in the above study.

Parent's Name (print): _____

Parent's Signature _____ (Date) _____

If you have any questions about your rights as a subject/participant in this research, or if you feel you or your child have been placed at risk, you can contact Dr. Bart Weathington, Chair of the Institutional Review Board, at 423-425-4289. Additional contact information is available at www.utc.edu/irb.

APPENDIX C

QUANTITATIVE DATA COLLECTION FORMS

Data Collection Forms

Behaviors defined:

Teacher will step in if students are not playing with peer appropriately (not sharing with peer).

Teacher will redirect **(if after 7 minutes have passed and area is still not clean)** with a verbal redirect ("Please clean toys up"; "Time to clean up"; "First clean, then (insert)") or a physical redirect (taking student back to toys ; teacher modeling cleaning; using hand over hand to clean up area). Teacher will redirect **(if after 3 more minutes have passed and areas is still not clean)** with a physical redirect (adult modeling how to clean; hand over hand cleaning; directing student to an area that needs cleaned).

BASELINE DATA

Date	Teacher intervention during play	Duration of cleaning up	Teacher intervention during clean up		Independent Cleaners
			Verbal Redirect	Physical Redirect	
26-Mar	7	13	20	28	0
27-Mar	10	20	11	34	0
9-Apr	5	13	22	17	0
10-Apr	3	13	15	28	0
16-Apr	5	12	20	22	0
17-Apr	7	12	20	36	0
18-Apr	5	14	25	39	0
24-Apr	5	14	32	34	1
*25-Apr	2	12	15	12	0
1-May	5	15	26	55	0

*Video was produced

INTERVENTION DATA

Date	Teacher intervention during play	Duration of cleaning up	Teacher intervention during clean up		Independent Cleaners
			Verbal Redirect	Physical Redirect	
*7-May	6	16	39	70	1
8-May	5	14	23	47	2
9-May	1	15	34	28	2
**10-May	1	15	27	39	2

*First day the video was shown

**Last day the video was shown

MAINTENANCE DATA

Date	Teacher intervention during play	Duration of cleaning up	Teacher intervention during clean up		Independent Cleaners
			Verbal Redirect	Physical Redirect	
14-May	3	20	25	36	2
16-May	2	15	25	32	2
17-May	1	10	27	0	3
21-May	2	12	39	28	0
22-May	2	17	37	58	0

VITA

Christina Ware was born in Chattanooga, TN, to the parents of Robert and Peggy Snyder. She is the oldest of three children. She has lived in Tennessee and Georgia her entire life, including East Ridge, TN; Rossville, GA; Ringgold, GA; and Rome, GA. She attended Graysville Elementary, Ringgold Middle School, and Ringgold High School. She then attended Berry College in Rome, GA to complete her bachelor's degree in Early Childhood Education. Christina is currently employed by the Catoosa County Board of Education. She has taught preschool special education for the past three years, and she is currently the teacher of an autism resource class serving students in kindergarten through second grade. She is married to Graham Ware, and they are expecting their first child.