Using video modeling and role playing activities to teach social skills to middle school students with intellectual disabilities

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USING VIDEO MODELING AND ROLE PLAYING ACTIVITIES TO TEACH SOCIAL SKILLS TO MIDDLE SCHOOL STUDENTS WITH INTELLECTUAL DISABILITIES

by

Alyce Avenell

A thesis submitted in partial fulfillment of the requirements for the

Master of Arts in Education

Special Education

School of Education

California State University, Monterey Bay

May 2012

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VIDEO MODELING, ROLE PLAYING, AND SOCIAL SKILLS

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by

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Abstract

USING VIDEO MODELING AND ROLE PLAYING TO TEACH SOCIAL SKILLS TO MIDDLE SCHOOL STUDENTS WITH INTELLECTUAL DISABILITIES

by

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This study investigated how two interventions, using video modeling alone versus video modeling combined with role playing activities, may improve specific social skills for middle school students with significant Intellectual Disabilities (ID) utilizing a single-subject design. Specifically, the percentage of appropriate interactions was measured across three specific skill sets: sharing objects, reaction to inappropriate peer contact, and taking turns. During the first intervention phase, subjects viewed a video model and learned to discriminate appropriate from inappropriate behavior. During the second intervention phase, subjects viewed videos depicting appropriate behavior and took part in short role playing activities where the participants imitated the video models. All four participants experienced growth in appropriate skill initiation during the first intervention and were able to retain some skills over the second baseline. Participants experienced increased growth in appropriate initiations during the second intervention. Participants'
abilities to initiate appropriate skills decreased over time once the intervention was removed. The study provides preliminary evidence that a combined intervention using video modeling and role playing activities can improve social skills for middle school students with intellectual disabilities.
Acknowledgements

Dr. Josh Harrower, my Graduate Advisor, helped give voice to an idea that had been germinating within the context of my classroom work for years. It is with his guiding support that I was able to put this into words and begin the research. His ability to explain things in a way that has sense and meaning has not only shaped this project but has also shaped me as an educator and a professional. I am thankful for his patience and generosity throughout this process.

Dr. Nick Meier helped to give a written shape to the research behind this project. I am grateful for his feedback and the opportunity to workshop my writing in his class. Dr. Lou Denti and my fellow students in the MAE Project class were a great support team while finishing this project.

I would like to thank my colleagues at the Monterey County Office of Education, especially teacher Josephine Armeli for her continued friendship and sense of humor; without her help and ear, this project would not have been possible as I would have abandoned it long ago. I would like to acknowledge Dr. Marcia Weber-Olsen for her positive attitude and guidance during a tumultuous school year, Dr. Jonna Triggs, my program principal, for supporting this research project, and the instructional paraprofessional support team in my classroom for their flexibility, patience, and tenacity while I pursued this project.

I am grateful for the love and support of my family and friends while pursuing my credential and degree. I would like to thank Matt Hanner for his patience and sense of perspective. Through love, all things are possible.
Finally, this project is dedicated to my students and their families. Thank you for continuing to inspire us all.
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CHAPTER 1

Introduction

Social skills can be defined as a set of behaviors that assist in the interaction with others (Seevers & Jones-Blank, 2008). Individuals with intellectual disabilities often have deficits in social functioning, resulting in difficulties interacting with others. Role playing problematic social situations and other social skills instruction allows for teaching in a nonpublic forum. In some studies, generalization has occurred in non-trained environments, even when peers without disabilities were present (Storey, 2002).

Purpose

The purpose of this study is to evaluate the effects of two intervention strategies (video modeling alone and video modeling paired with role playing) to increase appropriate social interactions among middle school students with moderate Intellectual Disabilities (ID).

Problem Statement

There is significant research in the area of video modeling as a successful tool in teaching skills to students with autism. Students with autism generally respond well to visual stimuli opposed to verbal stimuli. Video modeling and role playing have been shown to be effective tools in developing meaningful and complex social skills in students with autism (Alberto, Cihak, & Gama, 2005; Nikopoulos & Nikopoulos-Smyrni, 2008; Storey, 2002). By using video segments of same age peers in the classroom setting,
students can observe others engaging in desirable behaviors. Using these students as a model helps to create a visual image of what the behavior looks like, making it easier for the students to access. Pairing the videos with structured role playing of problem situations or behaviors gives the students the ability to practice common actions and reactions as well as appropriate verbal responses. However, there has not been a large amount of research conducted on teaching social skills to students with ID using video modeling and role playing techniques. Therefore, it is important to provide specific instruction in targeted social skills to increase appropriate social responding. I believe using role playing techniques combined with video modeling to be effective teaching techniques and will be successful tools in teaching social skills to this population of students.

**Researcher Background**

I am a special education teacher in a program that specializes in teaching functional academics, communication, and life skills to students with autism, Down syndrome, and other developmental disabilities. My students often have difficulties in communicating with both peers and adults. Some students have moderate verbal communication skills while others have minimal skills they are sometimes able to access during social situations. Seevers, et al. (2008) examined the role of Social Skills Training (SST) on student behavior and found that adolescents with disabilities sometimes have behaviors that are awkward or unacceptable in social interactions. These behaviors set students with disabilities apart from peers in that the interactions are limited at best and that these situations may be difficult to process. Furthermore, social deficiencies are
VIDEO MODELING, ROLE PLAYING, AND SOCIAL SKILLS

linked to other maladaptive behaviors such as aggression and self-injurious behaviors (Bielecki & Swender, 2004). SST not only teaches the learner how to interact with peers, but the process fosters generalization of skills across settings, people, and times (Storey, 2002).

I have long believed in the ability of my students to learn and grow. It is partially due to the nature of intellectual disability that my students, though similar in many ways, all learn differently. Many students need the comfort of strict routine and predictability, whereas others find it easier to have some flexibility and variety. Some students are born listeners while others need increased visual supports in the form of symbols and pictures to better process information. Some students enjoy singing and music while others are irritated by noises. I feel as though I am always trying to find one more way to get a point across, be it though art, music, pictures, movement, or role playing. I am drawn towards role-play as the technique draws on multiple modalities: performance, physical action, watching, imitation, and building verbal skills. I have a bachelor’s degree in theater arts from Jacksonville University. While in school, I focused on art and painting and became a theatrical scenic artist. I had a career painting theatrical scenery for opera, dance, and theatrical productions. As part of my well-rounded education in theater, I took classes in acting, playwriting, construction, and literary criticism. These seemingly unrelated skills have given me a unique insight into the creativity of my students and the technical skills to apply acting and role playing activities in the classroom. I have used these techniques in the past when practicing safety skills in the classroom and have seen some of my students able to replicate actions in community-based instructional situations.
Furthermore, my students seem to enjoy the experience of role playing; during small group instruction using role playing as a teaching tool for specified safety skills, students tended to be on task, actively engaged, and experienced fewer behavior problems while appearing to enjoy practicing with each other.

Many of my students exhibit difficulty in understanding verbal prompts. Because of limitations in receptive language skills, students are unable to completely understand verbal prompts, even when prompts are given with limited word choice. The simple act of pairing a verbal prompt with a gesture or visual aide goes a long way in helping students better understand what is being said or asked of him.

**Theoretical Model**

Applied Behavior Analysis, commonly referred to as ABA, is the theoretical model that forms the basis of this research. Through the research of B.F. Skinner, the field of behavior analysis became established with the concepts of operant and respondent conditioning. In his book *Science and Human Behavior* (1953, pp. 402-412), Skinner discussed the practical applications of behavior analysis on education and how ABA is a scientific approach to studying human behavior that seeks to define the function of a behavior while relating the behavior to environmental variables (Cooper, Heron, & Heward, 2007, p. 3). Proponents of ABA may also use imitation as an intervention to teach new behaviors. Imitation is the use of a model as an antecedent stimulus that draws out an imitative behavior (Cooper, Heron, & Heward, 2007, p. 413). Albert Bandura's Social Cognitive Theory seeks to explain human functioning through three interacting forces of behavior, cognitive, and environmental factors as observed within a number of
basic capabilities, including 'vicarious capability' (Bandura, 1986, pp. 18-22). This ability to learn through observation to acquire new skills is crucial to students with intellectual disabilities. The social cues that a typical learner relies on while learning novel tasks or behaviors are often missed. Modeling therefore becomes an essential aspect of learning. One common use of modeling involves the use of video technology. Maione and Mirenda (2006) define video modeling simply as the observation of video depicting the target behavior followed by subsequent imitation. In a review of research on procedures to teach safety skills, Dixon, Bergstrom, Smith, & Tarbox (2010) found role playing to be one of the intervention components most often utilized with success.

**Research Question**

How does video modeling and role playing affect social skills in middle school students with moderate intellectual disabilities? Will these skills generalize into peer-directed school activities?

**Terminology**

- **Applied Behavior Analysis (ABA):** ABA focuses on the observable relationship of behavior to the environment. By assessing the function of the relationship between a targeted behavior and the environment, a behavior can be shaped and changed.

- **Generalization:** the performing of a target behavior in a setting in which the skill was not trained
• **Intellectual disability (ID):** significant delays in cognitive functioning concurrent with delays in adaptive behavior

• **Role playing (RP):** assuming the role of a social partner to rehearse situations in preparation for future use and to practice social skills in a non-threatening situation

• **Single-subject design:** an experimental design in which the subject serves as its own control and the independent variable is manipulated to demonstrate effect (Kennedy, 2005).

• **Social skills training (SST):** a cognitive-behavioral approach to explicitly teach interpersonal social skills.

• **Video modeling (VM):** a form of observational learning in which desired behaviors are learned by watching a video demonstration followed by the learner imitating the model target behavior.
CHAPTER 2

Literature Review

Deficiencies in social skills are a defining characteristic of Intellectual Disabilities (ID) (de Bildt, Serra, Luteijn, Kraijer, Sytema, & Minderaa, 2005). The level of social skills can influence one’s ability to acquire and perform adaptive behavior skills. Children with developmental disabilities tend to be lacking in a wide range of social behaviors. Nowhere is this more apparent than in the area of social skills acquisition and application (Bielecki & Swender, 2004), yet often when designing social skills interventions, developmental considerations are overlooked (Alberto, Cihak, & Gama, 2005) (Seevers & Jones-Blank, 2008). Video modeling and role playing strategies are procedures that simulate instruction in the classroom in a safe, non-judgmental forum. Students use both video recordings of expected behaviors and take part in role playing exercises to rehearse expected behaviors before performing them in a structured setting (Alberto, Cihak, & Gama, 2005). There is evidence that these rehearsed and practiced skills generalize into other settings (Nikopoulos & Nikopoulou-Smyrni, 2008).

The purpose of this review is to evaluate the literature in the areas of social skills acquisition and the implications of the development of social growth in individuals with ID as well as to review the literature on the use of video modeling and role playing as an intervention strategy.
Search Procedures

The articles selected for this review were selected via computerized databases. The databases included ERIC, Academic Search Elite (EBSCO), PsychINFO, Expanded Academic ASAP, and Wiley InterScience. The following keywords were used: (a) role playing, (b) social skills, (c) social skills training, (d) cognitive delay, (e) mental retardation, (f) cognitive disability, (g) intellectual disability, (h) socialization, (i) social skills retention, (j) acquisition, (k) video modeling, (l) adaptive behavior. These key words were used in groups as well as individually to fully research the topic.

Criteria

Studies were included in this review based on the following criteria: (a) the study involved school-aged children, (b) the study involved participants with cognitive disabilities, (c) the study was published between 1995 and 2011, (d) the purpose of the study was to examine social skills acquisition or application, and (e) the study involved the explicit teaching of social skills. Studies were excluded from the review if: (a) the study came from a journal that was not peer-reviewed, (b) the setting only involved a residential facility or other clinical environments, (c) the study was more than 15 years old, or (e) no participants with developmental disabilities were researched in the study.

Social Skills Development

Social skills are behaviors that help students interact with each other and with adults. A common sign of ID in young children is the inability or difficulty in interacting with others (de Bilt, et al., 2005). Leffert, Siperstein, and Millikan (2000) examined
social perception and generation of social strategies in children with and without ID. The authors measured the students' responses to videotaped scenarios of social conflicts and asked a series of questions to assess both social perception (what happened in the story?) and strategy generation (what would you do?). The authors found that the students with ID had a much more difficult time recognizing and interpreting social cues compared to their same-age peers. They were less likely to alter social strategies when confronted with different scenarios and more likely to look towards an adult for help. They had difficulties interpreting benign intentions in a negative event. When students with ID were called upon to generate social strategies in response to taped stimuli, they had difficulties coming up with strategies that fit the social conflict. They tended to rely on more general strategies regardless of the conflict. The authors recommend explicit social skills training in teaching social perception skills. Leffert, et al. (2000) recommend teaching students to recognize and interpret social cues, demonstrating how to distinguish between intent and effect, and utilizing social skills to generate strategies that are appropriate for specific situations.

Seevers, et al. (2008) provided social skills training using modeling, role playing, and other "best practices" instructional strategies. Skill deficits were measured among preschool-aged students with and without disabilities, and students were divided into groups based on those deficits. Each group had a mix of students with and without disabilities. The authors found that the students with ID showed significant improvement following the intervention. They also utilized the Social Skills Rating System (SSRS; Gresham & Elliott, 1990) to identify, evaluate, and classify students with specific social
deficits. The SSRS is a standardized, norm-referenced tool designed to assess student social behavior in both family and school settings (Seevers & Jones-Blank, 2008). The authors found this teacher rating system useful in targeting explicit skills and evaluating progress periodically throughout the intervention (baseline, middle, post test). It is important to look at each individual student when targeting social skill intervention.

Alwell & Cobb (2009) state that identifying skills for students with more severe disabilities needs to be more individualized due to the pervasive nature of the disability. Common instructional strategies include video modeling, role playing, discussion, problem solving, and visual cues (Alwell & Cobb, 2009). In their meta-analysis of social and communicative interventions, Alwell & Cobb (2009) recommend the use of SST interventions with secondary-aged students and advocated for individualizing instruction by matching skills selected for intervention with individual needs.

**Video Modeling and Role Playing**

Using video modeling and role playing in the classroom allows for systematic social skills development in a private, safe environment. Evidence points to skills generalizing into non-trained environments where persons without disabilities are present (Storey, 2002). Modeling refers to a student’s ability to imitate or engage in a similar behavior to that being demonstrated (Nikopoulos & Nikopoulou-Smyrni, 2008). Video modeling is simply using video as a medium to record and present modeling to students. Video modeling has been shown to be an effective technique for teaching social responses to students with ID (Apple, Billingsly, Schwartz, & Carr, 2005). Nikopoulos & Nikopoulou-Smyrni (2008) define some necessary student characteristics needed in order
to benefit from modeling as it applies to students with ID. This includes the student’s ability to imitate new behavior near their current level of competence, and the student’s ability to attend to the behavior being modeled. After reviewing other studies in which video modeling was used to teach complex skills, the authors concluded that frequent video modeling is likely to contribute to increased imitation skills. The authors then state that this is an important area of future research as children are unlikely to keep up social interactions without the presence of imitation skills.

Video modeling can be defined as a student watching a video of the target behavior and afterwards imitating the behavior (Charlop-Christy, Le, & Freeman, 2000). Though much of the research in this area deals with video modeling and autism, video modeling has been used to teach many different skills to students with a wide range of disabilities (Maione & Mirenda, 2006). Video modeling treatments are easily implemented in the classroom primarily because they are relatively inconspicuous. With the technology afforded to schools in the present day, they are relatively inexpensive and easy to make. Additionally, students often feel reinforced by watching videos and are motivated to watch them simply because of the media used to present them. Most importantly, video can be effective for students with limited verbal comprehension or for students with higher visual processing skills compared to lower verbal processing skills (Maione & Mirenda, 2006).

Role playing is similar to video modeling in that the target behavior is demonstrated. However instead of using video, the behavior is modeled using the targeted participants in vivo. The target participants play out scenarios depicting the
target behavior, as in an article that reviewed procedures for teaching safety skills (Dixon, Bergstrom, Smith, & Tarbox, 2010). Dixon et al. (2010) reviewed literature on teaching safety skills to persons with intellectual disabilities and found that, across multiple studies, basic behavior procedures were most effective. These included prompt and prompt-fading, reinforcement, and role playing. Emphasis on role playing situations in vivo was found to be important due to the high generalization effects. If the skill is learned in the actual environment in which it needs to occur, it is likely to continue, as opposed to in an analog setting. If a skill is learned in an analog setting, the skill needs to then generalize to the real setting for the effects to be truly relevant (Dixon, et al., 2010).

Another study used operationally defined behavioral expectations, role playing, and positive reinforcement to teach social skills (Lohrmann & Talerico, 2004). Lohrmann and Talerico (2004) sought to teach positive behaviors (group social skills) while reducing disruptive behaviors through the use of role playing paired with positive reinforcement. The students participated in class-wide role playing activities where they acted out correct and incorrect examples of target behaviors while positive reinforcement was given to members of the group as part of a group contingency. The total group needed to meet specified criteria so that the group’s participants would receive the reinforcement. There was a significant decrease in problem behaviors and a significant increase in target behaviors across all participants. The authors cite this study as a simple and effective intervention strategy that utilizes specific behavioral expectations, small amounts of teacher-directed instruction (role playing) time, and systematic positive reinforcement (Dixon, et al., 2010).
Role playing and video modeling complement each other well; the video model provides a constant model for the participants and can be replayed for effect in role playing vignettes (Charlop-Christy, Le, & Freeman, 2000). In a study comparing video modeling with in vivo modeling in children with autism, Charlop-Christy et al. (2000) studied the effects of both video modeling and in vivo modeling in isolation and compared the effects of both to each other.

The in vivo modeling was conducted using therapists familiar to the children. The children watched the in vivo models demonstrate a skill and were then observed for generalization. The same procedures were used for the video modeling sessions. The authors found video modeling to be more effective and efficient in teaching skills to children with autism. Video-modeling lead to quicker acquisition of skills and was found to be far less time consuming once considering the time necessary to repeatedly employ the in vivo models for each session (Charlop-Christy, et al., 2000). It should be noted, however, that the combination effects of the two models were not represented in this study and that it is not known how these two methods complement each other based on this study alone.

Summary

Students with ID have difficulties receiving and interpreting social cues. These students tend to rely on more general social strategies rather than explicit strategies for different social situations (Leffert, Siperstein, & Millikan, 2000). Existing research has demonstrated that a variety of modeling techniques can improve the effectiveness of social skills interventions, particularly when specific areas of need are targeted (Seevers...
& Jones-Blank, 2008). Video modeling in particular has been shown to be especially
effective in teaching children with autism (Maione & Mirenda, 2006). Increased use of
video modeling is likely to contribute to increased imitation skills. Role playing activities
have also been shown to demonstrate increased skill acquisition when combined with
basic behavioral strategies (Dixon, et al., 2010), (Lohrmann & Talerico, 2004).

The purpose of this study is to determine the effects on students of two
interventions (video modeling and video modeling paired with role playing), specifically
the ability of students to increase appropriate social behaviors across peer-generated
activities.
CHAPTER 3

Methodology

Introduction

The purpose of this action research project is to examine how video modeling and role playing affect social skills in middle school students with moderate intellectual disabilities, and to measure how these skills generalize into peer-directed school activities. A single-subject, multiple-treatments design following an A-B-A-C-A model (Kennedy, 2005) was used. The first “A” phase represents an initial baseline phase. The “B” phase includes the video-modeling (VM) intervention alone. The second “A” phase is a return to baseline conditions in an attempt to demonstrate experimental control. The “C” phase consists of the video modeling paired with role playing intervention (VM + RP). The final “A” phase consists of a return to baseline conditions, again in an attempt to demonstrate experimental control. This final “A” phase took place over six sessions, with a week of spring break between sessions 3 and 4 and thus could also function as a way of evaluating the maintenance of skills over time. The dependent variables were the rate of appropriate responses in peer-directed social activities (sharing objects at lunch during non-directed activity at a sandbox, taking turns during a semi-directed game activity, and reaction to physical context during break during non-directed activity at a sandbox) and the rate of inappropriate responses across the same activities. Inappropriate responses were defined as physical aggression (slap/hit), verbal protest, and grabbing/taking objects from others. Appropriate responses were taught in the modeling
session (asking/initiating for objects, waiting for a turn for at least 10 seconds without protest behaviors present, releasing preferred items when requested by a peer within 5-10 seconds, initiating an apology when bumping into someone, acknowledging peer when he/she is apologizing). This experimental design has been selected due to the small group participating in the study and the desire to investigate two separate intervention strategies across three skills and then contrast and compare results. The participants were treated as a singular unit for the purposes of intervention and mastery and were evaluated with the same criteria. The measurements took place at the same time and location each session under the same conditions throughout the study.

Setting

The research was conducted in a special day class (SDC) at middle school in central California. The special day class is part of a program operated by the county office of education for teaching functional academics, life skills, and communication skills to students with autism and intellectual disabilities. Students in this class benefit from small group and specialized academic instruction, and all students received speech and occupational therapy as well as adapted physical education services. The students had access to an outdoor area where they could interact freely with each other in a peer-directed setting among other students with similar abilities. This setting was key in measuring generalization effects from the behavior interventions. The participants were students from the special day class and participated in the study as part of their natural class setting, utilizing social groups and social skills intervention were already part of the
classroom curriculum. The intervention strategies used did not disrupt the routine or schedule of the classroom setting.

Participants

Four students participated in the study. One criterion for the selection of the participants was that they possessed some verbal communication skills to participate fully in the study as the intervention was, in part, intended to teach appropriate verbal responses to social situations. The participants were between the ages of 10-13 and included two boys and two girls. Participants were selected on the basis of four factors: (1) communicates with others primarily using verbal language, (2) can attend to task long enough to observe a short video (under 5 minutes), (3) has some imitation skills, and (4) does not have significant behaviors that would interfere with participating (e.g., inability to participate in small group, above-average physical aggression towards other peers, need for one-on-one adult direct support in small group setting due to severe interfering behaviors). The selected participants were appropriate for this study because all had some deficits in communication skills and social interactions based on the nature of their disabilities.

Study participants

Michael was a twelve-year old boy with non-autistic Fragile X syndrome (FXS). His primary language is English and English is the language spoken in the home. He wears glasses to correct astigmatism and has no vision issues when wearing his glasses. His qualifying diagnosis is ID due to significantly below average general intellectual functioning existing concurrently with deficits in adaptive behavior, as assessed by a
recent psycho-educational assessment as part of his latest triennial assessment Individualized Education Program (IEP). His last psychoeducational assessment was conducted in September of 2010. He was assessed using the Visualization and Reasoning battery of the Leiter International Performance Scale-Revised (Leiter-R), an individually administered test designed to assess cognitive functioning in children and adolescents ages 2 years to 20 years. The tests assess the ability to process and sequence visual stimuli. Michael’s Full-Scale IQ (FSIQ) of 33 identify him as Severely Delayed, which places his overall nonverbal skills in less than 0.1 percentile when compared to his same age peers. When assessed with Weschler Nonverbal Scale of Ability (WNA), his FSIQ of 36 also placed him in the Extremely Low range when compared to same age peers. Michael has behavioral difficulties that are typical of persons with FXS, including unpredictability, mood swings, bursts of anger, poor impulse control, avoidance of eye contact, and hyperactivity. There is a classroom behavior plan in place to assist the staff in working with Michael to anticipate his needs before a behavior crisis occurs. This plan meets most of his basic behavioral needs.

Nancy is a thirteen-year-old girl diagnosed with Costello Syndrome, a rare chromosomal disorder that has resulted in numerous medical disorders along with impaired speech and cognitive function. Though her medical history is extensive, she is relatively healthy and is able to attend school regularly. She wears glasses to correct nearsightedness. Her qualifying diagnosis is ID. Nancy also displays significantly below cognitive abilities along with delays in adaptive behavior as presented in her latest psychoeducational assessment in her triennial assessment IEP in September of 2010. She
was assessed using the Leiter-R with a FSIQ of 34, placing her in the Severely Delayed Range. She was also assessed using the WNA, identifying her general nonverbal cognitive ability in the Extremely Low range with a FSIQ of 47. Nancy’s primary language is Spanish and is what is primarily spoken at home. Though her speech is difficult to understand and she communicates using Spanish and English simultaneously, she is cognitively the highest functioning of the four participants. Her receptive English skills are high relative to similarly delayed students.

Vicente is a thirteen-year-old boy with a qualifying diagnosis of ID. There is no documented medical diagnosis for his disability, though he is developmentally delayed and all developmental milestones were delayed. Vicente’s primary language is English, though he can understand and speak both English and Spanish. Spanish is the primary language spoken in the home with his parents; however, his older adult sister is fluent in English and communicates primarily in English with Vicente at home. Psychoeducational assessments completed in September of 2011 indicate his cognitive functioning to be low; on the WNA, Vicente’s FSIQ was 36. He was also assessed using Adaptive Behavior Assessment Scale, Second Edition (ABAS-2). This is a comprehensive, norm-referenced assessment of adaptive skills for individuals age birth to 89 years that measures strengths and limitations across three domains: conceptual, social, and practical. Vicente’s General Adaptive Composite (GAC) was 63, placing him in the Extremely Low range, though it should be noted that in the Social Domain his mean score was 100, placing him in the Average/Borderline range. His weaknesses were identified in the areas of functional academics, self-direction, and understanding social
norms Vicente's expressive language skills have been limited to 3-4 word bursts up until the last year or so, but shortly prior to the study, he had begun to initiate conversations and spontaneously express himself with increased frequency. He has also begun to experience some behavioral challenges while interacting with peers as he continues to build his expressive language. A behavior intervention plan has been developed in effort to help staff support Vicente.

Jennifer is a twelve-year old girl with Down syndrome and has a qualifying diagnosis of Deaf/Hard of Hearing and a secondary qualifying diagnosis of ID. Jennifer has very limited expressive verbal skills. She wears hearing aides in both ears to correct significant hearing loss. She has severe hearing loss in her left ear and mild-to-moderate hearing loss in her right ear. Her hearing aides are tested by staff each day and generally function well enough for Jennifer to hear typical speech sounds from herself and others. She also has significant visual impairment and wears thick glasses to help her see, though they do not completely correct her vision deficits. Jennifer's verbal communication is hampered by speech delays, however she can communicate with one and two word utterances and approximated sign and tries very hard to get her point across. Jennifer's most recent psychoeducational assessment was conducted in January of 2010. She was assessed using the Visualization and Reasoning battery of Leiter-R. Jennifer's Full-Scale IQ (FSIQ) of 56 identify her as Very Low to Mildly Delayed, which places her overall nonverbal skills below the first percentile when compared to same age peers. She was also assessed with the Vineland Adaptive Behavior Scales (VABS), a survey assessment that measures adaptive behavior across three domains (communication, daily living skills,
and socialization). Her composite average score (average between parent and teacher response composite) of 56 places her below the first percentile and in the Low range. This score indicates that she demonstrated mild defects in adaptive functioning, with relative strengths of in receptive language, school community living, and socialization at just above the 3-year old level.

**Video model participants**

Three same-age, typically functioning peers were selected to be the models for the VM segments presented to the participants. The criteria for participation was as follows: (a) models were approximately the same age as the participants, (b) models were typically-functioning peers, (c) models were able to read and rehearse scripted situations, and (d) models had parent permission to be filmed for the purposed of this study. Models were recruited from a school in the same city in which the study took place based on the criteria listed above and functioned at or above current grade level standards for students between the ages of 10-13. All three of the participating models were male.

**Procedures**

The four participants selected for this study were given two types of social skills interventions (VM and VM+RP) then observed to see how these skills generalized into peer-directed play situations. The teacher and staff based the skills selected for intervention on the observed needs of the group of participants as observed in peer-directed activity. The skills demonstrated to be most problematic included inappropriate reaction to physical contact from peers (aggression, yelling) difficulty sharing play items, asking for help from a peer, inappropriate use of language while upset, and taking turns
in a game. Out of these skills, the three that occurred most frequently across the four participants in peer-directed and semi-directed settings were sharing common play items, taking turns, and response to physical contact. These three skills became the focus of the behavior interventions. Participants were observed at three times during the day (school-wide lunch and two semi-directed play sessions, one in the classroom and one during an outdoors break activity) for 15 minutes for a total of 45 minutes per day, and monitored for appropriate and inappropriate interactions by means of observations three times over the course of one week. Throughout both outdoor break and lunch sessions, only peer-to-peer interactions occurred, across all phases of the study. During the indoor group session, both peer to peer and teacher to peer interactions occurred, however, this was maintained across all phases of the study. Through all phases, participants were observed three times per day for 15 minutes each for a total of 45 minutes, three days per week.

Baseline

Participants were observed in three settings for three explicit skills. The first setting was outdoors at the classroom sandbox. Participants were observed sharing objects during a school-wide break. Data was collected on inappropriate and appropriate sharing of objects. Inappropriate sharing of objects was defined as taking items without asking, verbal or physical argument over items, or hiding items from partners. Appropriate sharing was defined as asking for/giving objects, non-verbal gestures for sharing (e.g., handing over objects when a hand is extended or a hand points at an object). Participants were observed for 15 minutes per session over the course of 3 sessions.
The second setting was also outdoors, including the sandbox but also including the rest of the outdoor area where participants play with scooters and ball games during school-wide lunch. Participants were observed while making contact with each other. Data was collected on inappropriate and appropriate physical contact. Inappropriate contact was defined as bumping into a peer without response, responding aggressively (e.g., additional physical contact or perceived threat) to physical contact from another, inappropriate verbal response to physical contact (e.g., yelling at peer). Appropriate responses were defined by saying, "I'm sorry," when accidently bumping into a peer or similar form of apology, verbal or non-verbal acknowledgement of response to physical contact (e.g., "That's ok," or nodding of the head), or backing away from peer if touched inappropriately.

The third setting was indoors in the classroom during the afternoon structured playgroups. During these groups, combinations of two to three students rotated between three play activities every 20 minutes. Data was collected on inappropriate and appropriate turn taking among participants during a semi-directed play activity. Inappropriate turn taking was defined as taking one's turn out of order, taking play-dependent objects away from peers (e.g., dice, spinner, or token), inappropriate reaction to peer disruption (e.g., yelling, physical threat or aggression). Appropriate turn taking was defined as passing turn-taking items to peers (e.g., spinner, dice, or token), verbal or non-verbal acknowledgement of turn beginning or turn ending (e.g., "My turn," or "your turn," or nonverbal interactions such as passing objects with or without gestural prompt from peer).
**Video Modeling**

Scripts were created to demonstrate the three target skills to the participants. Two scripts were created for each skill. The first script demonstrated how not to perform the skill, while the second script demonstrated how to perform the skill accurately. Video recordings were made of the video model participants modeling these scripts in the targeted locations. The scenes were filmed using a Flip Video UltraHD® video recorder. The clips were edited using Apple’s iMovie ‘09® and presented to the participants in an interactive PowerPoint® presentation. The inclusion of the “inappropriate behavior” clips demonstrated the inappropriate behavior to the observing participants and incorporated a degree of humor that the participants could observe and understand. The participants worked in a small group including the researcher. 15-minute sessions occurred three times per week for two weeks. During each session, all six scenes were viewed. The participants were presented with both the “good” and “bad” behaviors and asked to vote “thumbs up” or “thumbs down” on the behavior of the video models. After each “good” and “bad” scene, a short discussion followed in which participants were asked specific questions about the clips (see Appendix A). Data was then collected each day during the three peer-directed activities throughout this phase of the study.

**Baseline**

After the VM phase, the intervention was discontinued and participants were again observed during break, lunch, and game activity, reverting to the baseline conditions. All interactions during this phase were again peer-directed or semi-directed as
during the initial baseline phase. Participants were observed in action/reaction to other peers and did not view the video clips during this phase.

**Video Modeling and Role playing**

Following the second baseline, the second intervention, the combined VM and RP phase, began. The second intervention incorporated the video modeling identical to the first intervention phase, however only the "appropriate behavior" clips were shown. After each clip, role playing exercises were introduced to demonstrate the desired behavior. Participants viewed each video scene and had the opportunity to become the actors in their own scene. The scripts used for student role-play activities were identical to those used by the actors in the video scenes. Each student role-played each scene with a peer so that the participants got to play all parts in each scene in a highly structured classroom setting. The VM + RP activity took place three times per week for two weeks. All three skills were addressed in each setting.

**Baseline**

The final phase was also a return to baseline condition identical to the previous two baseline phases. This provided for an evaluation of experimental control, along with an examination of skill maintenance over time without intervention strategies present. The intervention was removed and participants were measured for accuracy and generalization in peer-directed activities at break and lunch. Data were collected immediately following the end of the VM + RP phase as well as following a short period where data were not collected due to a school break. Thus the last three data points in the
final return to baseline phase represent measurement of the dependent variable two weeks following the termination of the VM + RP phase.

Dependent Variables

The two dependent variables in this study were appropriate and inappropriate responding. Appropriate responding was defined as any socially acceptable response to a peer, including but not limited to the following examples: sharing common objects, turning, and responses to contact. Inappropriate responding was defined as any socially unacceptable response to a peer, including but not limited to: inappropriate physical contact (hit/slap, bite, push), scream/yell lasting for more than 2 seconds, and taking of objects from others. Although other undesirable or desirable behaviors took place, only inappropriate behaviors directed towards peers were measured for this study.

Appropriate behaviors were tracked across three settings. The first was a school-wide outdoor break activity. Appropriate responses in this setting were defined as asking/initiating for objects in a peer-directed setting. Inappropriate responses were defined as grabbing or taking objects by force or the inability to wait up to 10 seconds without protest behaviors (whining/yelling or physical contact). During school-wide outdoor lunch, participants were observed in close proximity to each other and reactions to physical contact were tracked. Appropriate responses were defined as initiating phrases such as “excuse me” or “sorry.” Inappropriate responses were defined as physical response to contact (aggression) or undue verbal protest (yelling at student). At an indoor semi-directed play session, participants were observed taking turns in small groups. Appropriate behaviors were defined as requesting/taking a turn as well as peer-directed
prompting. Inappropriate behaviors were defined as taking/grabbing objects, taking someone else’s turn, and ignoring verbal/gestural prompts from peers. The total amount of appropriate behaviors for the day across all three settings was tallied over the total amount of both appropriate and inappropriate behaviors for the day to create a percentage of appropriate behavior. A percentage was created for each student on each day across all phases of the study.

Data Collection

Data was collected for all five phases of the study. Data was collected using a frequency count over a 15-min period and was displayed graphically as a percent of appropriate responses for each phase of the study. Participants were measured on the performance of the appropriate responses and any incidents of inappropriate responding. For all phases of the study, data on the dependent variables was collected three times per day, three days per week. Data was collected while observing peer-directed activity during outdoor play periods and during the designated game session in all phases of the study. A daily data collection tool was designed to track the four student participants across the three behaviors (see Appendix B). The rate of appropriate response was calculated by tallying the total number of appropriate responses over all three daily tracking periods and dividing by the number of appropriate plus inappropriate responses (or total number of all responses).

Data Analysis

Once the data collection period ended, the participant data was compiled using Microsoft Excel® and a graph was created for each participant demonstrating the effects
of the independent variables on the selected dependent variables. Effects of the independent variables on the dependent variables were evaluated by visual inspection of level and trend changes for each participant across all phases of the study.

**Inter-observer Agreement**

A second observer assisted with data collection and was trained by the researcher to maintain reliability. This second observer was utilized throughout the data collection phases to maintain consistency in measurement. From this, Inter-observer Agreement (IOA) data was obtained to measure the reliability of the data collected. This occurred in 5 out of a total of 24 sessions, or 20.83% of all sessions, one for each of phase of the study. The IOA was calculated by dividing the number of agreements by the total number of agreements plus disagreements, and multiplying by 100 to get a percentage of agreement. Average IOA for all participants and phases of the study was 95.58% with a range between 91.6% and 99.3%.
CHAPTER 4

Results

The goal of this project was to investigate two strategies to increase appropriate social skills in middle school students with intellectual disabilities. The purpose was to analyze the effect of the two intervention packages of video modeling (VM) and video modeling combined with role playing (VM + RP) and to examine the generalization effects of these interventions on appropriate responding during peer-directed activities. Results are displayed in Figure 1.

In the initial baseline phase, all of the participants averaged more inappropriate than appropriate social skill responses across the three activity settings. Through the VM phase, all participants demonstrated increased appropriate responses that then decreased somewhat under the initial return to baseline phase. During the VM + RP phase, all participants again demonstrated increased appropriate behavior, trending higher than both previous baseline phases and the video modeling phase. These gains then decreased to some extent under the final return to baseline phase, although rates of appropriate behavior remained higher than during the previous baseline phases.

Jennifer

During baseline, Jennifer made few successful appropriate responses or initiations toward other peers. Through the first intervention, her rate of appropriate responses increased from an average of 8% to 25%, which subsequently decreased once the intervention was removed. The data recorded during the second baseline was similar to
the original baseline, averaging 14%, suggesting a functional relationship between the Video Modeling intervention and Jennifer’s appropriate responses. Jennifer experienced a marked increase in appropriate responses during the second intervention, averaging about 40% through the intervention period and trending higher as the intervention progressed. These gains were observed to diminish somewhat during the final return to baseline phase, averaging about 31%, suggesting a causal relationship between the VM + RP intervention and her appropriate responses. It is interesting to note that levels of appropriate responding in the final return to baseline phase remained higher than that observed in the first two baseline phases as well as the VM condition, suggesting some enhanced maintenance of treatment gains from the combined intervention procedure (see Figure 1).

Nancy

Nancy was observed to display the highest levels of appropriate responses, compared to the other participants, throughout all phases of the study. Her baseline rate of appropriate responding was 56%, substantially higher than the other participants in the study. During the VM condition, her rate of appropriate responses rose to 67%. This level maintained during the second baseline at a rate of 69%, limiting the establishment of a functional relationship between VM and appropriate responding. However, her rate of appropriate responses rose further during the VM + RP intervention, averaging 79% appropriate responses. During the final return to baseline phase, Nancy’s levels of appropriate responses decreased, averaging 65% over the course of the maintenance
period, suggesting that a functional relationship between the combined intervention and appropriate responses was established (see Figure 1).

**Vicente**

Vicente displayed low levels of appropriate responding during the initial baseline phase, with an average rate of response of 12%. This was observed to rise to an average of 29% during the VM phase. Interestingly, Vicente’s rate of appropriate responses was observed to further increase during the return to baseline period, averaging 36%. However, during the combined VM + RP phase, Vicente’s average rate of responses was observed to further increase to 50%. In the final return to baseline phase a marked decrease was observed, with levels of appropriate responding falling to an average of 32%, and supporting the establishment of a causal relationship between the combined intervention and appropriate responding (see Figure 1).

**Michael**

Michael was observed to engage in some level of appropriate responding during the initial baseline period, averaging about 24% of all responses. Through the first intervention, his appropriate responses increased, averaging 49% across the intervention. During the return to baseline, his level of appropriate responses were varied, averaging 49%, making claims regarding the establishment of a functional relationship difficult to assert. Michael was able to maintain his average rate of responses once the VM intervention was removed, though it should be noted that there were extreme variations from day to day. For the first session after the VM intervention was removed, Michael averaged a rate of 66% appropriate responses, continuing the upward trend observed
during the VM intervention phase. On the second session of this phase, Michael’s levels of appropriate responding decreased to an average of just 25%, nearing initial baseline levels. On the third session of this phase, Michael demonstrated an increase in his rate of appropriate responses to 53%, nearing his average rate during the intervention. In the second, combined intervention, Michael made significant growth in his rate of appropriate responses, averaging about 60%. These gains were observed to decrease during the final return to baseline phase, averaging 45%, and suggesting a causal relationship between the VM + RP condition. As with Jennifer, Michael’s levels of appropriate responding in this final return to baseline phase were still higher than either of the two baseline conditions (see Figure 1).

Summary

While improvements from initial baseline levels were observed for all participants when the VM phase was in effect, the lack of a clear return to baseline levels for all participants limits claims related to the establishment of a functional relationship between this intervention implemented on its own and levels of appropriate responses among participants with Intellectual Disabilities. However, all participants were observed to display increases in levels of appropriate responding from the second baseline condition when the phase consisting of a combination of VM + RP was implemented. More importantly, these levels were observed to decrease, at least somewhat, for all participants over the course of the final return to baseline phase. These results support claims that a causal relationship between the combined VM + RP intervention and appropriate responses was established. Furthermore, levels of appropriate responding
during the final return to baseline phase were observed to remain at higher levels than
were observed in the first two baseline phases in nearly every case. This may indicate that
gains from either one or both of the intervention phases maintained to a discernable level
over time.
Figure 1. Percent of appropriate responses during Video Modeling alone and Video Modeling plus Role Playing conditions.
CHAPTER 5

Discussion

Introduction

This study evaluated the two intervention strategies of video modeling (VM) alone and video modeling paired with role playing (VM + RP), and examined the rate of appropriate student responding across three settings: two peer-directed outdoor play sessions and one semi-directed indoor structured play session. Specifically, the percent of appropriate responses were measured across three settings through five phases: baseline, video modeling intervention, return to baseline, video modeling and role playing intervention, and a final return to baseline phase. The participants were four middle school students with varying levels of intellectual disabilities. During baseline, all participants displayed some levels of appropriate responding but at low enough levels that the interventions were warranted. Through the first intervention, all four participants made some gains in appropriate responding. Decreases in appropriate responding were observed for three of the four participants once the intervention was removed. During the second intervention, all four participants showed significant gains in percent of appropriate interaction over the initial return to baseline phase. These gains were observed to decrease during the final return to baseline phase for all four participants, suggesting that a causal effect of VM + RP on levels of appropriate responses was established. Despite the decreased levels during return to baseline phases, all four
participants displayed an average percent of appropriate interaction far above initial baseline levels. It is interesting to note that all participants displayed a higher average percent of appropriate interaction during the second intervention than during the first intervention.

Video Modeling

All participants demonstrated some increases in appropriate responding during the video modeling phase when compared to the initial baseline phase. During the VM phase, participants watched a series of videos depicting both appropriate and inappropriate behaviors in three specific settings: outdoor break (peer-directed activity), outdoor lunch (peer-directed activity), and indoor group games (semi-directed and peer-directed activity). When the VM intervention was removed, 3 out of 4 participants displayed a decrease in rate of appropriate behaviors. The VM intervention alone allowed the participants to watch same-age peers model target behaviors in a fun, safe atmosphere and created opportunities for small-group discussion and commentary on the videos. During the VM intervention, the participants watched a total of six videos depicting the three target behaviors: sharing items, unwanted contact, and taking turns. For each behavior, there were two video clips shown. The first clip depicted a “what not to do” clip displaying how not to perform the behavior. These were slightly exaggerated for comic effect that would be discernable to the participants. The second video clip showed exactly how to perform the target behavior. For each clip, there were a series of discussion questions to help the participants further process the video content (see Appendix 1). The participants appeared to respond favorably to the videos, particularly
by the third showing, as they were able to predict what was coming (e.g., "Ooh, they’re
going to hit each other, or “so now they have to share.”). The discussion questions also
allowed the examiner to check for comprehension. All four participants were able to, by
the sixth session, declare if the video was “good” or “bad” by giving it a thumbs-up or
thumbs-down vote. Nancy was easily able to decide and accurately label “good” or “bad”
from the first day. Michael caught on quickly by the second day. Vicente was able to
label the videos accurately by the second week, while Jennifer was too inconsistent with
her responses to discern if she was able to correctly label independently. She tended to
respond with “yes” on every video regardless of content. Also, she would follow the
group (i.e. when the others voted, she followed suit when she was last to vote.)

When the intervention was removed, all participants demonstrated some decrease
in rate of appropriate responses when compared to the VM intervention. On the first
session after removal of intervention, Michael maintained a rate of appropriate response
higher than during intervention, demonstrating some continued use of appropriate
responding in dealing with unwanted contact (2 out of 3 successful opportunities) and
turn taking (2 out of three successful opportunities, but continued to display difficulties
when sharing items with others in the peer-directed play setting (1 out of 3 successful
opportunities). On the second and third post-intervention sessions he demonstrated a
decline in his rate of appropriate responses across all settings, then increased slightly on
the third session. Overall, his average rate of response maintained despite removal of
intervention. It should be noted that due to Michael’s FXS, unpredictability in other
students’ interactions often resulted in some behavioral difficulties (e.g., when students
behave in ways he disapproves of, he will comment on it to staff or take initiative to correct the student’s behavior. This is usually done with a verbal reprimand; however, if the student in question does not meet his demands tantrum behavior often ensues, as demonstrated by increased verbal response, inappropriate language, spiting, physical contact, or other aggressive behaviors.). These behaviors often interfere with his ability to attend to task and engage appropriately, as demonstrated by the fluctuation in his average rate of response during the second baseline. It should also be noted that, out of the four participants, Michael was the only one to make verbal reference to the video models during the data collection sessions. At the sandbox during the peer-directed outdoor break session monitoring for sharing objects, Michael said, “I’m Steven. I’m not pushing anyone. What do I say? I say… Can I have that?” When he asked Vicente for one of the sand shovels, however, Vicente did not respond. Michael picked up the shovel, looked at Vicente (who continued to not respond), and took the shovel without incident. Nancy made some appropriate initiations during the peer-directed activities, but resorted to whining and complaining when peers did not respond. Her first response when denied an “appropriate peer response” was to cry out. Her second response was to seek out adult assistance in solving her problem. She did not attempt to resolve any issues directly with other participants.

**Video Modeling plus Role Play**

The VM+RP intervention was observed to be effective in raising the collective average rate of appropriate response across all participants. The average rate of appropriate responses across all participants during the VM intervention was
approximately 42%. During the VM + RP intervention, the average rate of appropriate response across all participants rose to 58%.

**Jennifer**

Jennifer’s average rate of appropriate responses throughout all phases of the VM+RP intervention rose to almost 38%. Her weakest area had been responding to unwanted contact. She made no appropriate interactions during the initial baseline. Occasionally Jennifer would bump into someone accidentally, but would not acknowledge this to peers. This left the bumped peer feeling injured and likely to respond negatively. During the VM+RP, Jennifer practiced saying “Sorry,” and “Excuse me,” when bumping into peers. Her level of self-initiated or peer-initiated appropriate response during this intervention rose to 29%, then dropped down to just under 5% once the intervention was removed, supporting the establishment of a causal relationship between the combined intervention and appropriate responding. Throughout the role-play sessions, Jennifer needed more verbal and physical prompting than the other participants, but by the second week of role playing sessions she was able to complete each vignette with only a few verbal prompts.

**Nancy**

Nancy’s average rate of appropriate responses rose from 67% during the VM phase to almost 82% in the VM + RP intervention. As Nancy’s initial baseline data was significantly higher than the rest of the participants’, she was able to serve as an environmental model for appropriate behavior. This was clearly evident in the peer directed activities (sharing items and unwanted contact). In one session, Nancy purposely
bumped into Jennifer. After she bumped into Jennifer, Nancy said, “Sorry!” When Jennifer did not respond, Nancy prompted her: “You say ‘Okay,’” followed by Jennifer saying, “Okay.” Then the two role-played the scenario one more time, independently. Nancy was clearly leading the activity, prompting Jennifer to say the lines from the role play activity, however Jennifer was willingly participating and practicing the skill. Nancy’s average rate of appropriate interactions dropped to approximately 58% once the interventions were removed, maintaining for the first two sessions but steadily decreasing over the next four sessions.

Vicente

Vicente’s rates of response were erratic compared to group; however he was able to raise his average rate of appropriate interaction from approximately 31% during the second baseline to almost 51% during the VM+RP intervention. Vicente is very friendly with Jennifer and was instrumental in attempting to prompt her during the role playing session demonstrating reaction to contact. During the third VM+RP session, Vicente initiated prompting with Jennifer. While practicing how to say “sorry” or “excuse me,” Vicente was observed stopping her from walking away, saying, “No, you have to say ‘Sorry.’ Do it again,” displaying a clear understanding of the script and the appropriate response, though slightly aggressive in tone of voice. His weakest repertoire was during the semi-directed/peer-directed taking turns observations. He displayed difficulties in appropriate responding when peers deviated from the script (i.e., a different game from the video model was played, initiating peer used a variation of the script, another peer displayed inappropriate behavior). When a peer displayed inappropriate behaviors,
Vicente would focus on the inappropriate behavior rather than the task at hand. Typical responses in this situation included pointing his finger at the offending peer, yelling at the peer, or telling the peer to "get mad" repeatedly. This often prompted an emotional response from the opposing peer that would assist in escalating Vicente's behaviors. Vicente was able to demonstrate increased appropriate behaviors throughout the second intervention and decreased responses once the intervention was removed.

**Michael**

Michael's rates of response were also erratic throughout, even when compared with Vicente, as demonstrated by fluctuation during the second baseline and VM+RP intervention phases. Despite the erratic rate of appropriate responses, Michael's average rate during the second baseline of approximately 45% rose to 62% during the VM+RP phase and dropped off again to almost 41% during the final return to baseline. He continued to initiate interaction across all settings and began to refer to the video models both during the role-play sessions as well as during the peer-directed and non-directed settings. He worked well with Nancy to assist redirecting Jennifer and attempted this several times without adult prompting. He attempted to role-play the sharing items scenarios at the sandbox once the second intervention was introduced and was observed initiating and responding appropriately while laughing and pointing out appropriate and inappropriate interactions among peers. Quotes from Michael include, "We did the same. We asked!" and "No, I say I want shovel please, and you say ok. Then you go here and I go thank you."
Final Baseline

The final baseline phase was split; the first three sessions were conducted immediately after the second intervention over the course of a week. A week-long school break occurred, followed by three more sessions the following week. This final baseline phase was conducted to demonstrate experimental control, which was supported by downward trends in appropriate interactions across all participants during the final baseline phase.

Participant Summary

Appropriate interactions increased while the participants viewed video models of the appropriate behaviors and engaged in role playing exercise in which the participants performed the same scripted behaviors of the video models. It is interesting to note that once the role playing component was added, the participants’ verbal commentary regarding the intervention increased. Once the second intervention was removed, all participants experienced a decrease in appropriate behaviors. Anecdotal observations also revealed a decrease in verbal commentary accompanying non-directed and peer-directed activity.

Limitations

A number of limitations to the current study are worthy of mentioning. First, as is inherent in single case designs, the small sample size does not necessarily provide for generalization to other populations. Secondly, the first intervention (VM) was replicated in part during the second intervention (VM+RP). As participants were exposed to the VM intervention in both interventions, the effects on appropriate interaction may have carried
over into the second intervention, creating interaction effects. Third, the short length of time for each intervention did not allow for skills to maintain once the interventions were removed, although this finding does lend support to claims for a functional relationship being established between the interventions and appropriate responding. Fourth, while behavior was observed to co-vary with implementation and removal of the interventions, these changes were not clear and dramatic for all participants, thus tempering claims related to the establishment of a functional relationship between the interventions and levels of appropriate responses among students with ID. Lastly, there may have been limitations in how the video modeling was conducted. For example, the individuals participating as video models were not known to the participants, nor were they individuals with special needs. The settings used in the video models were identical to those used by the participants, however there were some slight variations between what was shown in the video and what was actually available to the participants. Different toys may have been shared in the outdoor play session and an assortment of games were used during the indoor play session to replicate the natural classroom game sessions where participants select the game they would like to play. This may have affected participant responding during the study.

Implications

All participants were observed to display increases in rates of appropriate behaviors from the second baseline condition when the combination intervention of VM+RP was implemented. These rates were observed to decrease over the final baseline
condition, supporting a causal relationship between the combination intervention and rate of appropriate response.

The implications of these findings for practitioners suggest an ongoing intervention of video modeling and role playing to ensure continued success in developing social skills repertoires. Teachers can isolate specific behaviors to target and create videos using student models. Once created, teachers can use the videos as a direct intervention followed by role playing the scenes with students. It is interesting to note that student commentary on the project increased dramatically during the combined intervention phase. The role playing activities gave students access to key phrases and demonstrated when and how to use them, thus increasing appropriate verbal skills. The videos themselves were simple to make and share. The video clips for this project were created with a hand-held video camera, but could also be created using a smartphone or tablet. The clips were then displayed using a computer connected to a projector, but could easily be displayed on a laptop, tablet, or television for easy access and playback. The role playing activities did not require any additional equipment. Written scripts were not provided to participants as they were expected to demonstrate the words and actions of the models with teacher assistance. The questions that follow each script (see Appendix A) are key discussion points for teachers to create a dialogue with the students to help define the behaviors. These were helpful in the VM phases to clarify the notion of what an appropriate behavior is versus an inappropriate behavior and allowed for a quick and easy comprehension check.
The implications of findings on future research suggest the need to determine how much of the intervention is needed to achieve maintenance, or if this can be achieved at all. As both interventions were unable to provide a demonstration of skill maintenance over time, clearly the interventions should be kept in place for longer periods of time. Future research is warranted due to positive trends in acquisition of appropriate responding across participants and settings during the second intervention.

**Conclusions**

This study found that two interventions, video modeling alone and video modeling combined with role-play, increased appropriate student interactions across three classroom settings. The second intervention, video modeling plus role-play, proved more successful as the intervention had higher rates of appropriate interaction compared to both the video modeling intervention and baseline. Clear improvements were demonstrated from baseline to intervention, and a functional relationship was established for the video modeling plus role-play intervention. This research extends the application of VM and RP beyond the population of students with autism to students with other ID. The study provides preliminary evidence that a combined intervention using video modeling and role playing can improve appropriate social interactions in middle school students with intellectual disabilities.
Bibliography


Appendix A: Video Modeling Scripts

SCENE 1-1
SHARING COMMON ITEMS (WHAT NOT TO DO)
(A sandbox outside of classroom, filled with several sand toys (shovels, buckets, plastic toys. JOE and STEVEN are both seated on the ground at the sandbox. Both are playing with plastic sand toys. JOE looks up and sees STEVEN playing with a shovel. He reaches over and tries to grab the shovel out of STEVEN’S hands. They tug back and forth until JOE succeeds in wrestling the toy out of Steven’s hands. Steven falls back onto the ground.)

STEVEN
Hey! No fair! That’s mine! That’s MINE

(JOE pays no attention to STEVEN’S yells and begins to play with the toy shovel. STEVEN reaches out and grabs the shovel out of Joe’s hands.)

JOE
Hey! Mine! MINE!

(STEVEN reaches over the sandbox and pushes JOE over.)

[END SCENE.]

Discussion Questions:

1. Did anyone get mad? Who got mad?
2. Did anyone share? Who shared?
3. What do you do when someone wants a toy?
4. Is it okay to take away someone’s toy?
SCENE 1-2
SHARING COMMON ITEMS (WHAT TO DO)

(Sandbox outside of classroom, filled with several sand toys (shovels, buckets, plastic toys). JOE and STEVEN are both seated on the ground at the sandbox. Both are playing with plastic sand toys. JOE looks up and sees Steven playing with a shovel.)

JOE
Hey, can I play with that?

STEVEN
Sure. Here!

(STEVEN gives Joe the shovel. JOE begins to play in the sand with the shovel. STEVEN picks up another nearby toy and plays in the sand. He notices a bucket next to JOE and looks at it for a moment.)

STEVEN
Can I play with that (points to bucket next to Joe)?

(Joe reaches out and gives Steven the bucket.)

JOE
Here.

[END SCENE]

Discussion Questions:
1. Did anyone get mad? Who got mad?
2. Did anyone share? Who shared?
3. What do you do when someone wants a toy?
4. Is it okay to take away someone’s toy?
SCENE 2-1
TAKING TURNS (WHAT NOT TO DO)

(Inside the classroom at the game table. A board game is laid out on the table, complete with cards and a spinner. The spinner is a play device in which the child pushes down on the center button to make the device spin. The spinner makes noises and lights up as it is moving.) JOE, DAVE, and STEVEN are seated at the table, playing the board game. Steven picks up the spinner and takes his turn. JOE is not paying attention; he is looking away from the table and picking at his fingernails. STEVEN waits a couple of seconds, then pushes the spinner with force, making loud noises.)

JOE
(Coming out of his thoughts and returning to the game)
Hey! No fair! My turn!

(STEVEN pays no attention to JOE and finishes his turn. JOE reaches out and grabs the spinner out of STEVEN'S hands.)

JOE

MINE!

(STEVEN tries to grab the spinner from JOE. They struggle briefly before knocking the spinner to the floor. DAVE merely looks on, mouth open.)

[END SCENE]

Discussion Questions:

1. Did anyone get mad? Who got mad?
2. Did anyone share? Who shared?
3. What do you do when it’s your turn?
4. What do you do when it is someone else’s turn?
SCENE 2-2
TAKING TURNS (WHAT TO DO)

(Inside the classroom at the game table. A board game is laid out on the table, complete with cards and a spinner. The spinner is a play device in which the child pushes down on the center button to make the device spin. The spinner makes noises and lights up as it is moving on the table. JOE, DAVE, and STEVEN are seated at the table, playing the board game. STEVEN picks up the spinner and takes his turn. JOE is not paying attention; he is looking away from the table and picking at his fingernails. STEVEN waits a couple of seconds, then pushes the spinner with force, making loud noises.)

JOE
Hey! No fair! My turn.

STEVEN
Huh?

JOE
It's my turn. Can I have the spinner?

STEVEN
(STEVEN hands over the spinner to JOE)

Sorry.

JOE
My turn.

(COOL!! I got one!

Your turn.

(Dave hands the spinner to DAVE)

DAVE
(Takes spinner from JOE)

My turn.
(DAVE pushes the spinner then flips over some cards. When he finishes his turn, the hands the spinner to STEVEN)

Here. Your turn.

STEVEN

Thanks.

(STEVEN pushes down on the spinner, activating it. The spinner makes noise and flashes)

[END SCENE]

Discussion Questions:

1. Did anyone get mad? Who got mad?
2. Did anyone share? Who shared?
3. What do you do when it’s your turn?
4. What do you do when it is someone else’s turn?
SCENE 3-1
UNWANTED CONTACT (WHAT NOT TO DO)

Inside the classroom, STEVEN is sitting at a desk next to the aisle where others pass by frequently. JOE walks past STEVEN'S desk and bumps into his shoulder unintentionally on his way back to his desk. He sits down next to STEVEN at his own desk.

STEVEN
(Turns to JOE)
Hey! Cut it out! Why are you ALWAYS TOUCHING ME?!?!
(He makes a face, clenches his teeth, very upset)
DON'T TOUCH ME!!! I don't LIKE IT!
(By this point, his voice is screeching)

JOE
(Looks at STEVEN, confused)
Huh?

STEVEN
(Yells in JOE'S face, inches from his nose)
STOP IT!!
(JOE turns away and looks at his desk and begins to color on a paper)

[END SCENE]

Discussion Questions:
1. Did anyone get mad? Who got mad?
2. Did anyone say “I'm sorry?”
3. What do you do when someone bumps into you?
4. What do you do when you bump into someone?
SCENE 3-2
UNWANTED CONTACT (WHAT TO DO)

Inside the classroom. STEVEN is sitting at a desk next to the aisle where others pass by frequently.

JOE walks past STEVEN'S desk and bumps into his shoulder unintentionally on his way back to his desk. He sits down next to STEVEN at his own desk.

STEVEN
(Mildly annoyed, but mostly calm)
Hey, you hit me.

JOE
(Looks at Steven, confused)
Huh?

STEVEN
(Slightly louder)
You hit my arm!

JOE
Oh! I’m sorry. It was an accident.

STEVEN
(Annoyed, but satisfied.)
That’s ok.

[END SCENE]

Discussion Questions:
1. Did anyone get mad? Who got mad?
2. Did anyone say “I’m sorry?”
3. What do you do when someone bumps into you?
4. What do you do when you bump into someone?
## Appendix B: Sample Data Collection Form

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<th>Outside Lunch Behavior: unwanted contact</th>
<th>Indoor groups Behavior: taking turns</th>
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<td>+ - Total #</td>
<td>+ - Total #</td>
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Jessica

Naydeline

Victor

Mason
Appendix B: Sample Data Collection Form

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