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The Impact Of Video Modeling And Peer Mentoring Of Social Skills For Middle School Students With Autism Spectrum Disorders In In

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THE IMPACT OF VIDEO MODELING AND PEER MENTORING OF SOCIAL SKILLS FOR MIDDLE SCHOOL STUDENTS WITH AUTISM SPECTRUM DISORDERS IN INCLUSIVE SETTINGS

by

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ABSTRACT

Given the behavioral expectations of students by teachers and peers in middle school inclusive classrooms and characteristics inherent to students with ASD, the purpose of this study was to explore the impact of video modeling and peer mentoring of five critical social skills for inclusion on middle school students with ASD. Specifically, the extent to which the combination of video modeling and peer mentoring of five critical social skills would increase the level of demonstration of these skills in the general education inclusion setting was investigated. Because individuals with ASD exhibit limited social communication skills, those skills necessary especially at the middle school level to understand the "hidden curriculum", social skills instruction has been deemed important (APA, 2004; Smith-Myles & Simpson). The current multiple baseline across subjects study was grounded in the research on video modeling (Bellini & Akullian, 2007) and peer mentoring (Fuchs & Fuchs, 2005; Maheady, Harper, & Mallette, 2001) as methods of providing social skills instruction for middle school students with ASD (Goldstein & McGinnis, 1997; Smith-Myles & Simpson, 2001). The impact of the video models and peer mentors was measured using the level of demonstration of five critical social skills on three middle school aged students with ASD. All three students with ASD were included in at least one general education classroom. The results of this investigation indicated that the combination of video modeling and peer mentoring of critical social skills positively impacted the levels of demonstration of the skills of students with ASD. While results varied, all three students with ASD increased their levels of demonstration of the targeted critical social skills.

This dissertation is dedicated to my family, Larry and Mary Ellen, Anne, Harold, and Justin, for their unconditional love and support and for the lifetime of love I have seen through their eyes. I dedicate this to you and thank you for helping me become the woman I now am and the teacher I strive to be. We've faced many "elephants" throughout the years and I was lucky enough to have you to teach me how to "eat" those elephants one bite at a time. Very few people get to meet their heroes. I have been fortunate to have lived a lifetime with mine.

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LIST OF ACRONYMS/ABBREVIATIONS

ADA	Americans with Disabilities Act
ADI-R	Autism Diagnostic Interview-Revised
APA	American Psychiatric Association
ASD	Autism Spectrum Disorders
ASSP	Autism Social Skills Profile
AT	Assistive Technology
CARS	Childhood Autism Rating Scale
CBA	Certified Behavior Analyst
CDC	Centers for Disease Control and Prevention
CEC	Council for Exceptional Children
CSS	Critical Social Skills
DSM-IV TR	Diagnostic and Statistical Manual of Mental Disorders 4th Edition
EAHCA	Education of All Handicapped Children Act
ELL	English Language Learners
FCAT	Florida Comprehensive Assessment Test
FL DOE	Florida Department of Education
GARS	Gilliam Autism Rating Scale
IDEA	Individuals with Disabilities Education Act
IEP	Individualized Education Program
IOA	Inter-observer Agreement
IQ	Intelligence Quotient
LRE	Least Restrictive Environment
NCLB	No Child Left Behind
NICHDY	National Institute of Child Health and Human Development
NIMH	National Institute of Mental Health
PALS	Peer-Assisted Learning Strategies
PDD	Pervasive Developmental Disorders
PDD NOS	Pervasive Developmental Disorders Not Otherwise Specified
PM	Peer Mentor
PMs	Peer Mentors
PP	Primary Participant
PPs	Primary Participants
REI	Regular Education Initiative
SRS	Social Responsiveness Scale
US DOE	United States Department of Education
WWC	What Works Clearinghouse

CHAPTER 1
THE PROBLEM AND ITS CLARIFYING COMPONENTS

Introduction

This chapter provides a rationale for addressing the social skills of children with Autism Spectrum Disorders (ASD) utilizing a combined intervention that incorporates video modeling and peer mentoring. The chapter begins with an overview of characteristics of students with ASD, including statistical information on prevalence and trends. Next, a description of effects of research-based interventions on social skills instruction for students with ASD is discussed. Then, a description of the role and purpose of video modeling in social skills instruction is provided followed by the role of peer mentors. The chapter concludes with the research questions, the limitations of the study, and a discussion of the potential contributions to research and practice. Additionally, definitions of terms utilized in the investigation are provided.

Conceptual Framework of the Study

Autism Definition and Prevalence

The Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, (APA, 2004) has described Autism Spectrum Disorders (ASD) as a combination of impairments in social interaction, communication, and restricted, repetitive, and stereotyped patterns of behavior, interests, and activities (American Psychiatric Association, 2004). The American Psychiatric Association (APA) has reported that individuals with autism: (a) may exhibit difficulty relating to others; (b) may have an obsessive insistence on

environmental sameness; and (c) are well-known for atypical and often difficult to understand behaviors, including stereotypic, repetitive, and self-stimulatory responses. A final criterion is that these behaviors must begin at an early age and continue throughout life (APA, 2004).

In March 2006, the Centers for Disease Control and Prevention (CDC) released the staggering statistic that the numbers of individuals diagnosed with ASD had reached a level of 1 in 150 children (CDC, 2007). In 2002, the CDC reported that up to 1 in 1,000 or 500,000 total individuals nation-wide, ages 0-21, carried the diagnosis of ASD. These statistics qualify autism as the sixth most commonly classified disability in the U.S., more prevalent than diagnoses of childhood cancer, and similar to the numbers reported in the area of juvenile diabetes (CDC, 2007). Nationally, between the years 2002 and 2004, the number of students with ASD spending more time in the general education classroom increased by 4.4% while the amount of time spent in self-contained settings by children with ASD decreased by 3.3%. Moreover, at the middle school level, 42% of students with ASD spent almost ninety percent of their school days in inclusive settings between 2002 and 2004 (US DOE, 2007). Increasing numbers of children diagnosed with ASD correlates to more children with ASD requiring support in all aspects of school and life. This level of support for students with ASD has increasingly been provided in general education classrooms across the age span, including middle and high school settings. More students with ASD have increasingly been provided instruction in general education classrooms across the age span, including middle and high school settings. However, as the academic demands of the middle school setting have increased, so have

the social demands for students with ASD. For example, during a typical day a middle school student may travel to five or more different classes with as many teachers and peer groups. These hourly changes in classrooms simultaneously increases the social demands for students with ASD who already struggle with meeting social "norms" on a day-to-day basis. According to Lane, Pierson, and Givner (2003), all students must know and understand the social and behavioral expectations for many teachers and peer groups to be successful in middle school. Often this hidden social curriculum of middle school can prove to be difficult for students with ASD (Smith-Myles & Simpson, 2001).

Peer expectations of social behaviors are known as the "hidden curriculum". Smith-Myles and Simpson (2001) described the "hidden curriculum" as being the "do's and don'ts" of everyday behavior that are not spelled out, but everyone is expected to follow. The middle school "hidden curriculum" includes behaviors such as modes of dress, how a child greets another peer, and how people talk to each other. For example, Smith-Myles and Simpson (2001) provided the following example of a middle school "hidden curriculum" to illustrate the importance of providing social skills instruction for students with ASD:

> Ramona, who has always had difficulty with social situations, noticed that many students at her middle school cursed. Noticing that the colorful words appeared to cause laughter; she concluded that cursing could help her make friends. Consequently, during the passing period between second and third hour; she walked up to a girl she knew and began to talk to her; infusing into her conversation some curse words. The girl stared at Ramona in amazement but said nothing. Ramona was startled when the principal interrupted her conversation and told her to come to the office NOW! Ramona did not know the "hidden curriculum" about cursing in middle school: Before you curse, look around and make sure no adults are around (p. 280).

Situations such as the one in which Ramona found herself are reasons for providing social skills instruction to middle school students with ASD. However, at the time of the study by Smith-Myles and Simpson, the research base on social skills instruction for middle school-aged students with ASD was limited. Yet with more and more students with ASD being expected to master this "hidden curriculum" in inclusive middle school classrooms research is needed related to teaching and supporting students within this "hidden curriculum".

Inclusion

If students with ASD are to be included in the general education setting, understanding what inclusive practices are is important. In the literature inclusion is more than the law. Inclusion is a belief that students with special needs can and should be educated in the least restrictive environment and have access to the same curriculum and learning experiences as their peers without special needs. Students with ASD can and will learn from watching each other, from playing together, and from participating in the general education classroom (Downs & Smith, 2004; Schwartz, Sandall, McBride, & Boulware, 2004). With the No Child Left Behind Act (NCLB), legislation is in place that has increased the amount of time students with ASD spend in the general education classroom. Hence increasing both academic and social demands. Schwartz, et al. (2004) reported that it is imperative that children with ASD have multiple opportunities to interact successfully with typically developing peers every day. Inclusion is a valuable

tool for facilitating this kind of positive, comprehensive educational experience for both students with disabilities and general education students.

For children with ASD, inclusion has many documented benefits. Specific benefits of inclusion have been noted in the areas of academics (Downing & Eichinger, 2003), social skills (Harrower & Dunlap, 2001), communication skills and behavior (Freeman & Alkin, 2000; Mesibov & Shea, 1996). In the area of academics, educational goals were viewed to be more advanced and expectations were higher for students with ASD in inclusion settings. Additionally, students with ASD demonstrated improved test scores and academic engagement in inclusive settings (Downing & Eichinger, 2003). According to Mesibov and Shea (1996), students with ASD in these settings had more developmentally advanced IEPs than students in segregated settings. Benefits of inclusion also have been documented in the area of behavior and social skills including: (a) increased appropriate play skills (Downing & Eichinger, 2003), (b) decreased disruptive behaviors (Symon, 2005), (c) increased rates of on-task behavior, (d) increased frequency of positive social interactions (Blacher & Kaladjian, 2005), and (e) better modeling of non-disabled peers (Harrower & Dunlap, 2001;). Researchers have also noted benefits of inclusion in the area of communication skills including increased eye contact (Downing & Eichinger, 2003), increased appropriate requests for breaks and/or attention (Fisher & Meyer, 2002), increased engagement in language and joint attention behaviors (Harrower & Dunlap, 2001). To fully reap the benefits of inclusion for students with ASD, these researchers have found social skills instruction is necessary (Odom, et al., 2003; Simpson, 2005). Social skills instruction is a valuable tool to enhance the

experience of students with ASD in inclusive settings by providing support for the social skills deficits inherent to individuals with ASD.

Social Skills Instruction

Due to the lack of research on social skills instruction for students with ASD at the middle school level, it is necessary to extrapolate the benefits reported for students with ASD in elementary grades and consider how to apply that research to students with ASD in middle schools. For example, Morrison, Kamps, Garcia, and Parker (2001) noted that social skills instruction decreased inappropriate behaviors for elementary students with ASD. Furthermore, Simpson, de Boer-Ott, and Smith-Myles (2003) reported increases in peer networks, rates of on-task behavior, and frequency of positive social interactions, as well as longer durations of peer interactions in their investigation of elementary students with ASD as a result of social skills instruction. Additionally, Downing and Eichinger (2003) and Harrower and Dunlap (2001) documented increases in reciprocal conversations, eye contact, and appropriate requests for breaks and attention for elementary students with ASD when provided with social skills instruction.

One approach to addressing social skills across all grade levels has been the *Skillstreaming the Adolescent* curriculum (Goldstein & McGinnis, 1997). The *Skillstreaming* curriculum, originally developed for adolescents with emotional and behavioral difficulties, addresses 50 skills divided into six categories which included (a) beginning social skills, (b) advanced social skills, (c) skills for dealing with feelings, (d) alternatives to aggression, (e) skills for dealing with stress, and (f) planning skills. The

steps involved in implementing *Skillstreaming* are defining and modeling the skill, establishing the level of need for the skill, role playing, providing feedback, and completing skill homework. *Skillstreaming* maximizes the potential for skill mastery by incorporating role playing as a method of instruction. *Skillstreaming* potentially could be an effective technique for social skills instruction for middle school students with ASD because of the concrete steps outlined for each skill and the use of role playing the skills. The use of well-defined concrete steps and the opportunity to role play the skills is reported to benefit students with ASD who require repetitive practice in the settings where they are expected to demonstrate the specific social skills (Smith-Myles & Simpson, 2001).

Few studies, however, have been devoted to specifically addressing *Skillstreaming* as a social skills intervention for middle school students with ASD. Lopata, Thomeer, Volker, and Nida (2006) did investigate *Skillstreaming* as a social skill intervention for 21 children, ages six to 13, with Asperger's Syndrome (AS). In their pretest-posttest study, the researchers implemented only those skills that related directly to the criteria laid out in the DSM-IV for individuals with AD. Significant increases in social skills both within and outside of the program were noted for all participants. Indeed, the investigation by Lopata et al. provided one example for utilizing *Skillstreaming* as a social skills intervention. However, their research is part of a limited number of studies addressing not only *Skillstreaming* as an intervention for students with ASD but also social skills instruction at the middle school level for this population.

Video Modeling

A potential method for providing social skills instruction to students with ASD is video modeling. Video modeling incorporates the modeling strategies first introduced by Bandura in the 1970s (1977). Bandura demonstrated that modeling has a profound impact on the development of children and that children acquire skills through observing other people performing the skills (1977), Utilizing technology, such as video recording devices, to record desired behaviors to be viewed as part of instruction provides increasing opportunities for the student to view the same model repeatedly. Video modeling simplifies the modeling process in terms of ease of repetition (i.e. – pressing play for video is much faster than getting the same group together to replay the desired behavior. Video modeling involves a child watching a video of specific behaviors and then imitating the behavior in the video (Bellini & Akullian, 2007). Video modeling can be utilized across many settings and for individuals of varying disabilities.

The use of video modeling with students with ASD has increased in recent years, although most studies have focused mainly on elementary students (Charlop-Christy, Le, & Freeman, 2000; Delano, 2007). According to Delano (2007) only two of the research studies conducted using video modeling for students with ASD have focused on individuals with ASD over 12 years of age. For example, one study that included a participant over the age of 12 was completed by LeBlanc et al. (2003). The authors investigated using video modeling and reinforcement to teach perspective-taking skills, such as considering someone else's point of view, to the participants. The participants were three boys with diagnoses of ASD, ages 7 to 13. During this investigation, the

researchers used video models of adults completing a task correctly before asking one of the participants to complete the task. The participants were provided with reinforcement if they completed the task correctly. Video modeling, which capitalizes on the strengths of individuals with ASD as visual learners, was shown to be an effective teaching method for perspective-taking skills to the participants in the investigation.

Additionally, video modeling has proven to be an effective technique of instruction for individuals with ASD because it accounts for stimulus overselectivity and incorporates video as an instructional tool. These aspects of video are all highly reinforcing and preferred activities for many individuals with ASD (Bellini & Akullian, 2007; Sherer et al., 2001). Stimulus overselectivity is a term that describes the tendency to take in too much visual information without the ability to effectively filter out unnecessary information. Video modeling reduces stimulus overselectivity by minimizing the focus area, for example the TV screen, which the child is watching. The child's attention is drawn to the screen rather than focusing on other activities or objects in the learning setting (Sherer, et al., 2001). Furthermore, individuals with ASD can become preoccupied with reciting the same lines from a favorite TV show over and over (Bellini & Akullian, 2007). Because of these repetitive behaviors, video modeling as an intervention is one that has been found to employ an individual with ASD's tendencies to imitate behaviors for learning new skills (Bellini, 2008; Charlop-Christy, et al, 2000; Smith-Myles & Simpson, 2001).

Peer Mentoring

Students with ASD can learn new behaviors through video images and from natural role models such as peers in their classes that could serve as mentors. According to Loncola and Craig-Unkefer (2005), ". . . children with autism can learn skills simply by sitting next to and attending to a peer model" (p. 244). Peer mentoring involves one or more peers without disabilities providing academic and social supports to a student with disabilities (Carter, Cushing, Clark, & Kennedy, 2005). For example, peer mentoring activities might include working with a peer during classes on an assignment, participating in an integrated social skills group, and role playing social situations.

Morrison, Kamps, Garcia, and Parker (2001) investigated peer mentoring as a method for improving social skills for students with ASD. In their investigation, four middle school students with ASD were paired with three to four peer mentors from a group of 35 non-disabled students. During the intervention, the peer mentors provided monitoring, commenting and cues to emphasize sharing while playing board games with the participants in the study. This investigation, which lasted 88 days, indicated an increase in requesting behaviors and an increase in social initiations by the participants with ASD. Specifically, the four participants increased initiations to peers during the intervention. Two of the four participants demonstrated increases in social initiations in generalization settings (i.e. – lunch, recess).

Summary of Research

In summary, middle school often involves a student interacting with a number of different teachers and peer groups with varying social expectations. The "hidden curriculum", those unwritten social expectations that permeate the middle school setting, can present many challenges for students with ASD. Moreover, students with ASD in inclusive middle school settings, who exhibit difficulties with social skills, can benefit from social skills instruction to successfully navigate the maze that is middle school (Smith-Myles & Simpson, 2001). To address the social needs of middle school students with ASD, social skills curricula such as *Skillstreaming* can be introduced through innovative techniques such as video modeling and peer mentoring (Bellini, 2008; Fuchs & Fuchs, 2005).

Study Design

A multiple baseline design across subjects was used in conducting the present study (Kazdin, 1982; Kennedy, 2005; Slavin, 2007). This investigation included five researcher-made videos of five critical social skills as outlined in the *Skillstreaming* curriculum. The independent variables were the video models and the peer mentors. The dependent variable was the level of demonstration of each of the five critical social skills for inclusion: (a) greeting a peer / teacher, (b) participating in a conversation, (c) asking a question, (d) tracking the talker, and (e) following directions. The dependent variable was observed in general education inclusion settings.

Purpose of the Investigation

Given the behavioral expectations of students by teachers and peers in middle school inclusive classrooms and the characteristics inherent to students with ASD, the purpose of this study was to explore the impact of video modeling and peer mentoring on five critical social skills for inclusion. The impact of the video models and peer mentors was measured using the level of demonstration of five critical social skills by the primary participants (PPs). Specifically, the extent to which the combination of video modeling and peer mentoring of five critical social skills would increase the level of demonstration of these skills in the general education inclusion setting was investigated.

Definition of Terms

Autism Diagnostic Inventory – Revised (ADI-R)--A research-validated extended interview utilized to provide information about diagnoses of ASD as well as other related disorders (Le Couteur, Lord, & Rutter, 2003).

Autism Social Skills Profile (ASSP)--A 5-point Likert scale survey that provides information on the levels of social skills functioning in individuals with ASD. This survey can be completed by parents, teachers, and other individuals familiar with the individual with ASD (Bellini, 2008).

Autism Spectrum Disorders (ASD)--A diagnosis provided by a medical professional or other certified assessment personnel and a valid score on the Autism Diagnostic Inventory Revised (APA, 2004; Le Couteur, Lord, & Rutter, 2003).

Critical Social Skills (CSS)--Social skills that enable students to positively interact with peers and teachers (Smith-Myles & Simpson, 2001).

Inclusion--For this investigation, this term means a content area classroom in which students both with and without disabilities participate in the general education curriculum.

Parent--A legal adult charged with care of a participant.

Peer Mentor (PM)--A student in grade six, seven, or eight who participates in one-to-one and small group instruction activities with a student with disabilities

Primary Participant (PP)--One of three individuals with ASD whose social behavior is the dependent measure of the investigation.

Skillstreaming the Adolescent--A research-based social skills curriculum developed to facilitate the learning of social skills. The *Skillstreaming* curriculum includes 50 skills divided into six categories including: (a) beginning social skills, (b) advanced social skills, (c) skills for dealing with feelings, (d) skill alternatives to aggression, (e) skills for dealing with stress, and (f) planning skills (Goldstein & McGinnis, 1997).

Social Responsiveness Scale (SRS)--A research-validated 65-item Likert scale instrument used to evaluate the levels of social functioning of individuals with ASD (Constantino & Gruber, 2005).

Social Skills Probe--A five question Likert scale questionnaire developed and validated by the researcher and completed by the teachers, peer, mentors, and parents of the PPs to provide information on the social validity of the intervention.

Video Modeling--The use of videos to demonstrate appropriate social skill behaviors

Research Questions

1. To what extent did the combination of video modeling and peer mentoring of five critical social skills increase the level of demonstration of these skills in the general education setting?
2. What was the specific gain in social functioning as a result of an intervention utilizing both video models and peer mentoring of social skills for four middle school students with Autism Spectrum Disorders as measured by the Social Responsiveness Scale and Autism Social Skills Profile?

Null Hypothesis:

H_0*:* Video modeling and peer mentoring of critical social skills for inclusion does not impact the level of demonstration of five critical social skills for inclusion of middle school students with moderate Autism Spectrum Disorders.

Significance of the Study

Increasing numbers of children have been diagnosed with ASD (CDC, 2007). As children with the diagnosis of ASD enter the nation's schools, the question of placement arises. The Individuals with Disabilities Education Act (1990) mandated education in the least restrictive environment as the optimum placement for students with disabilities. Thus, students with ASD have found themselves in inclusive classrooms more often than

in previous years (US DOE, 2007). While research on inclusion in the general education settings for students with ASD has demonstrated positive results (Simpson, 2005), the impairments in communication, behavioral, and social abilities of individuals with ASD have required additional support for success (Smith-Myles & Simpson, 2001). Researchers have noted the benefits of social skills instruction for students with diagnoses of ASD, including increased peer interactions, greater acceptance by peers, and higher levels of engagement (Dymond & Orelove, 2001; Harrower & Dunlap, 2001). Furthermore, researchers also have indicated the effectiveness of both video modeling (Bellini & Akullian, 2007) and peer mentoring (Fuchs & Fuchs, 2005) for implementing social skills interventions.

The application of research to practice is critical (Greenwood & Abbott, 2001; Odom et al., 2003). The present study added to research-based practices for educators working with students with ASD at the middle school level as well as increased the literature focused on the combination of video modeling and peer mentoring as a social skills intervention. This investigation also provided a description of the use of both video modeling and peer mentoring for students with ASD at the middle school level. The outcomes could be applied by teachers, school counselors, social workers, and speech language therapists in working with all students at the middle school level in social skill or peer groups.

CHAPTER 2
REVIEW OF LITERATURE AND RELATED RESEARCH

Introduction

The purpose of this chapter is to provide a review of the literature on video modeling and peer mentoring on critical social skills for middle school students with Autism Spectrum Disorders (ASD) in inclusive settings. The chapter focuses first on the history of ASD followed by a description of the impairments to communication, behavioral, and social skills associated with ASD. Additionally, information will be highlighted with regards to the a) prevalence of ASD, b) evolution of inclusive practices in today's middle schools, c) behavioral expectations and curricula for middle school inclusive settings, d) use of video modeling, and e) application of peer mentoring strategies for students with ASD. The intent of this chapter is to provide justification for implementing social skills instruction facilitated by research-based curriculum, video models, and peer mentors.

Autism Spectrum Disorder (ASD)

History of Autism Spectrum Disorders

In the early 1800s, Itard documented his experiences with the Wild Boy of Aveyron (Humphrey & Humphrey, 1962). The "wild boy," who was named Victor, was found wandering near Saint Sernin sur Rance, France. He was captured several times but managed to escape his captors each time. However, in January of 1800, Victor emerged

from the forest on his own. The citizens of the village estimated that he was 12 years old. From his lack of speech, food preferences, and multiple scars on his body, it appeared that he had been in the wild for most of his life (Humphrey & Humphrey).

Itard, a young medical student, believed that two things separated humans from animals: empathy and language. He wanted to be the first person to fully civilize the wild child and attempted to teach Victor to speak and show human emotion. Though initially successful, Victor's development eventually slowed down to the point that Itard abandoned the experiment. The only words that Victor ever actually learned to speak were *lait* (milk) and *Oh Dieu* (oh God). The Wild Boy of Aveyron died in Paris in 1828 (Lane, 1975). In the years following Itard's work, several researchers explored the characteristics of individuals with ASD, including Bleuler (Kuhn, 2008) who originally coined the term schizophrenia. It was from Bleuler's description of schizophrenia that Kanner (1943) developed his definition of autism.

Later, in 1943, Dr. Leo Kanner, an Austrian-American psychiatrist and physician, published his first paper identifying children with autism. In his paper, he described children who excluded the outside world and withdrew from social interactions. Kanner (1943) was the first physician in the United States to be identified as a child psychiatrist. His first textbook on the subject was published in 1935 and was the first English-language textbook to focus on the psychiatric problems of children. The research of Asperger (1944) and Kanner formed the basis for the modern study of autism (Kanner).

Throughout the 20th century, researchers have attempted to further define autism and the spectrum that exists within such a diagnosis. In earlier definitions, autism was

believed to be a psychological disturbance caused by detached or uncaring mothers (Bettleheim, 1967). In the 1960s and 70s, Folstein and Rutter (1977) published the first study on autism that demonstrated a genetic basis. Rutter went on in the 1990s to publish the *Autism Diagnostic Interview* (ADI) with Lord and LeCouteur. The ADI provided a thorough assessment of individuals suspected of having autism or other autism spectrum disorders (Le Couteur, Lord, & Rutter, 2003).

The diagnostic criteria for Autism Spectrum Disorders were defined in the 1991 Diagnostic and Statistical Manual (DSM-IV TR) and again in the International Classification of Diseases published by the World Health Organization in 1993. The nature of the autism spectrum, with disabilities ranging from mild to moderate to severe in their individual manifestations, has posed much difficulty as far as the development of a standardized definition. With almost three centuries of study, ASD has continued to be largely a mystery in definition, cause, and manifestation (Sorrells, Reith, & Sindelar, 2004).

Definition of Autism Spectrum Disorders

In 2007, the Center for Disease Control and Prevention reported that 1 in 150 children in the United States carried a diagnosis of ASD. No single known cause has been identified as responsible for its onset, and no cure has been found. Three major disorders on the autism spectrum are listed in the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (2004), (DSM-IV TR) under an even broader category called Pervasive Developmental Disorders (PDD).

While some controversy exists, according to the DSM-IV TR (APA, 2004) defined the major disorders existing under the umbrella of Pervasive Developmental Disorder Not Other Specified (PDD NOS) as being Autistic disorder, Asperger's disorder, Rhett's Disorder, and Childhood Disintegrative Disorder. Most often these disorders have been referred to as ASD or Autism Spectrum Disorders. According to the DSM-IV TR (APA, 2004), ASD is a combination of impairments in three main areas: communication, behavior, and social interaction.

From individual to individual, however, autism defines itself differently. Autism can generally be identified by the age of three when differences in "normal" interactions between a child with ASD and his/her family become more evident. Children with ASD can be predictably unpredictable in their day-to-day behaviors and abilities. More than 60 years after ASD was first identified, it has remained one of the most puzzling of childhood disorders. In the late 20th century, however, investigators have begun to uncover some of the mysteries of ASD. Children with ASD may be severely impaired and caught in a world of obsessive and seemingly meaningless behavior, or they may be so intelligent and verbal that they appear quirky or odd. Kanner (1943) described a two-year-old boy with ASD in stating that "Donald [the child] walks as if he is in a shadow, lives in a world of his own where he cannot be reached" (p. 236).

Impairments in Communication

Impairments in communication for individuals with ASD are exhibited in one of four ways including: (a) a delay or total lack of spoken language; (b) the presence of

spoken language but difficulty in sustaining conversations with others; (c) a repetitive use of language and the use of idiosyncratic language; and (d) a lack of spontaneous, make-believe play (APA, 2004). For example, infants diagnosed with ASD may not meet developmental milestones such as cooing, babbling, or gesturing by 12 months of age. Furthermore, as individuals with ASD grow older, families might observe the child appearing to tune people out, being unable to explain what s/he wants, or demonstrating poor eye contact (National Institute of Child Health and Human Development, 2005). Volkmar and Tidmarsh (2003) described the impairments in communication in individuals with ASD as a "three-year-old child who does not speak and does not respond when parents call his or her name" (p. 518).

Impairments in Behavior

Individuals with ASD often exhibit an obsessive insistence on environmental sameness and atypical, often difficult to understand behaviors including self-stimulatory responses that begin at an early age and continue throughout their lives (APA, 2004). A child with ASD may spend hours lining up toy cars in a specific order or twirling objects while peering at them closely. Slight changes in routine such as a different teacher or a different meal served at lunch can easily upset an individual with ASD (National Institute of Mental Health [NIMH], 2004).

This insistence on sameness and routine was described by Kanner (1943) in regard to his work with the young boy named Donald. Most of his actions were repetitions carried out in exactly the same way in which they had been performed

originally. If he spun a block, he must always start with the same face uppermost. When he threaded buttons, he arranged them in a certain sequence that had no pattern but happened to be the order used by his father when he had first shown them to Donald.

Impairments in Social Interaction

For individuals with ASD, difficulties in social interactions may include impairment in nonverbal behaviors such as facial expression, eye gaze, and posture. Additionally, deficits in social functioning associated with ASD include failure to create and maintain developmentally appropriate relationships with peers (Volkmar & Tidmarsh, 2003). For example, a child with ASD may not understand the subtleties of the middle school "hidden curriculum" (Smith-Myles & Simpson, 2001). He may insist on directing a conversation with peers back to a favorite subject and not notice or understand the resulting eye-rolling or smirks of his peers. Kanner (1943) reported working with children with ASD who appeared happiest when left alone and indifferent to any family member.

Summary of Characteristics of Individuals with ASD

Autism Spectrum Disorders have been defined as neurodevelopmental disorders that manifest in individuals in three main areas including impairments in communication, behavior, and social interaction (APA, 1994). Symptoms of ASD generally appear by three years of age, although medical investigations have revealed earlier and earlier ages of diagnosis (NIMH, 2004). Additionally, characteristics of ASD continue throughout an

individual's lifetime. At the time of the present study, researchers were studying a more broadly defined spectrum of disorders than was once recognized. The increased research about and attention to individuals with ASD may be one reason why the number of individuals diagnosed has been increasing.

Prevalence of ASD throughout the Years

From the 1980s to the 1990s, the number of children diagnosed with ASD increased by almost 15%. In 2007, one in 150 children currently carried the diagnosis of ASD (Centers for Disease Control, 2007). For example, the numbers of students diagnosed with ASD, ages 6-21, almost doubled from 2000 to 2003, with the greatest increase in the 12-17 age range (US DOE, 2005). These statistics qualify autism as the sixth most commonly classified disability in the U.S., more prevalent than diagnoses of childhood cancer with 1.5 diagnoses per 10,000 children, and juvenile diabetes with 1 in 400 children diagnosed (CDC, 2007). Table 1 presents the prevalence statistics for students with ASD from 2000 to 2003.

Table 1
Students with ASD, Ages 6-21, in the United States 2000-2003

Year	Ages 6-11	Ages 12-17	Ages 14–21
2000	52,455	22,498	17,689
2001	64,094	28,867	21,968
2002	74,831	37,305	27,503
2003	85,955	46,999	33,807

Prevalence of Individuals with ASD and Education

Despite the prevalence of individuals diagnosed with ASD in American society, the disability was not recognized by the U.S. Department of Education (1990) as a handicapping condition until 1990 with the re-authorization of the Education for All Handicapped Children Act (EAHCA) (P.L. 94-142) that was renamed the Individuals with Disabilities Education Act (IDEA, 1990). As noted in Table 2, the numbers for students with ASD were not available until after 1991 when the IDEA was re-authorized to include this as a category of disability.

Table 2
Percentage of Children with Autism & All Children with Disabilities, Ages 3-21, Receiving Services under IDEA: 1976-1977 to 2005-2006

Year	All Disabilities	ASD
1976-1977	8.3	-
1980-1981	10.1	-
1990-1991	11.4	-
1994-1995	12.2	#
1995-1996	12.4	0.1
1996-1997	12.6	0.1
1997-1998	12.8	0.1
1998-1999	13.0	0.1
1999-2000	13.2	0.1
2000-2001	13.3	0.2
2001-2002	13.4	0.2
2002-2003	13.5	0.3
2003-2004	13.7	0.3
2004-2005	13.8	0.4
2005-2006	13.8	0.5

Note. Key: - = Not Available; # rounds to zero

While students with ASD have represented less than 1% of the population of students receiving special education services, there has been a steady increase in these

numbers over the past 10 years. For example, for 2006-2007, the US DOE reported 48,948,000 school-aged children in public schools. This number included 6,713,000 students with disabilities, one-third of whom was comprised of children newly diagnosed with ASD (US DOE, 2006). With such an increasing prevalence in diagnosis the current struggle beyond understanding why rates have increased has been where is the most effective placement for this population in the public school setting.

Inclusion

The Law and Inclusion

The most appropriate placement for students with disabilities, and especially students with ASD, has been a struggle since the initial passage of IDEA in 1975. Often times, schools would label students with one kind of disability when the student actually had another disability or none at all (Turnbull, Turnbull, Stowe, & Wilcox, 2000). Beginning in the late 1960s and early 1970s, advocates for students, including families, parent advocacy organizations and civil rights attorneys, began to sue state and local school districts claiming that exclusion and misclassification violated the students' rights to an equal education opportunity under the law. They argued that because Brown vs. Board of Education in 1954 held that schools may not segregate by race, schools also may not segregate or discriminate by ability and disability. Students are students, after all, regardless of their race or disability (Turnbull et al., 2000; Yell, 1998).

Eventually, the passion and determination of parents and families proved successful. In 1972, federal courts ordered the Commonwealth of Pennsylvania and the District of Columbia to: (a) provide a free appropriate public education to all students with disabilities, (b) educate students with disabilities in the same schools and basically the same programs as students without disabilities, and (c) put into place certain procedural safeguards so that students with disabilities could challenge schools that do not live up to the orders of the court (Mills v. Washington, DC, Board of Education, 1972; Pennsylvania Association for Retarded Citizens [PARC] v. Commonwealth of Pennsylvania, 1972).

By the early 1970s, several pivotal pieces of legislation appeared that marked a turning point of disability laws in the 21st century and at the same time a beginning movement was occurring to diagnose students with ASD (US DOE, 1998). Families of all students began advocating to Congress for federal laws and federal money that would guarantee students' rights to an education and help states pay for that education. Two laws were enacted in 1973 and 1975 that impacted all people with disabilities. These two pieces of legislation were the Vocational Rehabilitation Amendments of 1973 (P.L. 93-112) and the Education for All Handicapped Children Act (EAHCA) (P.L. 94-142). Lawmakers established people with disabilities as a class to be protected from discrimination by federal laws and made it illegal to exclude them from publicly supported programs and activities. P.L. 93-112 contained section 504 which prohibited discrimination on the basis of disability by any organization receiving federal funds. Public Law 94-142 provided for a free, appropriate, public education in the least

restrictive environment. The Education Amendments of 1974 (P.L.93-380) also was passed. This law established the requirement for identifying and serving all children with disabilities from birth to age 21. A portion of this law, known as the Equal Education Opportunity Act, anticipated many of the major provisions which would later appear in P.L. 94-142, including guarantees of due process and education in the least restrictive environment (LRE). These civil rights laws for people with disabilities gained much of their momentum from families. In enacting the federal laws in 1975, Congress intended to open up the schools to all students with disabilities. More specifically, the amendments to the IDEA broadened the defining characteristics of a developmental delay to include children ages 3-9.

The passage of EAHCA mandated that all students with disabilities be provided services in the LRE. The term "least restrictive" was interpreted as being the amount of time students were educated in classes with their peers without disabilities. Students with mild disabilities most often remained in the general classroom and attended a resource room for one to two periods a day (Turnbull, Turnbull, Stowe, & Wilcox, 2000) but emerging was the debate as to where best serve students with a spectrum of needs such as students with ASD. For example, in the case of *Board of Education of the Hendrick Hudson Central School District v. Rowley* (1982), the question of what a free and appropriate education (FAPE) meant was called into question. The resulting decision, thereafter called the "Rowley Standard" was that a two-part evaluation would be used to evaluate whether schools have met the requirements for FAPE. The first part of the evaluation would determine if the school had complied with the procedures of the

EAHCA and the second part would determine if the individualized education program (IEP) was written to provide the child with educational benefits. Since students with more severe disabilities often remained in resource rooms or special education classrooms, this double-branched method of general education placement continued without serious challenges until 1986 with the emergence of the Regular Education Initiative (REI). The REI promoted the position that students with disabilities be educated in general education classes without pullout special education services. Assistant Secretary Will, Office of Special Education and Rehabilitation Services, was responsible for the development of REI and maintained that negative consequences occur when students with disabilities are educated separately from their peers without disabilities. During the late 1980s, the REI position became part of the inclusion movement (Wang, 1987; Will, 1986). This movement expanded to address the issues of the continuum of service for students with disabilities and has increased in force with further changes in laws and a greater prevalence of disabilities in areas such as ASD.

During the same year the REI was developing, the Education of the Handicapped Act Amendment (P.L. 99-457) was passed. This amendment required states to extend free and appropriate education to all children with disabilities ages three to five. The law also established early intervention programs for infants and toddlers with disabilities ages birth to two years. By 1990, Congress had passed the Americans with Disabilities Act (ADA) (P.L. 101-336). The ADA prohibited discrimination against people with disabilities in the private sector and protected equal opportunity to employment and public services, accommodations, transportation and telecommunications. Public

attention continued with respect to the rights of the disabled. In 1990, the Education for All Handicapped Children Act (EAHCA) (P.L. 94-142) was replaced and renamed Individuals with Disabilities Education Act (IDEA) (P.L. 101-476). The IDEA expanded the rights of students with disabilities in the following ways: (a) established "people first" language for referring to people with disabilities; (b) extended special education services to include social work and rehabilitation services; (c) extended provisions for due process and confidentiality for students and parents; (d) added two new categories of disabilities: autism and traumatic brain injury; (e) required states to provide bilingual education programs for students with disabilities; and (f) required states to educate students with disabilities for transition to employment, and to provide transition services. By the mid 1990s, school districts were continuing the arguments surrounding continuum of services, least restrictive environment and other mandates set forth by the federal government. However, the change in the laws required that general education classrooms open their doors to include students with all levels of disabilities including students with autism as appropriate.

In 1994, the National Council on Disability submitted a report to the White House entitled *Inclusionary Education for Students with Disabilities: Keeping the Promise.* The report described the progress in achieving the goal of education in the least restrictive environment for students with disabilities in the nation's schools, the continued barriers to meeting both the letter and the spirit of the law, and the recommendation for increasing opportunities for students with disabilities to be educated alongside their non-disabled peers in regular neighborhood schools. In a preface to President Bush, committee

members stated, “We believe that this [report] will serve to further your goal. . . to shift disability policy in America away from exclusion, towards inclusion; away from dependence, towards independence; and away from paternalism, and towards empowerment” (p. 2).

By 1997, IDEA was reauthorized and expanded to protect the rights of children with disabilities paralleling a beginning surge in the diagnosis of children with ASD (Smeeth, et al., 2004). The IDEA ’97 was built on the foundation of the original Act and included the following mandates: It (a) required that all students with disabilities continue to receive services, even if they were expelled from school, (b) allowed states to extend their use of the developmental delay category for students through age nine, (c) required schools to assume greater responsibility for ensuring that students with disabilities have access to the general education curriculum, (d) allowed special education staff to assist general education students when needed, (e) required a general education teacher to be a member of the IEP team, and (f) required students with disabilities to take part in state-wide and district-wide assessments. Changes continued to take place in America’s schools as illustrated in Figure 1, created by the researcher to demonstrate the changes in educational settings for students with disabilities throughout the years as reported in the US DOE Annual Report to Congress (2007).

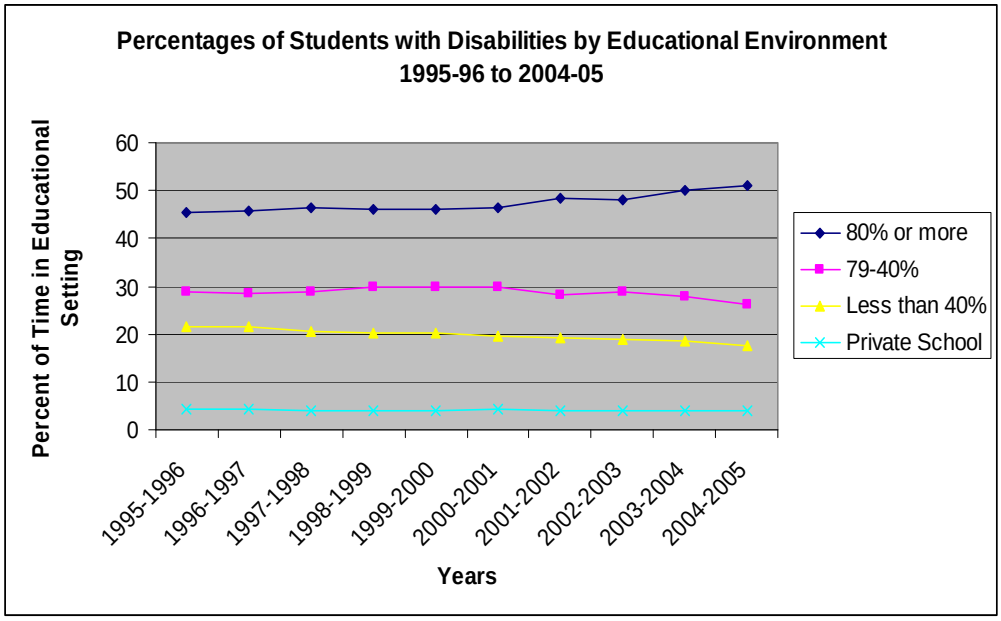


Figure 1. Percentages of students with disabilities by educational environment (adapted from US DOE, 2007).

Between the years 1995 and 2005, the numbers of students with disabilities receiving instruction in the general education setting for more than 80% of their school day increased from 45.3% to 52.1%. Similarly, the percentage of time spent by students with ASD in inclusive settings also increased from 26.8% to 31.4% (US DOE, 2007). Furthermore, the time spent by students with disabilities, including ASD, in classrooms other than the general education setting decreased, further emphasizing the push toward more inclusive education. As stated by Simpson, deBoer-Ott, and Smith-Myles (2003), "The reality is that children and youth with ASD, along with other learners with special needs, are increasingly being served in general education programs" (p. 117). In summary, as the laws changed to increase the time spent in a general education setting for

all students with disabilities, more and more emphasis was placed on including students with ASD as well.

Definitions of Inclusion

While the word "inclusion" was not used in the text of the IDEA, the law reflected a set of beliefs and aspirations that the least restrictive environment was the general education classroom for all children regardless of ability (Turnbull, Turnbull, Stowe, & Wilcox, 2000). Inclusion has been difficult to define because programs of inclusion have varied from school to school, from classroom to classroom, and from disability to disability. In some schools, inclusion means the mere physical presence or social inclusion of students with disabilities in the regular classroom. In other schools, it means active modification of content, instruction and assessment practices so that all students can successfully engage in core academic experiences and learning (Villa & Thousand, 2003). Furthermore, the Council for Exceptional Children (CEC) released the *CEC Policy on Inclusive Schools and Community Settings* in 1993 which defined inclusion as the education of children and youth with disabilities in the general education classroom in neighborhood schools and communities whenever possible. More often than not, however, students with ASDs are placed in self-contained classrooms at center schools, away from their neighborhood schools and community supports. Mastropieri, Scruggs, and Graetz (2005) defined successful inclusion in terms of the supports needed to meet the needs of a wide array of learners. Support from administration and special education personnel, an accepting and positive classroom atmosphere, appropriate

curriculum and teaching skills, the use of peer mentors, and teaching skills for specific disabilities have been components of programs that exemplify the philosophy of inclusion. Moreover, Dieker (2007) defined inclusion in terms of a shared vision where entire communities work to support the inclusive environment. Hence, inclusion has emerged as a belief that may truly require a shift in thinking to be implemented to benefit all students.

Benefits of Inclusion for Students with ASD

The educational literature lacks documentation of research for middle school inclusion of students with ASD (Coffey & Obringer, 2004; Harrower & Dunlap, 2001). However, several studies have focused on the benefits of inclusion for elementary children with ASD, including benefits of social functioning, communication, and behavior. For example, Harrower and Dunlap (2001) reported that students with ASD in inclusive settings displayed higher levels of social engagement and had larger peer networks than did students with ASD in segregated settings. Furthermore, benefits of inclusion also have been documented in the area of behavior and social skills. Both Fisher and Meyer (2002) and Downing and Eichinger (2003) completed studies in which decreases in disruptive behaviors and increased frequency of positive social interactions were reported. Table 3 presents an overview of benefits of inclusion for students with ASD according to communication, behavioral, social, and academic areas.

Table 3
Benefits of Inclusion for Students with ASD

Area	Benefits	Citations
Communication	Increased reciprocal conversations	Downing & Eichinger, 2003
	Increased eye contact	Downing & Eichinger, 2003
	Increased appropriate requests for breaks, attention	Fisher & Meyer, 2002
	Increased engagement in language and joint attention behaviors	Harrower & Dunlap, 2001
Behavior	Increased appropriate play skills—turn taking, reciprocal play	Downing & Eichinger, 2003
	Decreased disruptive behaviors	Symon, 2005; Dymond & Orelove, 2001
	Increased rates of on-task behavior	Blacher & Kaladjian, 2005
	Increased frequency of positive social interactions	Blacher & Kaladjian, 2005
	Behavior modeling of non-disabled peers	Harrower & Dunlap, 2001
Social Skills	Higher levels of engagement and interaction	Harrower & Dunlap, 2001
	Greater acceptance by peers	Freeman & Alkin, 2000
	Increased duration of peer interactions	Freeman & Alkin, 2000

The Nature of Middle School

The world of students in middle school in general has been shaped by the multifaceted changes of early adolescence. Physical changes, social upheaval, and heightened academic expectations make for a complex passage through the middle school years (Bunting, 2004; Phelps, 2003). No clear beginning or end has been evident in this journey from childhood to adolescence as students, drawing from their elementary school experiences, struggle to forge new paths. Accompanied by the many changes involved in early adolescence have been the varying, and sometimes confusing, expectations of both

teachers and peers in middle school environments. These changes often are exacerbated for students with ASD.

One core issue for students with ASD is the "hidden curriculum". This term was coined by Jackson (1968) and referred to the rules, routines, and regulations that structure classroom life. The "hidden curriculum" includes skills, actions, ways of speaking, and modes of dress, that most people know (Smith-Myles & Simpson, 2001). For example, in order to successfully navigate their way through middle school, students must know how to "talk the talk" that is often incomprehensible for students with ASD. Snyder (1971) described the lessons learned from violating the "hidden curriculum" as ghosts haunting classrooms, invisible yet present all the same.

Hemmings (2000) described the "hidden curriculum" as "implicit social lessons which perpetuate social inequalities" (p. 1). In a qualitative study on urban high school seniors, Hemmings investigated critical social issues grouped by economics, politics, kinship, and community factors and how these factors were shaped by curriculum. In this multi-site qualitative study, Hemmings selected a group of eight high school seniors that was demographically representative of their high school's population. Four students were chosen from two separate high schools located in a large Midwestern city. The researcher attended classes with each participant for two weeks, including going to lunch with the participant and hanging out before and after school. Additionally, Hemmings conducted semi-structured interviews with each participant, and arranged focus group conversations of the friends of each participant. Most lessons of the "hidden curriculum" occurred during the times when students were transitioning from class to class or at the beginning

and end of the days. Hemmings observed social cliques divided along racial, ethnic, and gender lines. Furthermore, the researcher noted illicit practices of acquisition such as selling drugs and rituals of violence to secure and sustain social dominance. While the illicit activities described above are not typical parts of the "hidden curriculum", they are nonetheless examples of the "hidden curriculum" for one setting. Because of the difference from setting to setting, no rulebook has been printed for mastering the "hidden curriculum". To facilitate some mastery of the "hidden curriculum", researchers have supported providing social skill instruction with its roots born in Social Learning theory to middle school students with ASD (Attwood, 2000; Smith-Myles & Simpson, 2001; Weiss & Harris, 2001).

Teacher Expectations in Inclusive Settings

In the middle school setting, inclusion has involved not only a number of different teachers but also different peer groups. Middle school students may travel to as many as seven different classrooms each day (Phelps, 2003). For students with ASD, with impairments in social communication skills, middle school inclusion requiring them to learn and master increased social behaviors can be a daunting experience.

To learn more, Lane, Wehby, and Cooley (2006) surveyed 717 elementary, middle, and high school teachers in Tennessee as to what skills were critical for success in inclusive environments. The participants who completed the survey included both general and special educators who represented both socioeconomically and culturally diverse populations. Participants were asked to complete a modified version of the

Teacher Expectations for School Success questionnaire authored by Lane, Givner, and Pierson (2004). Forty-three schools in the district were invited to participate in this investigation. The average response rate for participating teachers was 78.27% (SD=19.09) resulting in a final total of 14 schools participating in the study. A total of 717 teachers at the elementary (n=210), middle (n=259), and high school (n=248) levels from a large culturally and socioeconomically diverse district in a Midwestern state participated in the survey. Of the 717 teachers, 141 were male and 509 were female. Just over 69% of the teachers were general educators, with 14.26% of the teachers being special educators and 16.41% of the teachers assuming other roles in the district. More than half of the teachers (63.45%) were experienced teachers with five or more years of experience.

The Teacher Expectations for School Success questionnaire (Lane, Wehby, & Cooley, 2006) is a two-part instrument including a demographic section and a social skills section. Participants in the study were instructed to rate the importance of each skill on a three-point Likert scale, according to how important the skill was to success in the classroom. The 10 critical skills rated as most important for success in inclusive classrooms by all participants included the following: (a) controlling one's temper, (b) responding appropriately to peer pressure, (c) using free time appropriately, (d) following and complying with directions, (e) responding appropriately to physical aggression, (f) ignoring peer distractions, (g) attending to instruction, (h) transitioning easily, and (i) getting along with a lot of different people. The 10 skills noted by the teachers in the survey required social savvy often lacking in individuals diagnosed with ASD. Because

student-teacher relationships have been predictably related to student behaviors (Robertson, Chamberlain, & Kassari, 2003), students with ASD in the middle school environment must demonstrate that same kind of social savvy known as the mastering the "hidden curriculum".

Social Learning Theory

Social learning theory is the study of how people process social information, especially encoding, storage, retrieval, and application in social situations. Deficits in social functioning are one of the defining characteristics of individuals with ASD which makes the application of social learning theory important in the development of successful social interventions for these individuals. The focus of social learning theory on information processing has many similarities to cognitive psychology which became more prominent in the late 1960s and early 1970s. One facet of social learning theory is observational learning which has been associated with the work of Bandura (1977).

Bandura (1977) described modeling or observational learning as learning that occurs as a function of observing, retaining and replicating desired behaviors observed in others. Bandura described modeling as having four necessary components: attention, retention, reproduction, and motivation. Attention refers to the necessity of paying attention to the task or information as it is being presented. According to Bandura, if an individual presented with a task is not paying attention because of illness or other activities taking place, there is more likelihood that the individual will not learn as much. Retention includes remembering what one paid attention to and includes using imagery

and language to store the learned information. Reproduction involves imitation or taking what has been learned and using it to create/modify one's behavior. The final component necessary for successful modeling is the presence of motivation. Individuals need a reason for learning. If one is not motivated, the learning may not progress as expected. For students with ASD, motivation is paramount as students with ASD may not attend to information or content in which they are not interested (APA, 2004; Bellini, 2008).

Bandura's (1977) work focused on individuals with an intense, overwhelming fear of snakes. In his research, Bandura presented a client with a scenario in which an actor modeled approaching a cage containing a snake. Other actors demonstrated self-calming techniques, such as deep-breathing and self-talk, as the primary actor opened the cage, removed the snake, and sat in a chair with the snake draped around his neck. The client after watching the scene through a window looking into a laboratory, attempted to repeat what he had seen. During the process of the therapy, the client encountered the four components of Bandura's observational learning theory.

By looking through the window at the lab setting, Bandura (1977) was maximizing the client's ability to attend to the modeled behavior. There were no other events to distract the client. While it was difficult to explain if or how the client retained the information, the ability to recreate the steps taken by the actor indicated that the client had retained the information. In recreating the scene modeled by the actor, the client demonstrated reproduction or imitation. The motivation for the client to participate in this form of therapy was to overcome his fear of snakes. Bandura's clients participated in modeling therapy because they were motivated to overcome their fear of snakes. For

students with ASD, the motivation to learn social skills is to be more socially accepted by their typical peers and for success in inclusion settings (Smith-Myles & Simpson, 2001), To facilitate social acceptance in inclusive settings, social skills instruction implemented with components of social learning theory (i.e. modeling, role-playing, and reproduction) is one method that has documented success (Bandura, 1977; Bellini, 2008; Smith-Myles & Simpson, 2001).

Social Skills Instruction

When children with ASD begin the journey through adolescence, they have been described as becoming more socially sensitive (NIMH, 2004). This journey can be a time when adolescents with ASD become painfully aware that they are different from their peers; and that they have not experienced other adolescent experiences such as dating, getting an after school job, or many other assumed normal social activities. Opportunities to develop social skills that support the development of a community network of friends are important for adolescents with ASD. Mathur and Rutherford (1996) defined social skills as patterns of behavior that are socially acceptable and allow students to receive social reinforcement and avoid awkward social situations. Furthermore, the researchers proposed that the purpose of social skills instruction should be to promote positive social functioning that can be demonstrated in varied social situations.

Researchers have validated the effectiveness of social skills training for students with emotional and behavioral disabilities (Quinn, Kavale, Mathur, Rutherford, & Forness, 1999; Rutherford, Mathur, & Quinn, 1998). In fact, Rutherford et al. described

five steps necessary for social skills instruction. In their investigation including 14 female students, from 12 to 17 years of age and who were incarcerated in a residential facility for various offenses, Rutherford, et al., provided direct instruction in targeted social skills. The five steps included: (a) selecting the student, (b) determining what social skills are desired, (c) determining the inappropriate skills displayed by the student, (d) determining if the student will not or cannot demonstrate the skills, and (e) establishing a group or groups to teach positive social skills. The purpose of this single-subject design study was to evaluate social communication skills as a result of direct instruction of cooperative learning participation. The results of the investigation indicated that the direct instruction of the social skills did positively impact the cooperative learning activities. Matson, Matson, and Rivet (2007) published an overview of 79 social skills studies that involved individuals with ASD, five of which included students over the age of 12. Matson et al. reported a drastic increase in the number of social skills treatments over time. This information is presented in Figure 2, which was created by the researcher with information from Matson, Matson, and Rivet (2007).

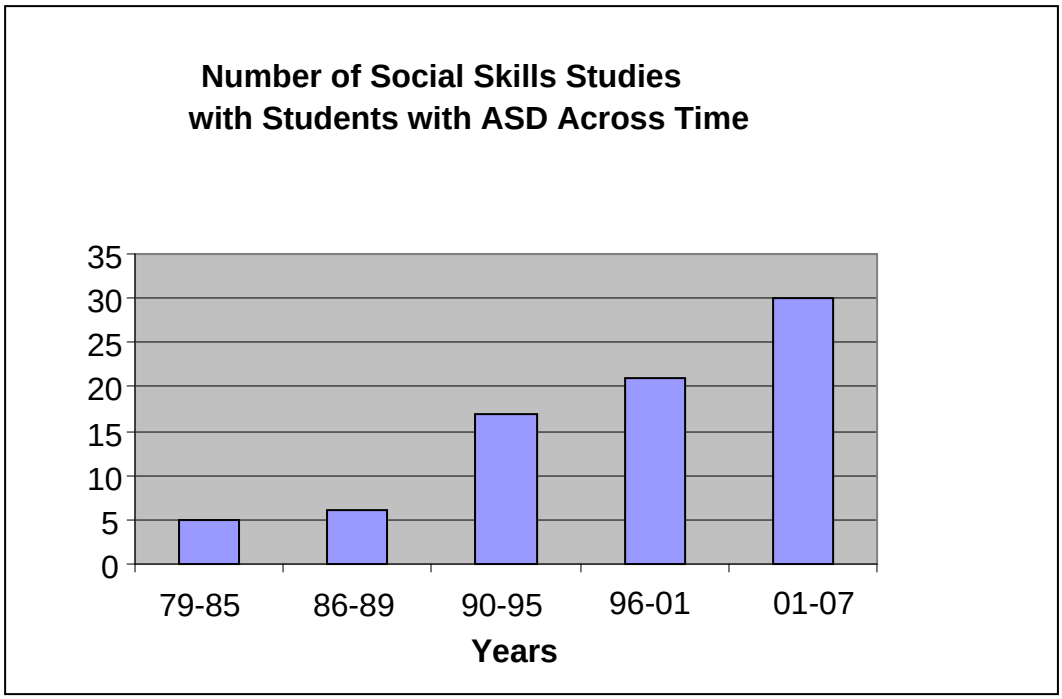


Figure 2 Number of Social skills Studies with Students with ASD Across Time. (Adapted from Matson, Matson, & Rivet, 2007)

Skillstreaming

Skillstreaming the Adolescent (Goldstein & McGinnis, 1997) is an example of a structured social skills program for students with varying disabilities that is based upon social learning theory. *Skillstreaming* was developed in 1973 as one of the first social skills training approaches. Johns, Crowley, and Guetzloe (2005) recommended *Skillstreaming* as an "excellent, structured learning approach" (p. 7). Moreover, Ryan, Katsiyannis, Peterson and Chmelar (2007) included *Skillstreaming* in their review of the IDEA and discipline practices for students with disabilities. In the 1970s, Goldstein and McGinnis (1997) first targeted low-income families in their interventions, based upon the research that socialization practices between socioeconomic groups was vastly different.

The intervention designed by the researchers included modeling, role-playing, performance feedback, and generalization training. Since its development, the *Skillstreaming* curriculum has been utilized with programs for young children, elderly adults, industrial managers, families in crisis, and police officers.

A total of 50 social skills for adolescents are described in the *Skillstreaming* curriculum and are accompanied by a series of sequential steps for completing each skill as well as suggested role plays. The social skills are divided into six groups that include beginning social skills, advanced social skills, skills for dealing with feelings, skills for alternatives to aggression, skills for dealing with stress, and planning skills. The recommended implementation of *Skillstreaming* consists of four core training procedures including modeling, role playing, performance feedback, and generalization training.

Early studies utilizing the *Skillstreaming* curriculum focused on students labeled with mental retardation. However, later studies focused on students with varying disabilities. For example, in 1995, Ciechalski and Schmidt conducted a study of 49 fourth-grade students enrolled in two different social studies classes. One class (n=25) was given instruction in social skills using the *Skillstreaming* curriculum along with the regular social studies curriculum. The other class (n=24) was provided only the regular social studies curriculum. Ciechalski and Schmidt concluded that the use of the *Skillstreaming* curriculum positively affected social interactions and involvement with peers and that the role playing part of *Skillstreaming* was vital to the enhancement of the skills learned.

Lopata, Thomeer, Volker, and Nida (2006) also conducted an investigation that incorporated the *Skillstreaming* curriculum. In their pre-test/post-test study, Lopata et al. investigated the use of *Skillstreaming* with 21male children with Asperger's Syndrome, ages 6-13. Parents and teachers completed three scales of the Behavior Assessment System for Children (BASC) including the social skills, adaptability, and atypicality scales. During the intervention, the participants took part in four 70-minute social skills instruction/therapeutic activities sessions daily over a five-day period. The *Skillstreaming* curriculum was utilized during the first 20 minutes of each session. During the therapeutic activities, the participants in the study took part in cooperative, face recognition, and interest expansion activities. The results of this investigation indicated that structured social skills programs, such as *Skillstreaming*, could positively affect the social skills of adolescents with ASD. The results of this investigation supported previous findings regarding social skills approaches (Attwood, 2000; Smith-Myles & Simpson, 2001).

Additionally, *Skillstreaming* has been used with students with emotional and behavioral disabilities (EBD). For example, Wilhite, Braaten, Frey, and Wilder (2007) incorporated *Skillstreaming* into their Behavioral Objective Sequence (BOS). The BOS is an assessment instrument that incorporates a scope and sequence for 233 skills essential to school success. The skills are organized according to long-term goals and objectives and include a hierarchy of skills in three developmental levels. Beginning skills (Level 3) are typically those demonstrated by children in preschool and kindergarten. Elementary skills are identified as Level 2 skills with Level 1 skills being those typically mastered in

adolescent and early adult years. Most importantly, a number of the skills delineated in the *Skillstreaming* curriculum have been incorporated into the BOS. The BOS, a 233-item inventory divided into six subscales, has been documented by research as reliably and accurately identifying 85% of first through fourth graders at high risk for referral for special education services, including EBD (Albrecht, 2003).

Video Modeling

Video modeling capitalizes on the four components of modeling described by Bandura (1977) with the added benefit of watching the models perform the same behavior in the same way more than once. Video modeling involves demonstrating desired behaviors (modeling) and role playing (reproduction) through video images (attention and motivation). For students with ASD, videos are a favored activity which increases the likelihood that they will attend to the models effectively. Generally, an individual is shown a video, or anchor, that demonstrates the desired behavior and then is asked to imitate the behavior. The video anchor focuses on an event or problem situation; for instance, a social interaction. The video provides background information about the target event or problem situation (Williams Glaser, Rieth, Kinzer, Colburn, & Peter, 1999). For example, a video model of how to greet a peer or teacher could serve as an "anchor" to provide a visual cue that facilitates learning the skill.

Additionally, video-based anchors have provided teachers with a tool to level the academic playing field in inclusive settings. According to Rieth et al. (2003), students with poor reading skills were not at a disadvantage when video-anchoring was used as the

learning is presented visually rather than in text form. In their investigation of sixty-two ninth grade students participating in two inclusive ninth grade language arts classes, the researchers focused on the effect of video anchored instruction on the length and level of questions asked by 9th grade language arts students. The novel *To Kill a Mockingbird* was chosen as it was present on the required readings list for the ninth grade. The students watched the videodisc of the novel rather than reading the novel; however, focus was maintained on vocabulary, characterization, and theme development. To establish a baseline, the researchers compiled data on the length and level of questions by both the teacher and the students. Data were also collected on the length and level of responses by the teacher and the students. The intervention consisted of five phases including: (a) setting the stage, (b) watching the anchor/retelling, (c) segmenting, (d) characterization, and (e) student research and presentation.

The mean number of short questions asked by both the students and the teacher decreased as a result of this intervention. Additionally, the mean length of the long questions (more than six words) increased for both groups. Furthermore, the number of high-level questions asked by the students increased from .20 to 2.14. The researchers also collected qualitative data on the views of the students and teacher about using the video anchor in place of the book. One student responded as follows:

> I was amazed. Even the kids who were like me- the very technophobic- got in there and did it. Even if it was only word processing, they did it. Kids were teaching each other. Everybody got a chance to develop some piece of their small-group research presentation. (p. 180)

Additional researchers (Albrecht, 2003; Shyu, 2000) reported the benefits of using video anchors as well. Shyu (2000) investigated the use of video anchors on both

attitudes towards mathematics instruction and problem-solving skills with Taiwanese elementary-age students. A total of 74 fifth graders, including 38 boys and 36 girls, participated in the investigation. In this pretest–posttest design, the students watched a videodisc created to motivate the students to think about problem solving in mathematics. Participants were asked to complete the Attitudes toward Mathematics Questionnaire before viewing the video and then again afterwards. Results of this investigation included a significant effect on students' attitudes toward mathematics instruction. In fact, analysis of the students' posttest questionnaires revealed that the students felt more positive about, more interested in, and less anxious toward mathematics instruction as a result of the video-anchor. Documented research on video models with various groups supports the use of video modeling as a potential method of social skill instruction. Video models offer a repetitive, predictable format through which students with ASD can learn new social skills. Video modeling capitalizes on all of the four components of modeling emphasized by Bandura (1977) including attention, retention, reproduction, and motivation.

Individuals with ASD and Video Modeling

Video modeling has been used to capitalize on the strengths of individuals with ASD as visual learners by maximizing a child's attention by reducing stimulus overselectivity (Charlop-Christy & Daneshvar, 2003). In capitalizing on the social needs of the individual, video modeling involves using techniques grounded in social learning theory. Stimulus overselectivity is the tendency to take in too much visual information

without the ability to effectively filter out unnecessary information. By minimizing the focus area, i.e., the TV screen that the child is watching, the ability to attend to what is being shown increases. The child's attention is drawn to the screen rather than focusing on other activities or objects in the environment.

Children with ASD can become preoccupied with reciting the same lines from a favorite TV show over and over (Bellini & Akullian, 2007). Video modeling can increase retention of information for individuals with ASD because of the ability to watch the video model over and over again. Additionally, video modeling is an effective technique for individuals with ASD because incorporating video as an instructional tool, practitioners are utilizing a highly reinforcing and preferred activity, watching TV, for many individuals with ASD. As one example, Sherer et al. (2001) investigated the enhancement of conversation skills in five boys with ASD, ages four to eleven, using video technology. Four out of the five participants were diagnosed with autism, with the remaining participant carrying a diagnosis of PDD-NOS. All participants demonstrated expressive language skills. The investigation took place in the homes of the five students. Using a multiple baseline design, the researchers first created videos of eight conversation questions using peer mentors. The participants in the study were then guided through creating their own video model of each of the eight conversation questions. After both videos were filmed, parents of the participants were given a schedule to show the tapes to their children. The schedule alternated days of viewing the model and the self-model. All sessions were videotaped and then coded by the researchers in terms of percentage of time correctly engaged in conversation. Overall,

each participant in the investigation responded positively to the video treatment. The results of this investigation also supported previous findings of researchers (O'Connor & Hermelin, 1990; Pierce & Schreibman, 1994) that reported the strength of visual treatment approaches such as video modeling.

Bandura (1977) described imitation in terms of the reproduction of skills and included it as one of the four necessary components for modeling. Video modeling capitalizes on the potency of observational learning (Delano, 2007) and incorporates an individual with ASD's ability to imitate behaviors (Ayres & Langone, 2005; Charlop-Christy & Daneshvar, 2003). Grandin (1995), an adult author with ASD, noted the differences between being told what a behavior is and actually seeing the behavior. If her Mother told her to be nice, Grandin was not sure what that looked like. If her Mother told her that being nice was giving someone flowers or giving someone a compliment, she could imitate those behaviors with increased ease. Grandin described her visual discrimination abilities as follows:

> I think in pictures. Words are like a second language to me. I translate both spoken and written words into full-color movies, complete with sound, which run like a VCR tape in my head. When somebody speaks to me, his words are instantly translated into pictures. (p. 19)

According to Bandura (1977), motivation was a component necessary for modeling to be successful. For middle school students with ASD in inclusive settings, the motivation for modeling appropriate behaviors has been based on the need to master the "hidden curriculum" and be seen as socially acceptable by their peers and teachers. Shore, a nationally recognized speaker with Asperger's Syndrome, noted having many friends who were from other countries and cultures in his younger years. "Because of our

backgrounds, all of us have unique differences, and we are not as aware of the subtle nuances in the culture that others may notice" (Brownell & Walther-Thomas, 2001; p. 297).

Benefits to Students with ASD in Studies Using Video Modeling

Based on the potential benefits of video modeling for students with ASD, research in this area has garnered increased interest in recent years. While the use of video modeling for students with ASD has increased, most studies have been focused on elementary students (Charlop-Christy, Le, & Freeman, 2000). Because of the lack of current research in the area of middle school aged students and video modeling, this investigation will add to the limited research base for best practices for students with ASD in the area of social skills. Additionally, specific benefits to students at the middle school level with ASD will need to be extrapolated from the research on students at the elementary level.

In a study by Nikopoulos and Keenan (2004), three children, ages seven to nine, with diagnoses of ASD were shown videos in self-contained settings of peer mentors initiating play with adults. The three children were evaluated with the Childhood Autism Rating Scale (CARS) and scored in the mild to moderate autistic range. The school was located in Surrey, England. The purpose of this multiple baseline across subjects investigation was to examine the effects of video modeling on social initiation and reciprocal play. The participants in the study were shown a video of a child entering a room where an adult was sitting. In front of the adult was a table with four toys on it. The

child in the video approached the adult, took his hand, said “Let’s Play” and then played with the toy with the adult. The children with ASD were then observed in inclusive settings.

The researchers in this study defined social initiation in terms of the child approaching the experimenter, touching his hand, and verbalizing “Let’s Play”. Reciprocal play was defined in this study to reflect the child playing with the experimenter and the toy. Data were collected on the latency to social initiation and the duration of reciprocal play. All participants in the study demonstrated enhanced social initiations and reciprocal play skills after the intervention. In addition, the skills demonstrated by the participants in the study were maintained at one- and three-month follow-up observations.

Maintenance of learned skills is another benefit of using video modeling as a social skills intervention and a critical need for students with ASD. For example, in the study by Maione and Mirenda (2006), a five-year-old boy named Ryan participated in a multiple baseline design across three play activities, including playing with a ball on a trampoline, a tambourine, and a game called Hungry Frogs in the child’s home environment that incorporated video modeling and feedback. For each of the play activities, Ryan demonstrated maintenance of the skills acquired during the intervention. Studies such as the one involving Ryan have become more common due to developments in and access to assistive technology (AT).

Video Modeling as Assistive Technology

As technological advances have continued, the availability of high-quality, low-cost video equipment has allowed more teachers to utilize video modeling as a method for social skills instruction (Bellini & Akullian, 2007; Maione & Mirenda, 2006; Odom et al., 2003). This availability has been supported in the law in the form of the Technology Related Assistance for Individuals with Disabilities Act in 1988 (Public Law 100-407, 102 Stat. 1044, 29U.S.C.). This law, known as the "Tech Act," first defined assistive technology devices and services as tools to assist an individual with a disability directly. The Tech Act also provided definitions of AT devices and services. The reauthorization of IDEA 97 slightly modified the definitions to make them applicable to children with disabilities in schools as defined in Section 300.5 of IDEA. Section 300.6 of IDEA defined AT services to include: (a) assessment of needs, (b) acquisition and maintenance of devices, (c) coordination of other services related to AT, (d) instruction of students and their families to use AT devices, and (e) preparing professionals who will deliver services to that child to improve functional capabilities (Blackhurst & Edyburn, 2000). While video modeling has represented a promising use of assistive technology, it may be necessary to combine video modeling with additional interventions to provide maximum benefits to students with ASD (Delano, 2007).

Peer Mentoring

Peer mediated interventions have had an extensive and rich research base developed over a period of 25 years beginning in 1980 (Fuchs & Fuchs, 2005). The

research has been focused on two main areas--peer-tutoring and cooperative learning strategies. Regarding peer mediated strategies, Maheady, Harper, and Mallette (2001) reported that, "In a relatively short time period, a variety of powerful instructional techniques have produced substantial improvements in the academic, behavioral, and interpersonal performance of students with mild disabilities" (p. 10). Peer mentoring was defined by Carter, Cushing, Clark and Kennedy (2005) as interventions that "involve one or more peers without disabilities providing academic and social support to a student with disabilities" (p. 16). Peer mentoring activities might include working with a peer during classes on an assignment, participating in an integrated social skills group, and role playing social situations.

Peer-Assisted Learning Strategies (PALS) is one evidence-based practice that has been used in providing peer-to-peer assistance for diverse learners (What Works Clearinghouse [WWC], 2007). Peer Assisted Learning Strategies, developed by Fuchs and Fuchs in the late 1990s, was designed to assist students from kindergarten through high school with math and reading. The WWC found PALS to have potential benefits for reading achievement. One study involving PALS as an intervention was conducted by Saenz, Fuchs, and Fuchs (2005). The purpose of their study was to examine PALS in relation to the reading performance of students identified as English Language Learners (ELL) with learning disabilities. However, the study also focused on PALS as an intervention for students labeled ELL with varying abilities.

A total of 132 students labeled as ELL in 12 classrooms in grades three through six were included in this investigation. There were at least two students with a learning

disability in each of the 12 classrooms. The students were rank-ordered by their reading ability and divided into high and low ability groups, and stronger readers were paired with weaker readers. The tutor-tutee pair participated in three reading activities including partner reading with story retell, paragraph shrinking, and prediction relay. The students in the control group continued to receive their usual reading instruction which was mainly teacher-led and used little peer mediated instruction. The researchers reported that one of three outcome measures was statistically significant. Although the WWC did not confirm that finding, the overall size of the impact was large enough to meet WWC evidence standards, and this investigation was rated as having potentially positive effects on reading achievement.

Similarly, Kamps (1994) completed research using PALS as an intervention for reading with three children diagnosed with high-functioning ASD and 14 general education students, ages eight to nine, located in general education classrooms of three suburban elementary schools. In this multiple baseline design across subjects with a reversal, Kamps examined the effects of peer tutoring on reading and social interactions during unstructured time. After peer tutoring sessions that lasted 25 to 35 minutes over three to four days per week, the students with ASD were assessed orally on the number of words read correctly per minute. Additionally, the researcher asked the participant with ASD five comprehension questions from which a percentage correct was determined.

The results of this investigation supported the findings of previous research of the use of PALS as an intervention to increase reading skills. The reading rates of all three students in the investigation increased during both the initial and reversal phases of the

intervention by an average of 20 more words read correctly per minute. Kamps reported higher mean social interaction times for all three students with ASD and their non-disabled peers. While this investigation had the primary focus on increasing fluency rates, the researchers noted significant increases in social interactions as a result of the peer tutoring sessions. This investigation further demonstrated the potential impact of peer mentoring on individuals with ASD.

Peer Mentoring and Students with ASD

In an investigation by Jones and Schwartz (2004), peer mentors were utilized with three preschoolers with ASD in the hallway immediately outside the peer mentor's classroom. The researchers created three groups, with each group including one of the three students, a sibling of the student, a peer mentor and an adult model. The investigators utilized a parallel-treatment design replicated across three stimulus sets to investigate the effect of varying models. The differentiation in model sets was in the order that the students interacted with a typical peer, a sibling, or an adult. The researchers then examined the responses to the stimulus sets to observe any differences between the peer, sibling, or adult model.

During the intervention phase of this investigation, the experimenter showed the peer mentor a picture card and asked the model a question about the picture. When the model answered the question, she/he was given verbal reinforcement. The student, who had been observing the interaction, was then presented with the same picture and given the same verbal cues. All students reached the criterion level in the study although no

specific preference for the sibling, peer outside the family, or adult model was demonstrated. Maintenance of the learned skills was demonstrated by all students two weeks after the intervention demonstrating the potential impact of utilizing mentoring in working with students with ASD.

Lee, Odom, and Loftin (2007) also investigated the use of peer mentoring with children with ASD. Three children, ages seven to nine with diagnoses of ASD, were paired with two peer mentors in this multiple baseline across participants and settings investigation. The setting for this study was an elementary school. The children with ASD and their peer mentors participated in structured play activities where they worked on skills such as sharing and suggesting play activities. Social engagement with typical peers increased for all children with ASD after the intervention. Furthermore, the effects of the peer mentoring support generalized to a free-play condition where the students with ASD continued to demonstrate increased peer interactions. In summary, the benefits of peer mentoring for students with ASD have been validated by researchers (Jones & Schwartz, 2004). Specifically, benefits of peer mentoring for students with ASD included increased social interactions and initiations. Additionally, the impact of peer mentoring has been noted to generalize to different conditions and settings (Lee, et al., 2007).

Summary

Many pieces contribute to the puzzle that necessitates investigating best practices in social skill instruction for middle school students with ASD. At the corner of the puzzle, the impairments in social skills inherent to individuals with ASD that impact how

they interact with their peers, their families, and their world (APA, 2004). For each individual with ASD, the impairments in social skills manifest in many different ways, including lack of eye contact, affect, or verbal communication and may impact the ability to interact inappropriately with others, including peers and teachers (Volkmar & Tidmarsh, 2003). Adjacent to this puzzle piece is the rise in prevalence of individuals labeled as having an ASD being as high as 1 in 150 public school students carrying the diagnosis of an ASD (CDC, 2007).

Another piece of the puzzle directly impacted by the numbers of students with ASD is the changes in laws in including students with disabilities. While families of children with disabilities have passionately challenged the laws that dictate where students with disabilities were educated (Mills v. DC Board of Education, 1972; PARC v. Common Wealth of Pennsylvania, 1972) for students with ASD, within the text of the IDEA (1990) was the first official recognition of Autism as a category of disability. Despite the changes in education law and in the physical placement of students with disabilities, inclusion was still not defined. For students with varying disabilities, inclusion has different meanings in different schools, communities and states. For students with ASD, how inclusion was defined was as varied as the spectrum of autistic disorders.

In considering middle school students with ASD, one must also consider the piece of the puzzle that is the middle school setting. Within this age are many changes and the "hidden curriculum" is undefined and an omnipotent presence in the hallways and classrooms of middle schools. For students with ASD who have difficulty noticing the

subtleties of social communication (APA, 2004), the middle school "hidden curriculum" is difficult and overwhelming to master.

Fortunately, researchers have investigated different ways to help students master this curriculum (Rutherford, Mathur, & Quinn, 1998; Smith-Myles & Simpson, 2001) utilizing aspects of social learning theory. One curriculum, developed in 1997 by Goldstein and McGinnis, is based on Social Learning theory and reflects a process to teach the "hidden curriculum". *Skillstreaming the Adolescent* was one of the first social skills instruction approaches. A total of 50 skills make up the *Skillstreaming* curriculum with four specific components used to present each skill. The concrete, sequential steps outlined for each skill of the *Skillstreaming* curriculum appears to correlate well with the learning styles of students with ASD (Lopata, Thomeer, Volker, & Nida, 2006). Additionally, the use of modeling with feedback is a salient part of the *Skillstreaming* curriculum, which research directly reflects a practice described for students with ASD (Bellini & Akullian, 2007).

An additional piece of the puzzle emerging from the literature is the use of video models. Videos can be played over and over, the repetitive nature of which is beneficial to students with ASD who learn through repetition. Additionally, video models provide real examples of the desired skills, taking the mystery out of some facets of social interaction and creating a concrete visual for students with ASD (Bellini & Akullian, 2007; Sherer, et al., 2001). Completing the puzzle of social skills instruction for students with ASD is the implementation of peer mentoring in presenting the social skills. Peer mentoring involves using peers of students with disabilities to practice skills, to provide

feedback on the skills, and to provide increased chances for social engagement (Fuchs & Fuchs, 2005).

The current study was grounded in the research on video modeling (Bellini & Akullian, 2007; Nikopoulos & Keenan, 2004) and peer mentoring (Fuchs & Fuchs, 2005; Maheady, Harper, & Mallette, 2001) as methods of providing social skills instruction for middle school students with ASD. Because individuals with ASD have exhibited limited social communication skills, those skills necessary especially at the middle school level to understand the "hidden curriculum", social skills instruction has been deemed important (APA, 2004; Smith-Myles & Simpson, 2001). The potential for developed social skill curricula such as *Skillstreaming the Adolescent* (Goldstein & McGinnis, 1997) combined with video modeling and peer mentoring to positively impact the social skills of middle school students with ASD reflects the combining of current suggestions woven throughout the literature.

CHAPTER 3
METHODOLOGY AND PROCEDURES

Introduction

This research study focused on the impact of video modeling and peer mentoring on critical social skills of four middle school students diagnosed with ASD. Permission to conduct the study was received from the Institutional Review Board of the University of Central Florida (Appendix A).

The research design, methodology and procedures involved in conducting the present study are described in this chapter. The research questions open the chapter, followed by an overview of the investigation. Next, all study participants are described. Then, information on the setting for the investigation is provided, followed by the instrumentation and materials utilized. Next, the dependent measures, experimental procedures and study design are noted. The chapter concludes with validity and reliability reports for each instrument in the investigation, including treatment integrity and social validity measures.

Research Design

This investigation was conducted using a multiple baseline design across subjects (Kazdin, 1982; Kennedy, 2005). The variability in intensity of the behaviors of the population involved in this investigation, i.e., students with Autism Spectrum Disorders, necessitated a single subject design in that the researcher worked with students within a specific range of intelligence, social, and communication skills (Bellini, Peters, Benner,

& Hopf, 2007; Horner et al., 2005). The independent variable was the direct instruction of five critical social skills for inclusion presented using video models and peer supports. The dependent variable was the level of demonstration by the students of each of the five critical social skills in the first 15 minutes of an inclusion class.

Research Questions

1. To what extent did the combination of video modeling and peer mentoring of five critical social skills increase the level of demonstration of these skills in the general education setting?
2. What was the specific gain in social functioning as a result of an intervention utilizing both video models and peer mentoring of social skills for four middle school students with Autism Spectrum Disorders as measured by the Social Responsiveness Scale and Autism Social Skills Profile?

Participants

There were many groups of participants involved in this investigation. In the following paragraphs, the primary participants, the students with ASD, will be described followed by descriptions of the secondary participants. The secondary participants included the special educator, peer mentors, general educators, and parents of the primary participants.

Primary Participants

The Primary Participants (PPs) were selected based upon the following qualifications: (a) a diagnosis of autism by a qualified professional, (b) an IQ score above 70, and (c) inclusion in at least one general education setting. The PPs were four middle school-aged students with diagnoses of ASD in grades six and seven. Two of the four PPs were members of the community from which the middle school was populated. The remaining two PPs attended the selected middle school because of the program offered for students with ASD. Descriptive characteristics of the PPs are presented in Table 4.

Table 4
Primary Participants

Primary Participants	Age	Gender	Ethnicity	Grade	IQ
Participant 1	14	Male	Mexican-American	7	86
Participant 2	12	Female	Italian-American	7	77
Participant 3	12	Male	Caucasian	6	71
Participant 4	12	Male	Hispanic	6	89

While two of the four PPs were of Hispanic descent, all four PPs were chosen because they met the criteria for inclusion in this investigation. All PPs carried a diagnosis of ASD obtained independently from a physician, licensed psychologist, or diagnostic center. Information regarding PPs' diagnoses, and IQ scores were provided by the special educator from the PPs' cumulative school records.

At the time of the intervention, Primary Participant 1 (PP1) was a 14-year-old male student in the seventh grade. He was of Mexican American descent and a member of the community from which the selected middle school was populated. This student carried a diagnosis of Pervasive Developmental Disorder--Not Otherwise Specified

(PDD-NOS) and was diagnosed by a licensed psychiatrist in 1998. He was last assessed in 2004 where the examiner reported an Intelligence Quotient (IQ) score of 86 using the Weschler Intelligence Scale for Children III (Weschler, 1991). Additionally, this young man had been assessed using the Gilliam Autism Rating Scale (GARS) in 2004. His score on the GARS was 132 which indicated a high probability of an Autism Spectrum Disorder. This student was included in three general education classes including science, Junior ROTC, and physical education. ADI-R scores for this participant in the three domains were 23 for reciprocal social interaction (cutoff = 10), 23 for communication (cutoff = 8) and 9 for repetitive behavior (cutoff = 3). These scores were well above the respective cutoff scores and indicated a confirmation of the diagnosis of autism.

Primary Participant 2 (PP2) was 12 years old, in the seventh grade, and is a female student of Italian American descent. She did not live in the community from which the selected school was populated. She carried a diagnosis of mild/moderate autism and was diagnosed by a licensed psychiatrist in 1998. This student was assessed using the Childhood Autism Rating Scale (CARS) in 1998, and the examiner reported a score of 31.5 or mild to moderate autism. The student had last been assessed in 2004, and an Intelligence Quotient (IQ) score of 77 was noted by the examiner. This student participated in two general education inclusion classes including art and physical education. Autism Diagnostic Interview-Revised scores for this participant in the three domains were 28 for reciprocal social interaction (cutoff = 10), 38 for communication (cutoff = 8), and 12 for repetitive behavior (cutoff = 3), all of which were well above the respective cutoff scores and indicated a confirmation of a diagnosis of autism.

At the time of the intervention, Primary Participant 3 (PP3) was a sixth grade male student who is of Caucasian descent with a diagnosis of moderate Developmental Delay from a medical doctor in 1997. He was not a member of the community from which the selected school was populated. He participated in a general education health/physical education class. This student had been last assessed in 2000 at which time the examiner reported an IQ score of 71. Autism Diagnostic Interview-Revised scores for this participant in the three domains were 24 for reciprocal social interaction (cutoff = 10), 28 for communication (cutoff = 8), and 12 for repetitive behavior (cutoff = 3). These scores were all well above the respective cutoff scores and indicative of a diagnosis of autism.

Primary Participant 4 (PP4) was a 12-year-old sixth grade male student who is of Hispanic descent. He had been diagnosed as having an Attention Deficit Disorder with Hyperactivity and an Emotional Disability in 1998 by a clinical psychologist. In 2006, he was assessed using the Gilliam Asperger's Diagnostic Scale (GADS) by a clinical psychologist. The results of the GADS indicated a score of 82, a high probability of Asperger's Syndrome. This student participated in all general education inclusion classes with the exception of reading. He was a member of the community from which the selected school was populated. He was assessed in 2006 by a school psychologist who reported an IQ of 89. Autism Diagnostic Interview-Revised scores for this participant in the three domains were 13 for reciprocal social interaction (cutoff = 10), 11 for communication (cutoff = 8), and 8 for repetitive behavior (cutoff = 3), all of which were barely above the respective cutoff scores and indicated a diagnosis of autism. Primary

Participant 4 left this investigation during week 11 due to changes in his course of study and, as a result of his scores on the ADI-R. He did not fully meet the criteria for the investigation.

Secondary Participants

Peer Mentors

Peer Mentors (PMs) were among the secondary participants in this investigation. Each PP was paired with a PM (n=3) to facilitate collaboration in developing social skills. Peer mentors were selected based upon their meeting the criteria outlined for the peer mentoring program at the selected middle school. Potential PMs were required to complete an observation, an application, and an interview facilitated by educators at the middle school as part of the selection process. Each potential PM was required to observe students in the program for two 50-minute class sessions to see if the program for students with ASD was an appropriate setting for the PM to provide support and to provide the special educator an opportunity to observe how the prospective PM interacted with the students in the program. After being accepted into the program, PMs who were assisting students in the general education setting also shadowed a more experienced PM for two 50-minute class periods before assuming the role independently. Peer mentors participating in this investigation had previous interactions with the PPs with whom they were paired. Demographic information on the PMs is presented in Table 5.

Table 5
Demographic Information on Peer Mentors

Peer Mentors	Primary Participants	Age	Gender	Ethnicity	Grade
1	1	14	F	Asian-American	8
2	2	13	F	Caucasian	7
3	3	14	F	Caucasian	8

Being a PM at the selected middle school was considered as an elective class for which the students serving as PMs would receive a grade. To be considered as a PM, the students had to maintain at least a 3.0 grade point average and have no behavior referrals. Students in the peer mentoring program were given assignments to complete for a grade. One assignment was to create a functional academic game to be played by the students in the selected classroom.

Peer Mentor 1 (PM1) was a 14-year-old female student who is of Asian American descent in the eighth grade at the selected middle school. She was in her second year of being a PM, with both years of experience being in the classroom for students with ASD. Peer Mentor 2 (PM2) was a 13-year-old female student who is of Caucasian descent in the seventh grade at the selected middle school. She was in her first year of being a PM in the program for students with ASD. Peer Mentor 3 (PM3) was a 14-year-old female student who is of Hispanic descent in the eighth grade at the selected middle school. She was in her second year of being a PM in the program for students with ASD.

Pairing of the Peer mentors

The pairing of the PMs was completed by the special educator. All of the PMs had worked in the resource room setting since the beginning of the school year. Each PM

attended the inclusion class with his/her PP as an academic, social, and behavioral support. The pairing of the PM was determined by the period in which the PM was assigned to work in the resource room setting. The special educator also matched the PMs with the PPs based upon her observations of the initial interactions with all four students. Table 6 contains demographic information regarding the PP/PM pairings.

Training the Peer Mentors (PMs)

To participate in this investigation, the Peer Mentors (PMs) participated in training sessions including previewing the video model, reviewing the steps of each social skill with the investigator, and brainstorming ideas for role plays. Additionally, the investigator briefed the PMs on the expectations for their interactions with the PPs in the inclusion settings. The training for the PMs lasted one hour. All PMs participated in the same training session to ensure consistency across mentors. The training session for the PMs took place at the selected middle school in the teacher's planning area adjacent to the resource room, apart from the PPs. Table 6 displays demographic information on PMs.

Table 6
Primary Participant (PP)/Peer Mentor (PM) Pairings

Pairings	Age	Grade	Gender	Ethnicity
PP1 / PM1	14/14	7/8	M/F	Mexican American/Asian American
PP2 / PM2	12/13	7/7	F/F	Italian American / Caucasian
PP3 / PM3	12/14	6/8	M/F	Caucasian / Hispanic

Special Educator

The special educator, who was the primary implementer of the intervention, was an alternatively certified Special Educator, certified in Exceptional Student Education, grades K-12 by the State of Florida. She was certified via a state test and was completing a Masters level program of study in special education. To be certified through an alternative route in Florida means the teacher had a four-year degree and successfully passed the Florida Exceptional Education exam. This teacher also was a Certified Behavior Analyst (CBA) with almost 15 years of experience and in her second year as a classroom teacher through this alternative certification model. In this study, she was responsible for: (a) scheduling the time for the intervention, (b) introducing the intervention, (c) distributing and collecting materials, (d) monitoring the intervention, and (e) facilitating communication between the researcher and the parents of the PPs and the general education teachers. The special educator was provided the following materials by the researcher: (a) overview of the investigation, (b) protocols for each phase of the intervention, (c) copies of the video model, and (d) copies of the *Skillstreaming* materials utilized in the investigation. She also completed the Social Responsiveness Scale (Constantino & Gruber, 2005), the Autism Social Skills Profile (Bellini, 2008), and three social skills probes for each PP. Before, during and after the intervention, the researcher was available to answer any questions and provide any clarification needed by the special educator.

General Educators

Because this investigation sought to determine the impact of social skills instruction in inclusive settings, the support of the general educators was very important. The general educators allowed the researcher to observe in their classrooms and completed several sets of pre and post assessments for the researcher. Table 7 contains the descriptive characteristics of the three participating general educators. General educators were asked to complete the Social Responsiveness Scale (Constantino & Gruber, 2005) and the Autism Social Skills Profile (Bellini, 2008) for the PP in their classroom as pre- and post- intervention measures.

Table 7
Description of General Education Teachers

Content Area	Teaching Experience	Gender	Ethnicity	Professional Certification Area(s)
Science (PP1)	30 years	F	Caucasian	Specific Learning Disabilities, Early Childhood Education, Elementary
Art (PP2)	16 years	F	Caucasian	Art Grades K-12
Health/PE (PP3)	26 years	F	Caucasian	Special Education (ED) Grades K-12; PE 6-12, ESOL endorsed

During the intervention phase, general educators were asked to open their classrooms to the researcher and one interrater for observations. Each PP was observed three times per week in one general education classroom. Additionally, general educators were asked to complete three probes regarding each PP's implementation of the targeted

social skills; one at the beginning, one in the middle, and a third upon completion of the investigation. Appendix B provides an example of the form used in the weekly probes.

Parents of Primary Participants

The final group of secondary participants was comprised of the parents of the PPs. Table 8 contains a description of the parents of the PPs.

Table 8
Description of Parents of Primary Participants

Primary Participant	Parent Completing Forms	Ethnicity	Marital Status
1	Mother	Hispanic	Married
2	Father	Italian-American	Divorced
3	Mother	Caucasian	Married
4	Father	Hispanic	Widowed

Parents were provided with an overview of the goals of the investigation and copies of the social skills probes (Appendix B) by the special educator during individual face-to-face meetings at the selected middle school. Parents completed the Social Responsiveness Scale (Constantino & Gruber, 2005) and the Autism Social Skills Profile (Bellini, 2008) during the pre-intervention phase and again at the completion of the investigation. Parents also were asked to complete three probes regarding observations of the five critical social skills demonstrated by their child; one probe at the beginning, a second at the midpoint, and a third at the end of the investigation.

Settings

This investigation took place in two settings within the selected middle school which was located in a school district in central Florida and enrolled 1,159 students in the 2006-2007 school year. The two settings were the resource room setting and the general education inclusion classroom setting. The selected middle school was given an "A" grade based on the Florida Comprehensive Assessment Test (FCAT) results during the 2005-2006 school year, which means that the school made adequate progress for the lowest students in reading and math and that at least 95% of eligible students were tested. Table 9 contains demographic information obtained from the Florida Department of Education (2007) for the district and the school.

Table 9
Demographic Information for Middle School and District 2005-2006

Descriptor	Middle School	District
White, Non-Hispanic	79.6%	66.0%
Hispanic	8.2%	16.5%
Black	9.5%	14.1%
Asian/Pacific islander	2.5%	3.2%
American Indian/Alaskan Native	0.1%	0.3%
Enrollment of Students with Special Needs	16.9%	13.4%

A total of 16.9% of students at the middle school were identified as having special needs compared to 13.4% of the special needs students district-wide. Only 2% of the classes taught at the targeted middle school were taught by out-of-field teachers compared to the state average of 6%. Of the teachers at the selected middle school, 54% held advanced degrees, and the student-teacher ratio was 17:1 during the 2005-2006 school year.

Resource Room Setting

The intervention took place in a resource room setting and data were collected in three general education inclusion classrooms. The resource room provided instruction and support for 10 students in grades six through eight. All students in the resource setting carried diagnoses of ASD. The resource classroom had one certified special educator and two assistants. The targeted school utilized a range of models of inclusion where students with disabilities received instruction in both small group settings and in general education classrooms. Table 10 contains demographic characteristics of students in the resource room setting.

Table 10
Demographic Characteristics of Students in Resource Room Setting

Descriptors	Boys	Girls
Total Students	6	2
White, Non-Hispanic	3	1
Hispanic	3	0
Black	0	0
Asian/Pacific Islander	0	1
American Indian/Alaskan Native	0	0
Students with Special Needs	6	2

Two assistants worked full time in the program for students with ASD. One assistant, a woman of Caucasian descent, had completed 60 credit hours towards her degree in Human Services. Additionally, she had been a classroom volunteer for eight years in the public school system. Furthermore, she had extensive experience in working with children in 4-H programs and with after-school counseling services with young adults. She was in her second year as an assistant in the program for students with ASD. The second assistant, a woman of Caucasian descent, was a high school graduate with

numerous vocational classes focusing on providing daycare services. She was in her 8th year as a paraprofessional in the local school system. The 2007-2008 school year was her first year working in the program for students with ASD.

The resource room measured 30 feet by 15 feet. One wall had windows and cabinets. The back wall also had cabinets and counter space. There were doors to a girl's and a boy's bathroom along the back wall. The teacher's desk was along the side wall opposite the windows. The front of the classroom had cabinets and counter-space, a whiteboard and a bulletin board. There was a study carrel and bookshelves under the windows. There were three tables in the classroom, including a five feet by four feet rectangular table, a five feet in diameter round table, and a four feet square table. Twelve plastic student chairs were in the room with 4 chairs at the smaller rectangular table and 8 chairs around the round table. There were no assigned seats in the resource room. The door to the teacher work area was along the back wall with a one-way window on the top half of the door, next to a three foot square, one-way window in the back wall. Two large wire cages were stacked along the wall behind the teacher's desk which housed the class' two guinea pigs.

General Education Inclusion Classrooms

Four general education inclusion classrooms were observed by the researcher and an interrater during this investigation. These classrooms were used for art, science, mathematics, and health/physical education. Descriptive information for each of the

classrooms is presented in Table 11. The mathematics classroom was observed through week 11 of the investigation after which PP4 was not in the class.

Table 11
Description of General Education Inclusion Classrooms

Observation Time (Period)	General Education Inclusion Students				
	Total	Male	Female	IEP	ESOL
Science (P1) 10:42 am-10:57 am (3rd)	11	8	3	8	0
Art (PP2) 10:21 am-10:36 am (3rd)	30	18	12	3	0
Health/PE PP3) 3:07 pm-3:21 pm (7th)	48	22	26	12	7

Note. All general education teachers were traditionally certified.

Science Classroom (PP1)

The science classroom (PP1) was set up with seven trapezoid-shaped tables that were moved to form different seating arrangements for each class. A round table four feet in diameter was located in front of the teacher's desk. The students did not have assigned seats. Primary Participant 1 often sat at the round table by the teacher's desk. Each table was three feet long and two feet wide. The students sat in plastic chairs. The class pets were three hedgehogs and a large lizard and were housed on a counter by the windows. The room measured 32 feet by 18 feet. A row of shelves ran along the back wall and one side wall. The front of the room had a whiteboard and a bulletin board. One wall had large windows from the top to the middle of the wall and a counter top and storage cabinets on the lower half of the wall. A screen, often open, was mounted on the ceiling in the front of the classroom. A cart with a projector occupied the center of the room. The

teacher's desk was close to the wall opposite the windows and a table was situated next to the teacher's desk that held books, folders, and other classroom resources. Eleven students in the classroom, including 8 boys and 3 girls were educated in the science classroom daily. While the science classroom was considered an inclusion setting, there was a disproportionate number of students with IEPs compared to students without IEPs. More specifically, the science classroom would be considered a self-contained inclusion class.

Art Classroom (PP2)

The art classroom (PP2) measured 43 feet by 28 feet. A row of windows occupied one side wall, cabinets along the back wall, a blackboard on the front wall and tables along the other side wall. A door to the teacher's office was along the front wall with a window in the wall to see into a teacher's office. The teacher's desk and a long rectangular work table lined the side wall opposite the windows with cabinets under the windows. The room was arranged with 8 six feet by three feet rectangular tables in two rows of four. Five plastic chairs were located at each table. Four to five students sat at each table. A total of 30 students were in the class with PP2 including 12 girls and 18 boys. Primary Participant 2 sat at the second table in the front row with four other girls including her PM.

Health / Physical Education Classroom (PP3)

The Health/Physical Education class setting (PP3) was the gymnasium which measured 197 feet by 99 feet. Health/PE classes took place both in the gymnasium and outside on large, open fields. Primary Participant 3 changed into his PE clothes in the resource room because the paraprofessional and peer mentor assisting him were female and could not supervise his behavior in the boys locker room. The students came into the gymnasium and sat cross-legged in eight rows of six students facing the wall of bleachers. Primary Participant 3 sat in the seventh row of students in the next to the last space. The PE teacher took attendance first and then presented the information for the class. During the attendance and class overview of the class, the PM of PP3 would stand off to the side of the students near the gymnasium doors. The PM was a year ahead of PP3 and so stood to the side while attendance was being taken so PP3 could be with his typical peers. There were 48 students in this sixth grade Health/PE class with 22 boys and 26 girls. During the investigation, this student participated in soccer, volleyball, basketball, softball, and kickball with his classmates.

Instrumentation

Pre- and Post-Intervention Measures

The primary responsibility of the researcher during the pre- and post-intervention phases was to meet with each group of participants to provide an overview of the investigation. Specifically, the researcher discussed the purpose of the investigation and

the participant roles throughout the study. Additionally, the researcher facilitated the completion of all pre-intervention measures including the Social Responsiveness Scale (Constantino & Gruber, 2005), the Autism Social Skills Profile (ASSP) (Bellini, 2007), and the Autism Diagnostic Inventory-Revised (ADI-R) (Le Couteur, Lord, & Rutter, 2003).

Social Responsiveness Scale (SRS)

The Social Responsiveness Scale (Constantino & Gruber, 2005) addresses the various dimensions of interpersonal behavior, communication, and repetitive/stereotypic behaviors that are often characteristics of individuals with ASD. The purpose of the SRS is to assist caregivers in planning social skill interventions and assessing levels of social communication. The SRS could be completed by any adult familiar with the child's social behavior and took between 15-20 minutes to complete. The 65-item Likert scale questionnaire addresses a broad range of social behaviors typically demonstrated by children with ASD. The SRS is divided into five subscales including: (a) social awareness, (b) social cognition, (c) social communication, (d) social motivation, and (e) autistic mannerisms. Internal consistencies for reliability of the SRS are reported using Cronbach's alpha: .77 for the Social Awareness subscale, .87 for the Social Cognition subscale, .92 for the Social Communication subscale, .82 for the Social Motivation subscale, .90 for the Autistic Mannerisms subscale (Constantino et al., 2001).

As both a pre- and post-intervention measure, the PPs were assessed using the Social Responsiveness Scale (SRS) (Constantino & Gruber, 2005). The SRS was

completed by the special educator, general educators, and parents of the PPs. The purpose of the SRS was to determine levels of social communication skills and to provide supplemental information on specific gains in social skills during the investigation.

Autism Diagnostic Interview-Revised (ADI-R)

The purpose of the ADI-R (Le Couteur, Lord, & Rutter, 2003) was to provide more detailed information about the levels of social functioning of the PPs. The ADI-R is an extended interview designed to provide a diagnosis of ASD as well as assisting in the assessment of ASD. The ADI-R can be completed by either a parent or caregiver providing that person is familiar with both the developmental history and day-to-day behaviors of the individual with ASD. Additionally, the ADI-R can be utilized to assess individuals with ASD of any age, providing that the individual has a mental age of at least two years, two months. The interview generally requires 1 1/2 to 2 1/2 hours to administer and score. The interview has eight main sections including the following: (a) background questions about the individual's family and education and information about any applied diagnoses; (b) introductory questions to provide a general picture of the individual being assessed; (c) questions about the early development of the individual; (d) questions about the age at which language began to develop; (e) items focusing on language and communication functioning; (f) items focusing on social development and play; (g) items focusing on interests and behaviors; and (h) items focusing on a range of general behaviors including aggression, self-injurious behaviors, and seizures.

The individual administering the ADI-R was an experienced clinical interviewer. The administrator completed the ADI-R interviews with the parents of the PPs on three different days, meeting with two families on one day and the other two families on different days. Each interview lasted approximately 1 1/2 hours and was conducted at the selected middle school in a private room.

In a 1994 validation study by Lord, Rutter, and Le Couteur, the ADI-R was reported as having strong multi-rater Kappa coefficients ranging from .63 to .89 for each item and interaction correlations above .92 for all domain and subdomain areas. Multi-rater Kappa coefficients are used to report the level of agreement for interrater reliability. In reporting Kappa scores, Fleiss (1971) recommended the following guidelines: < 0, poor agreement; 0.0-0.20, slight agreement; 0.21-0.40, fair agreement; 0.41-0.60, moderate agreement; 0.61-0.80, substantial agreement; 0.81-1.00, almost perfect agreement (Fleiss, 1971). Constantino et al., (2001) also provided further substantiation in regard to the validity and reliability of the ADI-R. Table 12 displays the results of the ADI-R assessment.

Table 12
Results of the Autism Diagnostic Interview-Revised (ADI-R)

Primary Participant	Reciprocal Social Interaction	Communication	Repetitive Behavior
1	23	23	9
2	28	38	12
3	24	28	12

Autism Social Skills Profile (ASSP)

Primary participants were assessed both pre- and post-intervention using the Autism Social Skills Profile (ASSP) (Bellini, 2008) to provide more information on levels of social functioning. The ASSP is an assessment tool that provided a comprehensive measure of social functioning in children and adolescents with ASD and was designed to assist in intervention planning as well as providing measures of intervention outcomes. The ASSP was completed by the special educator, general educators, and parents of the PPs. The ASSP has been viewed as a reliable and valid social skills assessment tool for children and adolescents with ASD. The internal consistency for the ASSP was high with a Cronbach's alpha level of .926. The ASSP was validated on a sample of 232 individuals with high-functioning ASD and 101 individuals with ASD who were nonverbal or labeled as mentally retarded (Bellini, Peters, Benner, & Hopf, 2007).

Skillstreaming the Adolescent

During all phases of the intervention, the *Skillstreaming the Adolescent* curriculum (Goldstein & McGinnis, 1997) was utilized to provide step-by-step directions for each of the five critical social skills for inclusion. Appendix B contains a complete description of the five critical social skills as defined by Goldstein and McGinnis. Critical social skills for inclusion were defined as those skills most necessary and applicable to success in the general education classroom and in day-to-day functioning. Ten teachers of secondary-aged students with ASD were asked to choose 10 skills from the list of 50

social skills contained in Goldstein and McGinnis' (1997) *Skillstreaming* checklist that the teachers felt were critical for success in inclusive environments. Appendix C contains the list of 50 social skills from the *Skillstreaming* curriculum. The 10 teachers were graduate students enrolled in EEX 6297: Assessment, Diagnosis, and Curriculum Prescriptions for Students with this course focusing specifically on students with ASD. This course was one of four in a program for teachers to complete their Masters degrees and/or to receive state endorsement in working with students with ASD. The teachers surveyed were actively teaching students with ASD in grades 6 through 12.

The teachers polled were instructed to choose skills they felt were most important to successful inclusion of students with ASD in the general education setting. The list of 10 skills critical to inclusion selected by the teachers was then used to narrow the list of critical skills to 5. The five critical social skills for inclusion were selected from the list of 10 using the following criteria: (a) literature reviewed on teachers' perceptions of skills necessary for successful inclusion (b) input from the special education teacher, and (c) skills chosen that were both observable and measurable in a general education setting. Of the five skills selected, three were considered beginning social skills in the *Skillstreaming* curriculum: Greeting a Peer/Teacher, Participating in a Conversation, Tracking the Talker. The two remaining skills, Asking a Question and Following Directions, were considered to be advanced social skills according to the *Skillstreaming* curriculum (Goldstein & McGinnis, 1997). The operational definitions of the five critical social skills developed in this study are presented in Appendix B.

Video Models

All video models in this investigation were created by the researcher and were based on the *Skillstreaming the Adolescent* curriculum (Goldstein & McGinnis, 1997). The video models were validated by an expert panel including one of the authors of the *Skillstreaming* curriculum. Appendix D contains the storyboard of the video model.

The actors in the video models were 10 middle school-aged students who volunteered to participate. Efforts were taken to strengthen the quality of the video models by including an even mix of female and male actors and students from diverse backgrounds. Appendix E contains demographic information on the actors and actresses. The first video model included students of African American descent (female) and Hispanic descent (male). The last four video models, however, included only students who Caucasian descent.

The entire package of video models were 4 minutes and 52 seconds in length and included an introduction to the video and 5 video vignettes featuring each of the social skills being investigated. The main title screen featured the title "Making Sense of Middle School: Five Skills to Make Middle School a Little Less Confusing!" followed by information about the author of the video models. A Chapter Menu was presented for the video models that provided access to each of the five skills individually as follows: (a) Greeting a Peer or Teacher; (b) Participating in a Conversation; (c) Tracking the Talker; (d) Following Directions; and (e) Asking a Question. A narrator provided a short introduction that described each of the five video models. Each scenario opened with a screen with the name of the skill and each of the steps necessary for completing the skill

in a socially effective manner. The narrator read the name of the skill and each of the steps after which the video model played. Next, the video model replayed with a narrator pointing out each step of the skill. The ending credits featured the names of the members who created and produced the video models. Five video models were developed.

For the first skill, Greeting a Peer or Teacher, the video model was designed to represent the beginning of a class where two students greet each other and make "small talk." The video model was 51 seconds long. In the second video model, the actors modeled Participating in a Conversation. In this video model, the three actors demonstrated each of the steps of participating in a conversation by discussing their weekend plans. The scene was designed to represent the beginning of a class when students were waiting for the class to begin. The video model was 14 seconds long. The third video model focused on Tracking the Talker. This video model featured eight actors including six middle school-aged girls, one boy, and a female teacher. The scene was designed to represent a teacher introducing a lesson on roller coasters with the students demonstrating tracking the talker by watching the teacher and waiting for their turns to talk. The video model was 20 seconds long. The fourth video model focused on the skill, Following Directions. As the teacher gave directions, the students demonstrated following directions by completing the tasks given by the teacher. The video model was 1 minute and 22 seconds long. Finally, the actors modeled the fifth skill, Asking a Question. In this model, a student waits for an appropriate time to ask a question, gets the teacher's attention by making eye contact and raising his hand, and then asks his question. This video model was 28 seconds long.

Data Recording Form

The data recording form (Appendix F) was developed by the researcher to assist in clear, concise data collection. The form was field-tested in a fifth grade general education inclusion mathematics classroom over a series of four observations. Time sampling was used for both Tracking the Talker and Following Directions. The observations were divided into one minute intervals. For each interval, the observer noted if the behavior was taking place at the end of the interval (Alberto & Troutman, 1995). Each observation in this investigation was 15 minutes in length, divided into 15 sixty-second intervals.

Each critical social skill was assessed using a three-point scale ranging from 0 to2 where 0 = no observance of the skill, 1 = partial demonstration of the skill, and 2 = optimal demonstration of the skills by the PP. Scores for each observation were recorded by the researcher with interrater reliability used on 25% of the scores (Kazdin, 1982). If a behavior was not observed during a data collection session, the researcher and interrater marked "0" on the data recording form.

To determine a score for each observation, the researcher evaluated Greeting a Peer or Teacher, Participating in a Conversation, and Asking a Question at the end of the 15-minute observation. The participant could get a maximum score of two for each skill. At the conclusion of the 15-minute observation, the researcher calculated the score for Tracking the Talker and for Following Directions according to the guidelines set out in this investigation. For example, a participant who scored a "1" for Greeting a Peer or Teacher, "0" for Participating in a Conversation, "1" for Asking a Question, "2" for

Following Directions, and “0” for Tracking the Talker would have a total score of three for that observation day. The rating scale for each of the five critical social skills investigated is presented in Table 13.

Table 13
Rating Scale for the Five Critical Social Skills

Skill	Demonstration of Five Critical Social Skills		
	0 = None	1 = Partial	2 = Optimal
Greeting a Peer or Teacher	Ignoring a peer or teacher's greeting; Not initiating any interaction.	Looking at the peer or teacher.	Initiating a greeting; maintaining eye contact; responding to a greeting
Participating in a Conversation	No verbal interactions with peers or teachers.	Responding to questions / comments with one-word responses. Participating in one reciprocal interaction with a peer or teacher.	Responding to questions / comments with more than one-word responses. Participating in two or more reciprocal exchanges with a peer or teacher.
Tracking the Talker	Not looking in the talker's direction and/or playing with objects on desk or in hands.	Tracking the talker less than 50% of the intervals.	Tracking the talker more than 50% of the intervals.
Following Directions	Self-stimulation, rocking, and/or participation in tasks other than assigned.	Time sampling for engagement in the assigned task of less than 50% of the intervals.	Time sampling for engagement in the assigned task of more than 50% of the intervals.
Asking a Question	Not asking any questions.	Calling out to a peer or teacher. Pointing to an object or person.	Raising a hand and/or making eye contact with the peer / teacher, waiting to be acknowledged, and then asking a question.

Social Skill Probes

The social skills probes (Appendix B) used in this investigation utilized a five point Likert scale from almost never (1) to almost always (5) to rate the demonstration of each skill by each PP. There probes were developed by the researcher, based upon the Skillstreaming curriculum. The probes were field tested in a public high school setting over a series of five observations. Each skill was assessed using the observations of the general education teachers, the PMs, and the parents of the PPs. The probes were used three times during this investigation--at the beginning, midpoint, and the end.

Pre-Intervention Activities

Validating the Video Model

One type of validity is face validity. Face validity refers to the degree to which a measure appears to assess what it is supposed to assess (Slavin, 2007). The video models were validated by a panel of seven members including one of the authors of the *Skillstreaming* curriculum, two professors of special education, one parent of a student with ASD, a secondary age student with ASD, a secondary-age non-disabled peer, and two secondary-age teachers. The panel was asked to watch the video model and respond to questions about the face validity of the video using the Video Panel Validation Protocol (Appendix G).

Overall, the feedback from the expert panel was positive. Specifically, the panel commented positively about the clear, concise text, the reality of the classroom setting,

and the clarification and re-emphasis of the steps. Some limitations noted by the expert panel were the lack of diversity in actors and the older-than-middle-school appearance of the majority of actors. Additionally, one panel member noted the rate of the video progression being too fast as a possible limitation. Despite a few issues overall face validity of the tool appeared to reflect the intentions for which the tool was developed.

Experimental Procedures

Multiple Baseline

This single subject investigation featured a multiple baseline design over 35 data collection days. Data were collected by the researcher and an interrater in the general education inclusion setting. The interrater was present for 25% of the observations. Data were collected for each participant three times per week on Tuesdays, Wednesdays and Thursdays, in the general education inclusion classroom. Data were collected using the data recording form (Appendix F) and reflected the level of demonstration of each of the five critical skills by each of the PPs. Baseline data were collected for PP1on Days 1 through 14; for PP2 on Days 1 through 21; and for PP3 on Days 1 through 28. The researcher intervened with each primary participant respectively: PP1-Day 14; PP2-Day 21; and PP3-Day 28 of the investigation.

Baseline

During the baseline phase, the researcher observed the PPs in an inclusive classroom. Data collected during the baseline included the level of demonstration of each

of the five critical skills based upon a score of 0-10 and were recorded on the data recording form. An apriori decision for stability was determined by the researcher to be no more than one variation in score over four days with no ascending trend.

Intervention

Intervention Package: Day One

On day one of the intervention, the special educator, PP1, and PM1 sat at the desk in the teacher workspace adjacent to the resource room setting. The researcher sat in a chair away from the desk. The researcher had a clipboard with the fidelity checklist (Appendix H). A fidelity rating of 95% was sought for this investigation (Kazdin, 1982).

The special educator had the Intervention Day One Script (Appendix I) and two sets of eight-inch square cards in front of her. Each set contained five cards; one card for each skill. Each card listed the name of the skill and the steps prescribed by the *Skillstreaming* curriculum (Goldstein & McGinnis, 1997). The cards were printed on cardstock, and the background of each card was imprinted inside a visual image of a light blue computer monitor. The social skills cards were identical to the screen showing the steps of each skill in the video. There was a black Dell Latitude laptop with a 15-inch screen on the desk that was used to play the video models for each of the students with ASD with their PMs. The Intervention implementation schedule is displayed in Table 14.

Table 14
Intervention Implementation Schedule

PPs	Days and Times of Intervention Package Presentations					
	Day One	Time of Day	Day Two	Time of Day	Day Three	Time of Day
PP1	Day 13	10:00 AM	Day 14	10:00 AM	Day 15	10:00 AM
PP2	Day 21	9:30 AM	Day 22	9:30 AM	Day 23	9:30 AM
PP3	Day 30	10:00 AM	Day 31	10:00 AM	Day 32	10:00 AM

Note. PP = Primary Participant.

Day One of the intervention lasted 20 minutes with approximately 10 minutes for the introduction of the video and the segment on Greeting a Peer/Teacher. After viewing the video model of the first skill, the PP/PM pair reviewed the steps of the skill orally. Then the PP/PM pair viewed the video model for Participating in a Conversation and reviewed the steps orally.

Intervention Package: Day Two

The procedure for Day Two of the intervention was identical to the procedures in Day One. The special educator had the Intervention: Day Two Script (Appendix I) and two sets of eight inch square cards in front of her. Day Two of the intervention lasted 30 minutes with approximately 10 minutes devoted to each skill. First, the special educator introduced the video and the PP/PM pair viewed the video for Tracking the Talker. After viewing the video model, the PP/PM pair reviewed the steps of the skill orally. Then the PP/PM pair viewed the video model for Following Directions and reviewed the steps orally. The final video viewed was Asking a Question.

Intervention Package: Day Three

Day Three of the Intervention Package occurred in the resource room setting as well and 45 minutes with approximately eight minutes devoted to role playing each skill and the remaining five minutes devoted to role playing all five skills together. On the third day of the intervention, the PP/PM pair watched all five video models. Then, the pair role played each of the five social skills. The special educator facilitated the role plays using a script (Appendix I) provided by the researcher, but did not offer any suggestions or ideas as to the content of the role plays. The PMs utilized the steps based upon the *Skillstreaming* curriculum to guide the role plays. This same process for all three days was repeated for each of the PP during the intervention phase.

Treatment Enhancement

Following the intervention, if there was no change or a decrease of two data points over three days in the demonstration of any of the five skills for any of the PPs, the PM was invited to re-view the video model for the specific skill. The purpose of this re-viewing was to provide the PM with additional methods for facilitating the social skills with the PPs. Appendix J contains the Treatment Enhancement Script and its companion Fidelity Checklist.

Maintenance

Two and four weeks after the completion of data collection, the researcher observed each of the PPs in their general education inclusion class to gather maintenance

data on each of the social skills. The purpose of this observation was to collect information on the sustained impact of the intervention for each of the PPs.

Generalization

The purpose of generalization is to determine if the social skills learned in the intervention phase generalize to settings other than the one in which the intervention took place (Kazdin, 1982). The researcher and an interrater observed each PP in a different general education inclusion setting one week following the completion of the study, and again at two weeks after the completion of the study. Generalization data were collected using the data recording form.

Reliability Measures

Inter-observer Agreement

Inter-observer agreement (IOA) is defined as the extent to which two or more observers agree that a behavior occurred as well as when and how long a behavior occurred (Kazdin, 1982). The researcher and interrater participated in three training sessions before observing participants for this investigation. The interrater was one of the paraprofessionals that worked in the classroom for students with ASD. The training sessions consisted of the researcher and interrater watching videos of middle school classrooms. For each session, a child in the video was chosen to be observed. Using the data recording form created for this investigation, the researcher and the interrater observed the child in the video for 15 minutes. After the 15 minute video observation, the

researcher and interrater compared their observations, point-by-point. See Table 15 for the results of the analysis for interrater agreement.

Table 15
Percent Interrater Agreement

Social Skill	Percent Interrater Agreement
Skill 1: Greeting a Peer or Teacher	92.0%
Skill 2: Participating in a Conversation	98.0%
Skill 3: Asking a Question	99.0%
Skill 4: following Directions	99.0%
Skill 5: Talking the Tracker	98.0%
Overall Agreement	97.2%

According to Alberto and Troutman (1995), the recommended range for IOA is between 80 and 90%. For this investigation, an 85% IOA was sought. The researcher and interrater observed each PP at the same time on the same day each week in the general education inclusion setting using the data recording form. Point-by-point reliability examines data one-by-one to see if there is agreement (Kennedy, 2005). The IOA for reliability in this investigation was calculated both within participants and across the study.

Validity Measures

Validity measures are a critical variable to support the findings in a single subject research study. Social validity is defined as "whether the focus of the intervention and the behavior changes that have been achieved meet the demands of the social community of which the client is a part" (Kazdin, 1982; p. 20). Subjective evaluation is defined how the intervention is viewed by participants involved in the investigation (Kazdin, 1982).

Both social comparison and subjective evaluation were methods used to determine social validity. Upon completion of the investigation, the researcher facilitated focus groups with the PMs, PPs, and general educators to investigate social and subjective validity for the study. With permission from the participants, the focus groups were video/audio recorded for transcription. All recordings were coded and transcribed and the original recordings destroyed to protect anonymity. The transcriptions were analyzed according to similar themes (Miles & Huberman, 1994). Appendix K contains the focus group protocols for each group

Social Comparison

Social comparison involved identifying a peer group of the PPs and comparing their behavior to the behaviors of the PPs. For the purpose of this investigation, the PMs, general educators, and parents of the PPs participated in focus groups after the intervention to provide social comparison information. See Appendix K for the focus group protocols.

Subjective Evaluation

Subjective evaluation involved addressing the opinions of others who are qualified to evaluate the intervention that was applied (Kazdin, 1982). For the purpose of this investigation, one-way subjective evaluation data were gathered through the choosing of the 10 critical skills for inclusion. Additionally, the demonstration of the five skills by each of the PPs was measured at the beginning, middle and end of this

investigation using the social skills probes developed for this investigation. The general education teachers, PMs, and the parents of the PPs were asked to reflect upon any observed differences in the demonstration of the five social skills by the PPs using the social skills probes.

CHAPTER 4
ANALYSIS OF THE DATA

Introduction

This investigation was conducted using a multiple baseline design across subjects (Kazdin, 1982; Kennedy, 2005). Due to the variability in intensity of behaviors of the population involved in this investigation, i.e., students with Autism Spectrum Disorders (ASD), a single subject design was required in that the researcher worked with students within a specific range of intelligence, social, and communication skills (Bellini, Peters, Benner, & Hopf, 2007; Horner et al., 2005). This chapter presents the results of the intervention as well as pre- and post-test measures as applied to each of the research questions. Additionally, the social validity measures of the investigation are discussed, followed by reports on reliability measures.

Research Question 1

The first research question addressed in this investigation was: To what extent did the combination of video modeling and peer mentoring of five critical social skills increase the level of demonstration of these skills in the general education setting? All three participants showed increases in the level of demonstration of the critical social skills for inclusion after the intervention was implemented. Holistically, from visual inspection of the data each student demonstrated increases in social skill functioning over time with slight increases or decreases in performance on specific days. An overall graph is presented in Figure 3 for visual inspection of growth over the course of this study.

Interestingly though, is that each primary participant (PP) demonstrated increases in different social skills areas.

From the visual inspection of the students' performance in Figure 3, by day 18, all students were stable in their performance. Following the intervention for PP1 on day 13, he demonstrated increases in the level of demonstration of the five social skills. Then, during maintenance, he maintained a level of demonstration of the five social skills that illustrated a modest increase. Overall, his performance did improve but individual skills gained varied and are provided in detail below.

During baseline, PP2 exhibited modest increases in her level of demonstration of social skills. Following the intervention, from visual inspection, the overall trend in her performance was stable with a peak on day 30. During maintenance, the trend in the level of demonstration of the five social skills was similar to her overall performance.

During baseline, PP3 exhibited a wide range of social functioning. Following the intervention, from visual inspection, the overall trend in his behavior was stable with a one point peak in social skills on day 29. Then, during maintenance, the trend was continued at the same level of functioning.

Individual skill differences as well as unique events that occurred for each PP are provided in the following section. These differences are visually represented in Figures 4, 5, and 6,allowing for a discussion of overall performance as well as to provide insight into specific skills that were gained and certain events that occurred when an increase or decrease occurred for a specific subject. An apriori decision for stability within the

multiple baseline design was determined by the researcher to be no more than one variation of a PP's score over four days with no ascending trend.

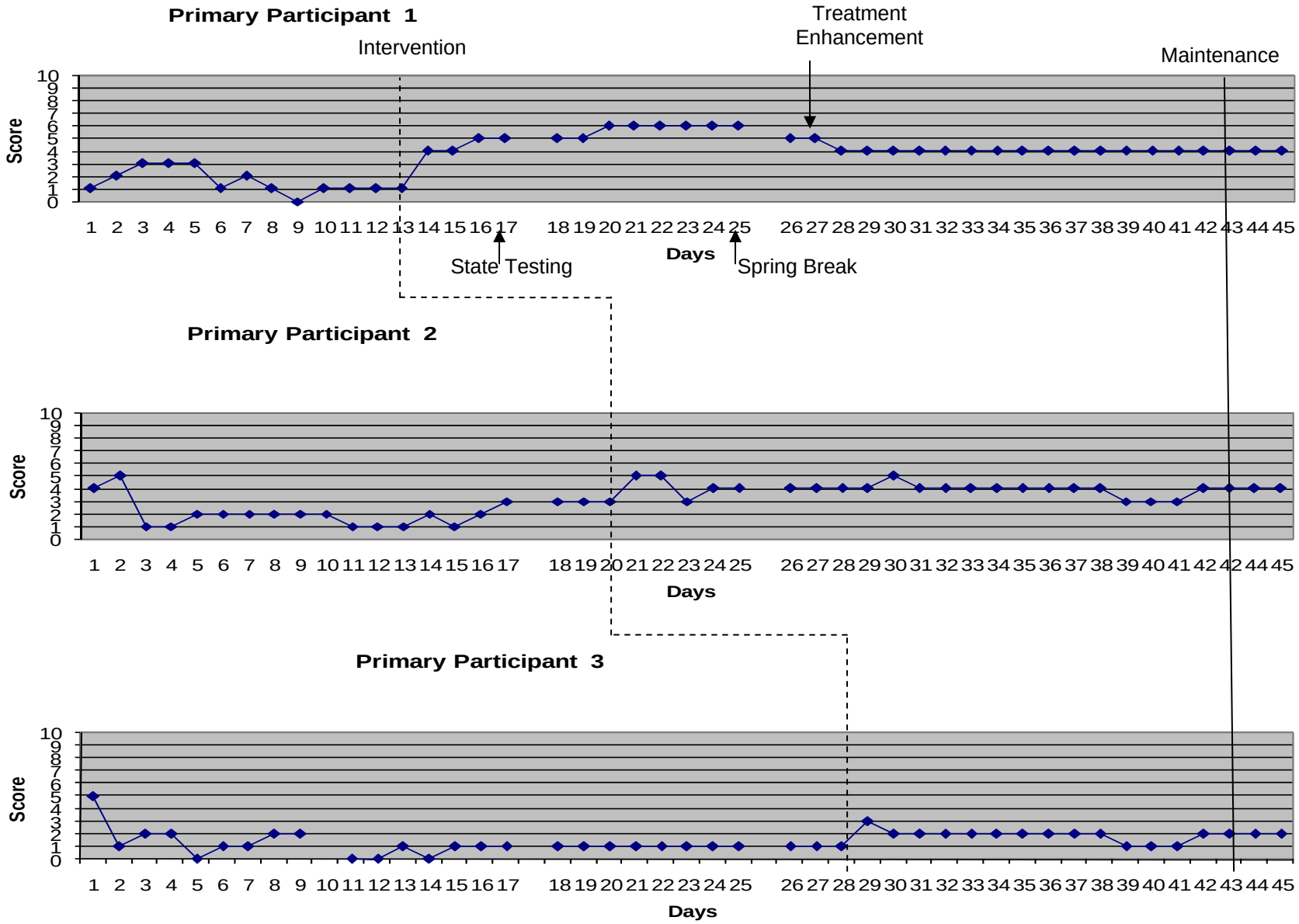
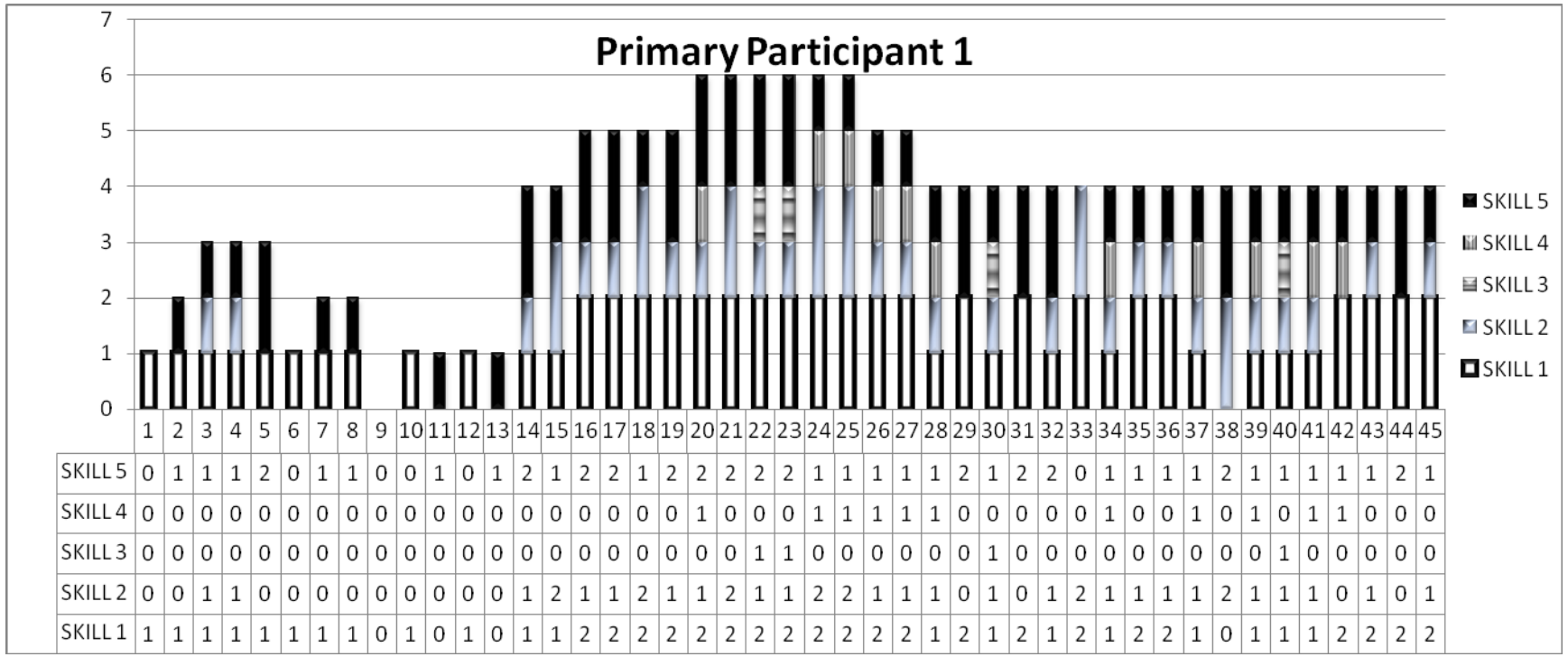

Primary Participant 1
Intervention
Treatment Enhancement
Maintenance
Score
Days
State Testing
Spring Break
Primary Participant 2
Score
Days
Primary Participant 3
Score
Days

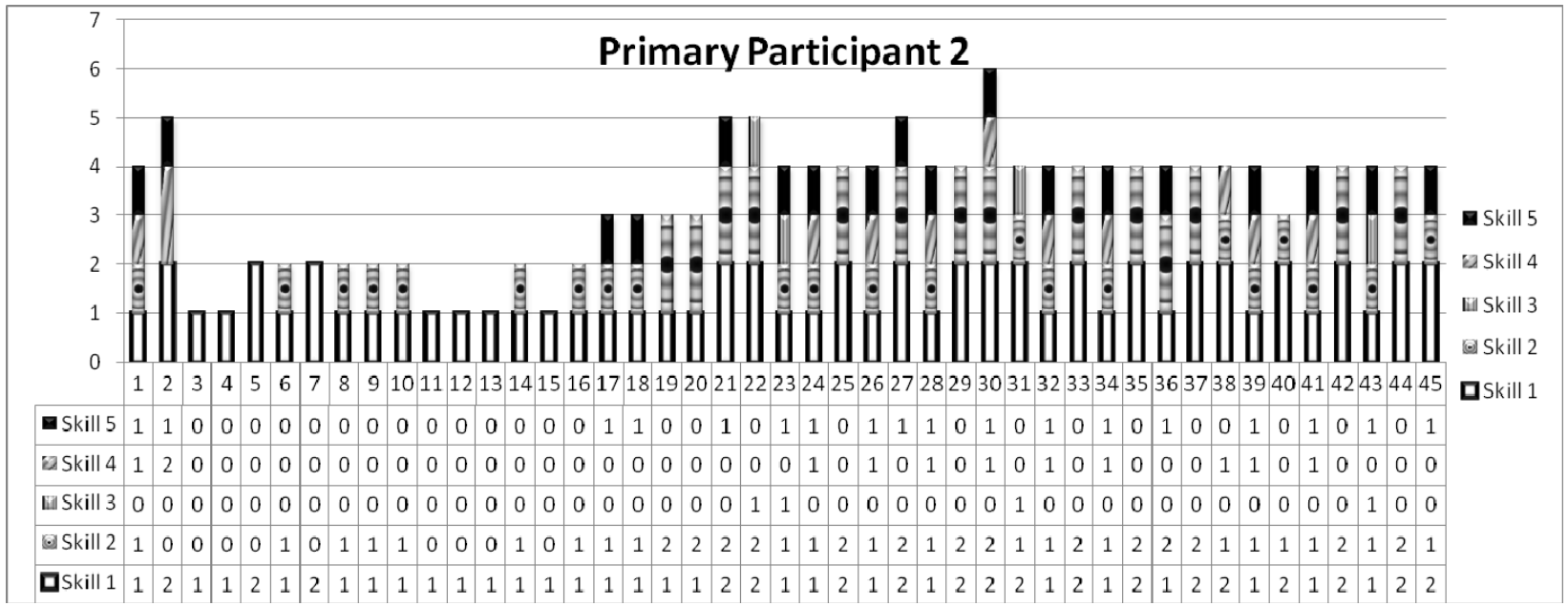
Figure 3. Multiple baseline for primary participants showing intervention, maintenance and treatment enhancement



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
SKILL 5	0	1	1	1	2	0	1	1	0	0	1	0	1	2	1	2	2	1	2	2	2	2	2	1	1	1	1	1	2	1	2	2	0	1	1	1	1	2	1	1	1	1	1	2	1
SKILL 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	0	0	0	0	0	1	0	0	1	0	1	0	1	1	0	0	0
SKILL 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
SKILL 2	0	0	1	1	0	0	0	0	0	0	0	0	0	1	2	1	1	2	1	1	2	1	1	2	2	1	1	1	0	1	0	1	2	1	1	1	1	2	1	1	1	0	1	0	1
SKILL 1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	2	1	2	1	2	2	1	0	1	1	1	2	2	2	2

Note: Skill 1: Greeting a Peer or Teacher; Skill 2: Participating in a Conversation; Skill 3: Asking a Question; Skill 4: Following Directions; Skill 5: Tracking the Talker

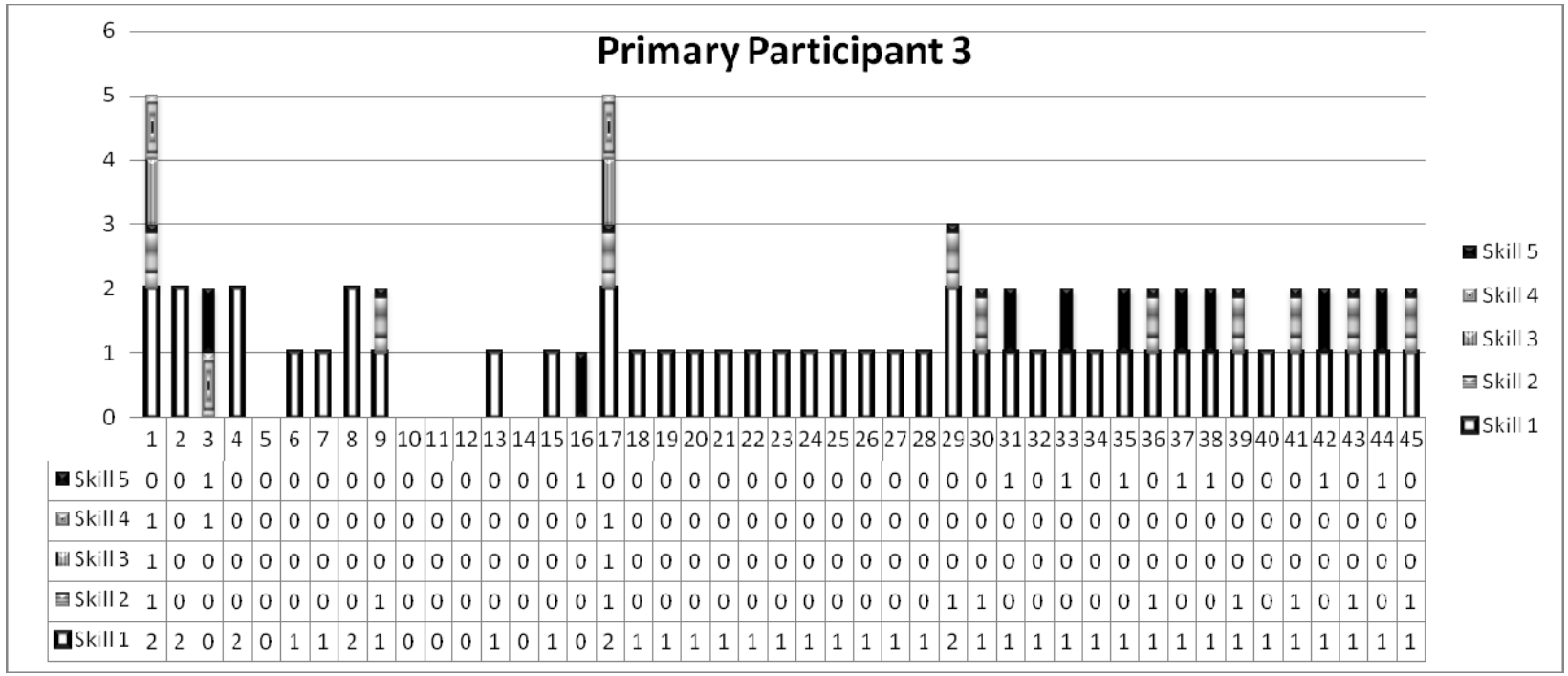
Figure 4. Scores for Individual Skills for Primary Participant 1



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Skill 5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	1	0	1	1	1	0	1	0	1	0	1	0	1	0	0	1	0	1	0	1	0	1
Skill 4	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0	1	1	0	1	0	0	0	0
Skill 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Skill 2	1	0	0	0	0	1	0	1	1	1	0	0	0	1	0	1	1	1	2	2	2	2	1	1	2	1	2	1	2	2	1	1	2	1	2	2	2	1	1	1	1	2	1	2	1
Skill 1	1	2	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	1	2	1	2	2	2	1	2	1	2	1	2	2	1	2	1	2	1	2	2

Note: Skill 1: Greeting a Peer or Teacher; Skill 2: Participating in a Conversation; Skill 3: Asking a Question; Skill 4: Following Directions; Skill 5: Tracking the Talker

Figure 5. Scores for Individual Skills for Primary Participant 2.



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Skill 5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	1	0	0	0	1	0	1	0
Skill 4	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Skill 3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Skill 2	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	1	0	1	0	1	0	1
Skill 1	2	2	0	2	0	1	1	2	1	0	0	0	1	0	1	0	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Note: Skill 1: Greeting a Peer or Teacher; Skill 2: Participating in a Conversation; Skill 3: Asking a Question; Skill 4: Following Directions; Skill 5: Tracking the Talker

Figure 6. Scores for Individual Skills for Primary Participant 3

Primary Participant 1 Skill Acquisition

During baseline, PP1 demonstrated great variability in his day-to-day social skills (high score = 5; low score = 0) but was stable in his performance on day 13. The initial inconsistency in behavior appeared to relate to the beginning of the year and the inconsistency in class schedule. Furthermore, PP1 demonstrated a decrease in the level of demonstration of his skills decreased after spring break which started on day 25. After the intervention, the level of demonstration of the five social skills as noted from a visual inspection of Figure 3 but only by one point. On day 17 statewide testing occurred for 10 days in which the researcher could not collect data. After statewide testing, PP1 demonstrated a one-point drop in score on days 26 and 27. During maintenance, the trend line for the data was consistently stable.

Observations from Figure 4 provides a summary of skills gained and lost over the course of the study related to the 5 targeted the skills. The most specific individual gain for PP1 from baseline to day 25 was in tracking the talker. After the intervention, he consistently tracked the person who was talking in both lecture settings and one-to-one conversations. While PP1 did not demonstrate increases in the level of demonstration of the five critical social skills in his ROTC class, he did maintain the same level of demonstration as in the science classroom. Scores for individual skills for PP1 are illustrated in Figure 4.

Primary Participant 2 Skill Acquisition

Primary Participant 2 exhibited scores that stabilized by day 13 but initially scores varied the first few days of school with one initial outlier score of 5 on day 2. After the intervention, which occurred on days 20 through 23, the level of demonstration of the five social skills went from a score of three to a high score of five. PP2's scores decreased and then stabilized again on day 18. On day 20, the selected middle school was on spring break so observations did not occur again until day 25. On day 29 of data collection, PP2 had a noticeable increase in her score to a five which was a gain in the social skill of greeting a peer or teacher and participating in a conversation. However, PP2 only greeted her PM in the art inclusion class and only participated in a conversation with her PM. In another inclusion class (Health/P.E.) with the same peer mentor, PP2 did not greet her PM nor did she participate in a conversation with her PM. For PP2, the level of demonstration of the five social skills incorporated in this investigation appeared to be related to the events in the class before her inclusion art class. On day 23, for example, PP2 had experienced difficulty in completing an assignment during the reading class right before art. Her difficulty in completing the assignment elicited a large amount of verbal redirection and refocusing by the special educator. After the class, upon entering the art class, PP2 was observed by the researcher to be more solicitous in her greeting of her peer mentor. Conversely, on day 30, PP2 had been celebrated for accomplishing a difficult task in her reading class. When she went to art class during the following period, the researcher observed her to smile more and ask her peer mentor more personal questions. For PP2 increases or decreases in scores often related to performance the prior

period impacting her social disposition for the next class. Figure 5 illustrates the specific demonstration of all skills by PP2.

Primary Participant 3 Skill Acquisition

While from visual inspection the gains in the level of social skills were less by comparison than the other PPs, Primary Participant 3 did demonstrate increases in his social skills. During baseline, PP3 demonstrated great variation in the first 14 days of data collection. On the first day of observation, the physical education class in which PP3 participated was completing a unit on basketball. Basketball was a favorite activity of the participant. The researcher observed PP3 participating in warm-up activities, following the directions of the physical education teacher and participating in conversations with his peers. On day two of the investigation, the topic in the physical education class switched to soccer. Soccer was not a favorite activity of PP2. On day two of the investigation, the researcher observed that PP3 appeared to pay less attention to the directions, demonstrated a lack of greetings to peers and teachers, and did not appear to be tracking the talker. Figure 6 illustrates individual scores for each skill for PP3. On days 10-15, PP3 demonstrated a stable baseline of only one point on average on a 10-point scale until the intervention. Then on day 15, the skills increased to 1 and on day 28, the special educator implemented the social skills intervention with PP3. The researcher noted an increase from a score of three on day28; after which this participant had an average score of two for the remainder of the data collection period. The specific skills in which this participant showed increases in social skills after the intervention were in

greeting a peer or teacher and tracking the talker. Also, the researcher in her field notes noticed that PP3 demonstrated the skill of greeting a peer or teacher while transitioning between classes and when someone entered the classroom.

Social Skills Probes

Social Skills probes were completed by the special educator, the general educator, a parent of a PP, and the Peer Mentor (PM) of the PP. The purpose of the social skills probes was to evaluate the impact of the intervention on the PPs. The secondary participants completed three probes for the PPs with whom they were associated. The social skills probes, displayed in Table 16, were completed at the beginning, middle and end of the investigation. The social skills probes were developed and tested by the researcher over a series of observations in a middle school mathematics class.

Table 16
Social Skills Probes Scores

Probes	Primary Participants			
	1	2	3	Mean
Special Educator Probe 1	20	15	16	17.00
Special Educator Probe 2	20	15	16	17.00
Special Educator Probe 3	20	15	15	16.67
General Educator Probe 1	15	16	15	15.33
General Educator Probe 2	15	16	16	15.66
General Educator Probe 3	15	16	14	15.00
Parent Probe 1	8	15	12	11.67
Parent Probe 2	10	16	12	12.67
Parent Probe3	8	16	12	12.00
Peer Probe 1	15	12	12	13.00
Peer Probe 2	15	12	11	12.67
Peer Probe 3	15	12	12	13.00

As noted in Table 16, there was little difference in the level of demonstration of the social skills for any of the PPs according to the social skills probes. The social skills probes (Appendix B) provide opportunities for the secondary participants to rate the five social skills that were the focus of this intervention. The five-point Likert scale rating observations of the skills ranged from a score of "1" for "Almost never" to a score of "5" for (Almost always). The maximum score for each probe was 20.

The researcher investigated the means for the probes for each primary participant for differences. These results are presented in Table 17. The highest possible score for the social skills probes which would indicate that that the PP was "almost always" demonstrating the five social skills was a 25. As noted in Table 17, PP1 was rated highest by the special educator, general educator, parent and peer mentor (mean = 18.50) followed by PP2 (mean = 15) and then PP3 (mean = 13.75).

Table 17
Mean Social Skills Probes Scores

Primary Participants	Mean Social Skills Probes Score
PP1	18.50
PP2	15.00
PP3	13.75

Summary for Research Question 1

Research Question 1 addressed the extent to which a combination of video modeling and peer mentoring of five critical social skills impacted the level of demonstration of these skills in the general education setting. While all participants

showed increases in social skills, PP1 and PP2 from visual inspection of the data showed stronger increases in social skills attainment.

Research Question 2

The second research question addressed in this investigation was: What was the specific gain in social functioning as a result of video modeling and peer mentoring of social skills for four middle school students with Autism Spectrum Disorders as measured by the Social Responsiveness Scale and the Autism Social Skills Profile? The purpose for administering the Autism Social Skills Profile and the Social Responsiveness Scale was to delineate any specific gains in social skills functioning for each of the PPs.

Autism Social Skills Profile (ASSP)

The ASSP was administered to provide additional information in regard to changes in social functioning for each of the PPs. One reason for the development of the ASSP was to provide practitioners with a rating scale that could be used as a pre- and posttest measure (Bellini, 2008). The 4-point Likert style scale allowed those completing the ASSP to rate the occurrence of 49 social behaviors from “never” to “sometimes” to “often” to “very often.” While minor increases and decreases were revealed in the pre- and posttest scores for the Autism Social Skills Profile, the changes in scores were not remarkable for any of the participants. Table 18 displays the ASSP results.

Table 18
Pre and Post Autism Social Skills Profile Scores

	Special Educator		General Educator		Parent	
Primary Participants	Pre	Post	Pre	Post	Pre	Post
1	125	125	120	123	121	122
2	113	115	108.5	110	111	111
3	121	120	118	119	116	116

For PP1, the pre and post test scores for the ASSP were within a 5-point range with a low score of 120 and a high score of 125. The special educator rated PP1 highest, followed by similar scores from the general educator and the parent of PP1. When considering each individual question, the pre- and posttest ratings for each question for PP1 varied in that the statements referring to appropriate eye contact were rated "very often" as opposed to earlier ratings of "often" by all three evaluators. For example, such changes in rating were noted in the following statements: "maintains eye contact during conversations" and "maintains the give and take of conversations." On day 27, the PM for PP1 reviewed the videos and discussed ways to support him in his general education classes due to a drop in his scores over two consecutive days. The purpose of the treatment enhancement was to provide the PM with additional ideas for working with the PP. This enhancement could have contributed to the increases in this particular skill area.

Primary Participant 2 was rated highest by the special educator with a score of 113 on the ASSP. The general educator differed in her rating of PP2 with a pretest score of 108.5 and a posttest score of 110. The parent of PP2 did not report any change in scores. In a question by question analysis, changes of ratings from "often" to "very often" were reported by the general educator for statements regarding initiating conversations. For example, the statement "interacts with peers during structured

activities" from the ASSP was rated "often" by the general educator in the pretest and changed to "very often" in the posttest.

Primary Participant 3 also was rated with scores within a 5-point range with a high pretest score of 121 and a low pretest score of 116. The special educator rated PP3 highest for both the pre- and posttest measures while the parents of PP3 rated his scores lowest. A question by question analysis for the ASSP completed for PP3 did not reveal any positive increases in social skills.

Social Responsiveness Scale (SRS)

The Social Responsiveness Scale (SRS) was administered to provide additional information about any observed changes in social skill functioning for each of the PPs. Three levels of rating exist on the SRS: severe autism, mild to moderate autism, and normal ranges of social functioning. The pre- and post- scores for the Social Responsiveness Scales are presented in Table 19. No significant gain in social functioning was demonstrated by the participants.

Primary Participant 1 was rated highest by his parent for both the pre- and posttest of the SRS. All scores for PP1 were within a 4-point range with a high score of 161 and a low score of 158. All scores for PP1 placed him in the severe range of the SRS regarding social skill impairment. Primary Participant 2 was rated differently between the special educator (pre- 185; post- 187), the general educator (pre- 134; post- 134) and her parent (pre- 141; post- 143). The pre- and posttest scores for PP2 had the widest range from a high score of 187 to a low score of 134, which represents a range of 53 points. The scores

for PP2 placed her in the severe range of the SRS regarding social skill impairment as rated by the special educator. However, the general educator evaluated PP2 as being in the mild to moderate range of social functioning. The pre- and posttest scores for PP3 were all in the 140s. The special educator rated PP3 highest with consistent pre- and posttest scores of 146. Both the general educator and the parent of PP3 had similar ratings for him (pre- 144; post- 143). All T-scores for PP3 placed him in the severe range of the SRS regarding social skill impairment.

Table 19
Pre and Post Social Responsiveness Scale Scores

	Primary Participants		
Scores	1	2	3
Special Educator			
Pretest	159	185	146
Pretest T	≥90	≥90	≥90
Posttest	159	187	146
Posttest T	≥90	≥90	≥90
General Educator			
Pretest	158	134	144
Pretest T	≥90	88	≥90
Posttest	158	134	143
Posttest T	≥90	88	≥90
Parent			
Pretest	160	141	144
Pretest T	≥90	≥90	≥90
Posttest	161	143	143
Posttest T	≥90	≥90	≥90

Summary for Research Question 2

The second research question addressed in this investigation was as to the specific gain in social functioning as a result of video modeling and peer mentoring of social skills for the primary participants. The measures used to investigate specific gains were

the Social Responsiveness Scale (SRS) and the Autism Social Skills Profile (ASSP). The results of the ASSP and the SRS did not reveal notable gains in social functioning overall. However, specific gains in social functioning were noted for both PP1 and PP2.

Social Validity

The researcher completed four focus groups with the participants of the investigation: Peer Mentors (PMs), parents of PPs and the PPs using the protocols presented in Appendix K. Groups were asked specific questions about their participation to add measures of social validity to the investigation.

Overall, the PPs enjoyed watching the videos and role playing with the PMs. One PP said the video was too fast and should have been played slower. All three PPs reported they liked to learn the social skills because they were able to watch the videos more than once and they received one-to-one time with their PMs. Two of the PPs liked the actors in the video, while a third PP stated that the actors looked too old for middle school.

The parents of the PPs reported being pleased that their children were being provided social skills instruction. One parent reported that her son had participated in social skills lessons before but that this was the first time using video models. The other two parents were unsure if their son/daughter had participated in social skills training in previous years. All parents felt their child benefitted from the experience but could not comment directly on any specific gains. One parent felt her son was initiating more conversations with people they met in stores.

> "We were in the grocery store one day and he saw a classmate from school. He walked right up to him and said hi and asked how he was. I hadn't seen him do that before."

Social Comparison

The PMs overwhelmingly agreed that they enjoyed participating in the investigation. All three PMs reported that they would have preferred to have been provided with specific scenarios to explore with their PP. Two PMs (PM1 & PM3) who liked the videos did remark that they seemed too fast. Additionally, two PMs (PM1 & PM2) felt the videos were not specific enough in that each step of the skill was not exaggerated. Peer Mentor 1 and 2 commented that they felt very excited when their PP engaged them in conversation.

> "When she [PP2] first started asking me questions about what I did the night before I was psyched. She did it again the next day too. She asked the same five questions – What did I eat for dinner? What did I watch on TV? Did I do my homework? What time did I go to bed? and Did I play any sports? She did that [asked the same five questions] for a few days. One day she didn't and I was disappointed."

The general educators overall remarked that they did see minor changes in the social skills of the PPs but did not observe drastic changes. One general educator noted that she "wished she [the PP] would ask me the questions she asked her peer mentor". Another general educator stated that "he [the PP] seemed to be paying more attention to what was going on in the class than before. I liked seeing that". All of the general educators spoke positively about teaching the social skills to the students with ASD in their classrooms. Specifically, one general educator said, "Anything that will help him [the PP] fit in is great. Teaching him social skills like the ones his peers have makes sense

if we want him to be seen as ‘typical’ [*General Educator held her fingers in the air and made the sign for quotation marks*] or ‘normal’”.

Interrater Agreement

As established in Chapter 3, the interrater observed the social skills for 25% of the total observations. Because the final number of observations was unknown at the beginning of the study, the researcher hypothesized that there would be 60 days of observation. The interrater accompanied the researcher for 15 days out of the total 60 days which was 25%. Additionally, the researcher and interrater were required to have an 85% rate of agreement using point-by-point analysis. As demonstrated in Appendix L, the researcher and interrater achieved the desired 85% rate of agreement overall and within each of the social skills observed.

Summary

In conclusion while valuable information was gained through this investigation, Research Question 1 was validated more strongly for all three participants than was Research Question 2. The results of this investigation provide rich information as to the importance of the skills being targeted. Although the results are not definitive at this point, they do provide strong initial steps towards consideration for new ways to provide social skills instruction and specifically instruction for adolescents with ASD in more inclusive settings. The results of this investigation provide an array of information to consider about further investigations of social skills instruction for middle school

students with moderate ASD. This area of research is currently applicable to middle school students with ASD. As this population grows in number and age, research is needed to fill the gaps in the social skills of this population.

CHAPTER 5
SUMMARY, DISCUSSION AND RECOMMENDATIONS

Introduction

The purpose of this chapter is to discuss the relationship between the results of the current investigation and the existing literature on social skills instruction for students with moderate Autism Spectrum Disorder (ASD) utilizing video modeling and peer mentoring. The chapter contains implications of the research findings as they relate to the literature review and to future research possibilities. Also, recommendations for further research in the area of social skills instruction for students with ASD utilizing video modeling and peer mentoring are presented. Lastly, the limitations of the investigation are discussed.

Summary and Discussion of Findings

This study attempted to answer two research questions: What was the impact of video modeling and peer mentoring of critical social skills for inclusion on the levels of demonstration of these skills by middle school students with ASD? What, if any, were specific gains in social functioning as a result of the intervention? The study included three middle school students with moderate ASD in sixth and seventh grade. The investigation took place in a medium-sized suburban school in central Florida. Secondary participants in this investigation included peer mentors, general educators, the parents of the primary participants, and one special educator. The researcher sought to determine the effectiveness of a social skills intervention utilizing video modeling and peer mentoring.

The dependent variable in this investigation was the level of demonstration of five specific social skills by the primary participants (PPs) of each of the five critical social skills in the first 15 minutes of an inclusion class. The independent variable was the direct instruction of five critical social skills over a three-day intervention package that included watching videos of social skills, discussing the skills, and then role playing the skills. Research outcomes were determined using a multiple baseline design across subjects.

The Relationship between the Results of this Investigation and Current Literature

It is difficult to extrapolate exactly which part of the intervention, video models or peer mentors, produced more salient results. However, the completed investigation demonstrated that the combination of video models and peer mentors (PMs) did positively impact the level of demonstration of critical social skills for inclusion for two students with ASD. This section provides a summary of the research on a) the impairments in social skills demonstrated by middle school students with ASD and the impact of these impairments for students with ASD at the middle school level; b) the increase in numbers of students with ASD being included in middle school and the benefits and challenges of being included for students with ASD; and c) the benefits of using structured social skills approaches coupled with video modeling and peer mentoring for students with ASD, as compared to the results of this investigation.

Impairments in Social Skills and the "Hidden Curriculum"

Impairments in social skills inherent to individuals with ASD impact the ways in which they are viewed by their peers, their teachers, and their communities (APA, 2004; Volkmar & Tidmarsh, 2003). For example, impairments in social skills may include a lack of eye contact, affect, or verbal communication as well as difficulties in understanding the "hidden curriculum" (APA, 2004; Smith-Myles & Simpson, 2001). The peer mentors in this investigation noted during the focus group that the students with ASD often didn't seem to know how to interact with other people. One PM stated that she "kept waiting for her [the PP] to look at her and talk to her when they sat in class together. Usually she [the PP] just stared at her paper or at me". Another PM reported that he felt that "sometimes it was really obvious that his [the PP] social skills weren't the same as everyone else. He [the PP] would all of a sudden just say something and I had no idea why he said it. It was always something that we weren't talking about. It doesn't make sense to me when he does that and a lot of people think it's weird". These types of peer reactions are not unusual for a student with ASD in the middle school setting as they often do not understand the "hidden curriculum" (Smith-Myles & Simpson, 2001).

Reactions by the peer mentors indicate the positive possibilities of utilizing video modeling and peer mentoring of social skills for students with ASD. In fact, one peer mentor related the following story during the focus group.

> "There was the day that he [the PP] dribbled the basketball across the gym and scored a basket on the first shot. He ran back to his team and was high five-ing everyone. He was looking at his peers and smiling. He seemed so normal. I don't think that would have been as exciting for him if he was in the resource room".

Similarly, another peer mentor recalled that "she [the PP] walked up to me and asked me, like, five questions about what I did the night before. She always said hi to me but that was it."

As defined by Smith-Myles and Simpson (2001), the "hidden curriculum" is the unwritten rules that determine if students are deemed socially acceptable to their peers. For adolescents, middle school is a time for social upheaval, changes in expectations, and physical changes (Bunting, 2004; Phelps, 2003). The changes of adolescence are more profoundly noticeable in the middle school setting as adolescents seek to master the "hidden curriculum". For students with ASD who have difficulty recognizing the subtleties of social communication (APA, 2004; Simpson, 2005), the middle school "hidden curriculum" is challenging and can be overwhelming to master. These challenges become more evident as the number of students with ASD increases. Despite the fact that students with ASD have represented less than 1% of the population of students receiving special education services, there has been a steady increase in these numbers over the past 10 years. In the school year 2006-2007, the United States Department of Education reported 6,713,000 students with disabilities. In our public schools in 2006-2007, one-third of students newly diagnosed were students labeled ASD (US DOE, 2007). In the selected middle school, the program for students with ASD was in its second year and the class size had doubled from the first year. The special educator reported that her class was due to almost double again for the following school year. The students who would be entering her classroom, she noted, definitely would benefit from social skills instruction if she was going to be able to have them included in the general education setting. "There

are a lot of benefits for these kids [students with ASD] to be included but you can't just throw them in a general education class and say 'Go for it!'".

Increases in social engagement and interaction were two of the reported benefits to including elementary-aged children with ASD in recent literature (Downing & Eichinger, 2003; Fisher & Meyer, 2002; Harrower & Dunlap, 2001). However, a lack of research is currently available on the benefits of inclusion for middle school students with ASD (Charlop-Christy, Le, & Freeman, 2000). Fortunately, researchers have investigated different ways to help students with impairments in social skills in inclusive settings (Rutherford, Mathur, & Quinn, 1998; Smith-Myles & Simpson, 2001). In fact, the number of social skills studies for students with ASD across time has increased by 16% (Matson, Matson, & Rivet, 2007) from 1979 to 2007.

Video Modeling as a Method for Social Skills Instruction

As noted by peer mentors in this study, impairments in social skills in individuals with ASD impact how they relate to others across all settings (APA, 2004; Simpson, 2001). This "hidden curriculum" represents the underlying social rules and actions that emerge in every middle school and determines what is "cool" or " not cool" (Smith-Myles & Simpson, 2001). Fortunately, an emerging body of literature has documented the benefits of using video models to teach students with ASD and was investigated in this study of social skills. Videos can be played over and over, the repetitive nature of this tool can be beneficial to students with ASD who learn through repetition. Additionally, video models provide real examples of the desired skills, taking the mystery out of some

facets of social interaction and creating a concrete visual for students with ASD (Bellini & Akullian, 2007; Sherer, et al., 2001). One peer mentor related that she "didn't think she [the PP] would have talked to me if she hadn't seen the videos and practiced with me. We've been in classes together all year. She never asked me personal questions or tried to have a conversation with me before". According to Bellini and Akullian (2007), video modeling is a promising practice for providing social skill instruction. As demonstrated through this investigation, the video models positively impacted the levels of demonstration of the social skills for all PPs. The PPs reported being interested in watching the video models, and they maintained attention throughout the viewing of the models. Additionally, all PPs made requests throughout the investigation to watch the videos. For example, one PP stated that he would like to "watch the videos again before my next class to remind me what to do."

Peer Mentoring

Peer mentoring involves using peers of students with disabilities to practice skills, to provide feedback on the skills, and to provide increased chances for social engagement (Fuchs & Fuchs, 2005). Research on peer mentoring has shown that the use of peer mentors with children with disabilities can promote more positive behaviors (Bellini, 2008; Fuchs & Fuchs, 2005; Wilhite, Braaten Frey, & Wilder, 2007). Students without ASD in the middle school often can pick up on the "hidden curriculum" of middle school classrooms, hallways, and cafeterias. For middle school students with ASD, who often exhibit impairments in social skills functioning as well as an inability to pick up on the

subtleties of the "hidden curriculum", the use of peer mentors provides a means of social skill modeling from the view of a "typical" student. The PMs in this investigation provided the PPs with real-life practice and role modeling for each of the social skills. In doing so, the PPs were able to experience each step of each skill in a logical, sequential order in a natural setting. While two of the PPs reported liking the videos, one PP stated that "the steps were hard to see sometimes. I didn't see him raise his hand to ask his question." This statement was in reference to the skill of Asking a Question video model. Another PP reported that she "liked to see the kids in the videos show the steps [of the skills]."

As noted in the literature, peer mentoring has been validated as an effective research-based practice (US DOE, 2007) from the What Works Clearinghouse of information for evidence-based practices. Positive gains in social skills for the PPs as well as positive feedback from the PMs were two results of this investigation. Peer mentors supported both the modeling process and the reviewing of the skills, with benefits for both groups.

Implications of the Research Findings

The implications of the research findings of this investigation are applicable to both students with ASD and their teachers. For children with ASD, the possibility of increasing the ease of social interactions is a valuable tool as more and more students with ASD are included in general education classrooms. The use of video models as a tool for students with ASD is a promising practice with much emerging literature is

reporting. Additionally, teachers could be impacted by the inclusion of video modeling and peer mentoring in their classrooms. Increases in positive social interactions as a result of direct social skill instruction via models could result in fewer behavior disruptions in classrooms and greater time on learning.

Implications of Using Video Modeling for Students with ASD

Video modeling has been used to maximize the strengths of individuals with ASD as visual learners by capturing a child's attention and reducing stimulus overselectivity (Charlop-Christy & Daneshvar, 2003). For example, each of the PPs in the investigation leaned forward in their chairs and maintained eye gaze at the laptop screen despite other noises from the adjoining room. Video modeling capitalizes on the potency of observational learning (Delano, 2007) and incorporates an individual with ASD's ability to imitate behaviors (Ayres & Langone, 2005; Charlop-Christy & Daneshvar, 2003). As reported in the focus groups with both the PPs and PMs, the videos showed the students how the skills would look when they were being used. One PM reported, "We didn't have to make up what the skill might look like. The videos showed real kids doing real things." One PP said simply, "The videos were fun. Again? [PP pointed to the laptop screen where he had watched the videos]" Video Modeling provides practitioners with a tool for repetitive teaching, drawing on one of the learning strengths for students with ASD (Smith-Myles & Simpson, 2001) and that is precisely what happened as noted in the increases in the levels of demonstration of the social skills addressed in this investigation.

Implications for Teachers

This intervention provided a framework for implementing a structured social skills approach incorporating video models and PMs. Because student-teacher relationships have been predictably related to student behaviors, students with ASD in the middle school environment must demonstrate that same kind of social savvy including mastering the "hidden curriculum". In fact, researchers have validated the effectiveness of social skills training for students with emotional and behavioral disabilities (Quinn, Kavale, Mathur, Rutherford, & Forness, 1999; Rutherford, Mathur, & Quinn, 1998). The structure and detail provided for the implementation of this intervention may assist teachers in facilitating social skill development in students with ASD. Additionally, the technology involved in creating the video models is easily accessible on most personal computers. The availability of lower-cost, high quality video cameras also helps to make this intervention viable for classroom teachers. This intervention provides a framework for implementing social skills instruction that can be further developed to improve the inclusion experiences for students with ASD and their peers.

Recommendations for Future Research

Future research possibilities for using video modeling for social skills instruction are multifaceted and promising. Examples include exploring the use of iPods and similar technology, creating libraries of social skills videos for teachers to use in their classrooms, replicating the investigation with students at the elementary and high school

levels, and utilizing technology such as the Virtual Classroom for social skills instruction and training.

The availability of increasingly sophisticated although relatively simple to use technology, i.e. iPods, video phones, digital cameras, etc., provides increased access to video modeling as a tool. Video models could be created by teachers in their classrooms using their own students. The videos could then be uploaded to iPods for viewing immediately before classes.

Additionally, the need for a structured social skills program for students with ASD has been documented by numerous researchers (Downing & Eichinger, 2003; Harrower & Dunlap, 2001; Morrison, Kamps, Garcia, & Parker, 2001; Simpson, de Boer-Ott, & Smith-Myles, 2003). Replication of the intervention package developed for use in conducting the present research could result in a comprehensive social skills curriculum for students with ASD. According to best practices in social skills instruction (APA, 2004; Simpson, 2005; Bellini, 2007), students with ASD benefit from repeated opportunities to observe and model skills. By increasing the number of times the students with ASD view the video models, there is increased possibility that the observed skills can be generalized to different settings (Bellini & Akullian, 2007; Bellini, et al., 2007; Simpson, 2005) to increase the benefit to the student with ASD. Furthermore, using relatively simple technology, teachers can create video self-models, with the students with ASD as the stars of the videos. An emerging body of literature documents the benefits of using video self-models with students with ASD (Banda, Matuszny, & Turkan, 2007; Charlop-Christy, Le, & Freeman, 2000; Graetz, Mastropieri, & Scruggs,

2006; Nikopoulos & Keenan, 2004) since today's students are Digital Natives. According to Prensky (2001), Digital Natives fluently speak the digital language of computers, video games, and the Internet. Technology makes sense to today's students who are often proficient at managing various technologies and have demonstrated a propensity towards using technology in everyday life (Sandforth & Haworth, 2003). Today's teachers can create video models in their classrooms using their own students and then the videos could be uploaded to iPods for viewing before class daily.

Future research should also include the development of additional video model prototypes (Ayres & Langone, 2005; Delano, 2007) for students at the elementary, middle, and high school level. Using research-based social skills curricula as a guide, (Simpson, Langone, & Ayres, 2004), video models could be developed and evaluated to create a resource library for teachers, parents, and practitioners working with students with ASD (Bellini & Akullian, 2006; Sherer, et al., 2001).

While this investigation focused on students with ASD who would be considered average to below average cognitive functioning, it would be interesting to apply this intervention to students who are classified as high functioning autistic or Asperger's Syndrome. Applying this intervention to students with ASD with higher cognitive ability could provide valuable social skills instruction for those students as they may have greater ability to synthesize the information from the video models.

Finally, the creation of social skills simulations is another area supported for further investigation by the results of this investigation. The video models could be adapted into simulations for students to practice social skills in a safe environment

(Hughes, Stapleton, Hughes, & Smith, 2005). Additionally, teachers could use the simulations to increase their ability to provide social skills instruction in that they could manipulate the virtual environment to the needs of the student. One such advancement in technology is the development of the TeachME™ Lab at the University of Central Florida. This technology represents the gateway to future simulation experiences for both students with ASD and their teachers (Dieker, Ogilvie, Aronin, & Davis, 2006; Haberman, 2006; Zeichner, 2003) providing a safe environment to practice with virtual students before entering the "hidden curriculum" at any grade level could be invaluable.

Limitations of the Study

While the intervention in this investigation positively impacted the five selected social skills for inclusion, limitations existed within the investigation that may have impacted the outcomes. First, the small sample size involved in single subject research studies limits the external validity of the investigation (Kazdin, 1982). Additionally, the three primary participants (PPs) carried diagnoses of ASD. Due to the variations in behaviors of individuals on the autism spectrum, it is uncertain that the findings could be replicated with individuals with differential diagnoses of ASD, i.e., Asperger's Syndrome or PDD-NOS.

The video model, while validated by a panel of experts, resulted in several limitations of the investigation. The actors and actresses in the video models were unfamiliar to the PPs in the investigation and some appeared significantly older than the PPs. According to researchers in the field of video modeling (Bellini & Akullian, 2007;

Delano, 2007; Sherer et al., 2001), individuals with ASD relate better to actors and actresses in video models that most closely resemble the individuals with ASD. Because the video model was not evaluated for use with students with ASD prior to its use in this investigation, it presented a limitation. However, the video model was reviewed and validated by an expert panel including one of the authors of the *Skillstreaming* curriculum. The video model was reviewed in terms not only of the validity of its portrayal of the *Skillstreaming* curriculum but also on its effectiveness as an instructional tool. Additionally, the actors in the video model were not ethnically representative of the PPs. Researchers have indicated that students with ASD relate more closely to models that are similar in appearance (Bellini & Akullian, 2007).

The pairing of the PMs was a limitation of this investigation as the pairings were based upon class schedules rather than similarities (Fuchs & Fuchs, 2005; US DOE, 2007). The inability to be more selective in matching the PPs with PMs was a limitation of this investigation. A total of three PMs participated in this investigation. Peer mentors were matched with PPs according to the periods of the school day in which both the PM and PP were scheduled to be in the resource room setting. Rather than match PPs with PMs who may have shared common interests, the selection was based upon availability. Additionally, PMs were not matched with PPs according to their ethnic backgrounds, a potential concern for the peer mentoring pair. This limitation was imposed due to scheduling restrictions.

The general educators instructing the inclusion classes of the PPs were a limitation to the study in that the researcher was not in control of either the teacher or the

inclusion class the PPs attended. The schedule of inclusion classes for the PPs had been arranged at the beginning of the year by the special educator and guidance staff at the selected middle school. Each of the PPs attended different general education classes with different teachers and different peer groups. The researcher was not able to control for the activities taking place during the class, the perceptions and opinions of the classroom teacher regarding including children with ASD, or the peer groups present in the classroom, all of which could impact the potential for replication of the intervention. Furthermore, there were great differences in the amount of structure and support each participant experienced in his/her educational setting. For example, the Health / Physical Education class that PP3 participated in was highly structured with well-defined expectations and procedures. In contrast, the science class that PP1 participated in was largely constructivist in nature without as much predictability and structure as the Health/Physical Education classes.

There were also some limitations related to the *Skillstreaming* materials. The effectiveness of developed social skills curricula, such as *Skillstreaming*, has not been adequately investigated as a strategy for students with ASD (Carter, Cushing, Clark, & Kennedy, 2005; Jones & Schwartz, 2004). Furthermore, the Parent and Teacher *Skillstreaming* Checklists do not have validity and reliability measures reported in the literature. However, additional measures, i.e., the Social Responsiveness Scale, were used to assess the social skills of the PPs.

Final Conclusions

The positive results of this intervention have increased the research base for social skills instruction for students with ASD in middle school and provided a beginning framework for future research in developing social skills interventions. As more and more students are diagnosed with ASD and these students reach middle school age, structured social skills interventions like the one used in this investigation are needed. These types of tools that incorporate appealing technology, repetition of visual stimuli, and role modeling with typical peers can increase the levels of social skills functioning in students with ASD. These social skills are essential as students with ASD transition from self-contained settings to more inclusive settings. Increasing the social skills of students with ASD should benefit these individuals in all areas of their life while increasing their potential to be successful contributors to their families, schools, and communities – the ultimate goal of education for any student. As one primary participant stated,

> "Well, you know, I didn't think I needed to learn these skills. I thought watching the videos would be fun. I already knew how to do the skills. Well, you know, I guess I am a little better at them now. Yeah, it was okay. I'd do it again".

APPENDIX A
INSTITUTIONAL REVIEW BOARD LETTER OF APPROVAL

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Notice of Expedited Initial Review and Approval

From : **UCF Institutional Review Board**
FWA00000351, Exp. 5/07/10, IRB00001138

To : **Christine R Ogilvie**

Date : **December 07, 2007**

IRB Number: **SBE-07-05319**

Study Title: **The Impact of Video Modeling and Peer Mentoring of Social Skills for Middle School Students with Autism Spectrum Disorders in Inclusive Settings**

Dear Researcher:

Your research protocol noted above was approved by **expedited** review by the UCF IRB Chair on 12/6/2007. **The expiration date is 12/5/2008.** Your study was determined to be minimal risk for human subjects and expeditable per federal regulations, 45 CFR 46.110. The category for which this study qualifies as expeditable research is as follows:

6. Collection of data from voice, video, digital, or image recordings made for research purposes.

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

The IRB has approved a **consent procedure which requires participants to sign consent forms.** Use of the approved, stamped consent document(s) is required. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Subjects or their representatives must receive a copy of the consent form(s).

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

To continue this research beyond the expiration date, a Continuing Review Form must be submitted 2 – 4 weeks prior to the expiration date. Advise the IRB if you receive a subpoena for the release of this information, or if a breach of confidentiality occurs. Also report any unanticipated problems or serious adverse events (within 5 working days). Do not make changes to the protocol methodology or consent form before obtaining IRB approval. Changes can be submitted for IRB review using the Addendum/Modification Request Form. An Addendum/Modification Request Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at http://iris.research.ucf.edu .

Failure to provide a continuing review report could lead to study suspension, a loss of funding and/or publication possibilities, or reporting of noncompliance to sponsors or funding agencies. The IRB maintains the authority under 45 CFR 46.110(e) to observe or have a third party observe the consent process and the research.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Janice Turchin on 12/07/2007 04:57:12 PM EST

Janice Turchin

IRB Coordinator

APPENDIX B
SOCIAL SKILLS PROBE, CRITICAL SKILLS, AND RELATED MATERIALS

Social Skills Probe				
Participant #: _____ Completed by: _____ Date: _____				
Directions: Rate each skill on the date listed above according to what you observed for each skill for the past week overall. Circle the number of your response.				
Skill: Greeting a Peer or Teacher				
1 Almost Never	2 Seldom	3 Sometimes	4 Often	5 Almost Always
Skill: Participating in a Conversation				
1 Almost Never	2 Seldom	3 Sometimes	4 Often	5 Almost Always
Skill: Tracking the Talker				
1 Almost Never	2 Seldom	3 Sometimes	4 Often	5 Almost Always
Skill: Following Instructions				
1 Almost Never	2 Seldom	3 Sometimes	4 Often	5 Almost Always
Skill: Asking Question				
1 Almost Never	2 Seldom	3 Sometimes	4 Often	5 Almost Always

Steps for the Five Critical Social Skills for Inclusion	
Introducing Yourself (Greeting a Peer / Teacher)	1. Greet the other person. 2. Make small talk. 3. Decide if the other person is listening.
Participating in a Conversation	1. Say what you want to say. 2. Ask the other person what he/she thinks. 3. Listen to what the other person says. 4. Say what you think. 5. Make a closing remark.
Listening (Tracking the Talker)	1. Look at the person who is talking. 2. Think about what is being said. 3. Wait your turn to talk. 4. Say what you want to say.
Following Instructions	1. Listen carefully while you are being told what to do. 2. Ask questions about anything you don't understand. 3. Decide if you want to follow the instructions and let the other person know your decision. 4. Repeat the instructions to yourself. 5. Do what you have been asked to do.
Asking A Question	1. Decide what you want to ask. 2. Decide whom to ask. 3. Think about different ways to ask your question and pick one way. 4. Pick the right time and place to ask your question. 5. Ask your question.

OPERATIONAL DEFINITIONS OF CRITICAL SOCIAL SKILLS

Greeting a Peer or Teacher: Goldstein and McGinnis (1997) utilize the phrase "Introducing Yourself" to describe greeting a peer or teacher. For the purpose of this investigation, the steps outlined by Goldstein and McGinnis for Introducing Yourself were utilized to demonstrate the skills of greeting a peer or teacher. Because it is not necessary to re-introduce oneself every time you encounter a peer or teacher, the focus of this skill was to instruct the PPs on how to greet a peer or teacher at any time in a friendly way. For example, when the PP walks into a classroom at the beginning of class, he/she was instructed to look at a peer/teacher, say hello, and ask a question that reflects interest in the other person. Low-level demonstration of this skill involved ignoring a peer or teacher (a non-demonstration of the skill). Mid-level demonstration of this skill involved responding to a greeting by looking at the peer or teacher without a verbal response. High-level demonstration of this skill involved initiating a greeting (saying "Hi") while maintaining eye contact and responding to a greeting while maintaining eye contact.

Participating in a Conversation: Participating in a conversation involves knowing what to say about comments that are made, when it is appropriate to give your own comments, and maintaining the topic of conversation. Low-level demonstration of this skill involved no verbal interactions with peers or teachers. Mid-level demonstration of this skill involved responding to questions or comments made by a peer or teacher with one-word responses and/or participating in one reciprocal exchange with a peer or teacher in an interaction. High-level demonstration of this skill involved responding to questions /

comments made by a peer or teacher with more than one-word responses and/or participating in at least two reciprocal exchanges with a peer or teacher in an interaction.

Tracking the Talker: Tracking the talker involved looking at anyone who is talking to them. For example, this may be a peer in a cooperative learning group or a teacher giving instructions. Data collection for this skill involved time sampling recordings regarding the amount of time when instruction was being provided that the PP was looking in the direction of the talker. Low-level demonstration of this skill involved not looking in the talker's direction and/or playing with objects in hand. Mid-level demonstration of this skill involved tracking the talker less than 50% of the instructional time. High-level demonstration of this skill involved tracking the talker more than 50% of the instructional time.

Following Directions: Following instructions involved hearing a direction, deciding on if and how to follow the direction and beginning the assigned task. For the purpose of data collection for this skill, time sampling recording was used. Low-level demonstration of this skill included self-stimulation, rocking, and/or participation in tasks other than assigned. A mid-level demonstration of this skill was engagement for less than 50% of the recorded intervals. A high-level demonstration of this skill was engagement for more than 50% of the recorded intervals.

Asking a Question: Asking a question involved not only knowing what needed to be asked but also knowledge of when to ask the question and to whom the question should be directed. Demonstration of this skill ranged from the low-level demonstration of not asking any questions or making any statements (a non-demonstration of the skill) to a mid-level of demonstration of calling out to a teacher or peer, or pointing to an object or person. High-level demonstration of this skill involved raising a hand and/or making eye contact with a teacher/peer and waiting to be acknowledged. Demonstration at high level for this skill required words rather than actions to indicate a need.

APPENDIX C
SKILLSTREAMING THE ADOLESCENT SKILLS LIST

Skillstreaming the Adolescent Skills List

Group I: Beginning Social Skills 1. Listening 2. Starting a Conversation 3. Having a Conversation 4. Asking a Question 5. Saying Thank You 6. Introducing Yourself 7. Introducing Other People 8. Giving a Compliment	*Group IV: Alternatives to Aggression* 22. Asking Permission 23. Sharing Something 24. Helping Others 25. Negotiating 26. Using Self-Control 27. Standing Up for Your Rights 28. Responding to Teasing 29. Avoiding Trouble with Others 30. Keeping Out of Fights
Group II: Advanced Social Skills 9. Asking for Help 10. Joining In 11. Giving Instructions 12. Following Instructions 13. Apologizing 14. Convincing Others	*Group V: Skills for Dealing with Stress* 31. Making a Complaint 32. Answering a Complaint 33. Being a Good Sport 34. Dealing with Embarrassment 35. Dealing with Being Left Out 36. Standing Up for a Friend 37. Responding to Persuasion 38. Responding to Failure 39. Dealing with Contradictory Messages 40. Dealing with an Accusation 41. Getting Ready for a Difficult Conversation 42. Dealing with Group Pressure
Group III: Skills for Dealing with Others 15. Knowing Your Feelings 16. Expressing Your Feelings 17. Understanding the Feelings of Others 18. Dealing with Someone Else's Anger 19. Expressing Affection 20. Dealing with Fear 21. Rewarding Yourself	*Group VI: Planning Skills* 43. Deciding on Something to Do 44. Deciding What Caused a Problem 45. Setting a Goal 46. Deciding on Your Abilities 47. Gathering Information 48. Arranging Problems by Importance 49. Making a Decision 50. Concentrating on a Task

APPENDIX D
VIDEO MODEL STORYBOARD

Video Story Board Chrissy Ogilvie
Fall 2007

Cast

- Student 1: Ben
- Student 2: Lana
- Student 3: Annika
- Student 4: Jill
- Student 5: Nate
- Student 6: Frank
- Student 7: Carla
- Student 8: Jessica
- Student 9: Emily
- Student 10: Brian

All Skills – Beginning of Class Scenario

Introduction

– (As narrator is talking, screen shots from the videos appear on the screen.)

• Narrator: Sometimes it's hard to know how to greet a friend you see in the classroom or what to do when you have a question in class. At other times, you may need to know how to participate in a conversation, how to pay attention when the teacher is giving directions, and how to follow those directions. The videos you are going to see give you examples of five social skills that may make being in middle school a little easier.

– (5 minute scenario fades in; no sound)

• Narrator: Here we are at the beginning of class at Lawrence Rose Middle School. Let's watch as the students come into the classroom.

Greeting a Peer Example 1

– Students walk into a classroom. The camera focuses first on Students 1 & 2 while the rest of the students "talk" silently to each other in the background.

• Student 1: Hey Ben!

• Student 2: Hi Lana. How're ya?

• Student 1: Not bad thanks. (holds up a piece of paper) How did you do on this homework assignment?

• Student 2: It was kinda hard but I got it done.

– camera focuses on Students 3 & 4; rest of the students continue "talking"

Greeting a Peer Example 2

– camera focuses on Students 3 & 4; rest of the students continue "talking"

• Student 3: Hi Jill! Did you see what happened at lunch today?

• Student 4: Hiya Annika. You mean the big crash? (laughs)

• Student 3: Exactly. (laughs) What a mess! I can't figure out how all three of them collided!

• Student 4: I'm just glad we didn't have to clean up all that spaghetti! (laughs)

– Camera focuses on Students 5, 6, & 7

Greeting a Peer Example 3

– Camera focuses on Students 5, 6, & 7; rest of the students continue "talking"

• Student 5: What's up, Frank? Doing anything for the weekend?

• Student 6: Not much Nate. How about you Carla?

• Student 7: Oh yeah. I'm going to Universal this weekend with my cousins. Can't wait to ride the roller coasters.

• Student 5: That sounds awesome. Oh hey, looks like class is starting.

– Camera focuses on Students 8 & 9; all students move to their seats and prepare for class to start

Participating in a Conversation Example 1

– Camera focuses on Students 8 & 9; rest of the students continue “talking”
• Student 8: Hey Emily! I just got five free downloads for my iPod. What songs should I pick?
• Student 9: Hmmm, I would download something by Pink and maybe some High School Musical songs.
• Student 8: Cool. I really like Pink too.
• Student 9: Yeah, I even have her as my ring tone.
– Camera focuses on Students 1 & 10

Participating in a Conversation Example 2

– Camera focuses on Students 1 & 10; rest of the students continue “talking”
• Student 10: Hi Ben! Are you going to the football game on Friday? We’re going to bring it on!
• Student 1: Hey, what’s up Brian. Yeah I’m going. Who do you think is going to win?
• Student 10: Us! Of course!
• Student 1: Yeah, we’re having a great season. Four and one so far.
– Camera focuses on Students 2, 3 & 6

Participating in a Conversation Example 3

– Camera focuses on Students 2, 3, & 6; rest of the students continue “talking”
• Student 2: Hey Annika. I just heard Brian and Ben talking about going to the game. Do you want to go? Maybe Frank will want to go too.
• Student 3: I have to see if my parents will let me, Lana. Sometimes they can be so stupid. Maybe if they know Frank is going...
• Student 6: Maybe if they know Frank is going where? (laughs)
• Student 1: We’re talking about going to the football game on Friday. Do you want to go with us?
• Student 6: Sounds like fun. I’ll meet you guys there.
– Camera fades

Tracking the Teacher

– Students sit at their desks and take belongings out of their backpacks; teacher stands in front of the room and begins to talk about the day’s lesson. As the teacher talks, she walks across the front of the room and between the desks.
– Students “track the teacher” – follow her with their eyes and move their hands/bodies to be facing the teacher
• Teacher: Ok everyone! Let’s get started. (waits for students to settle) I told you the other day that we’d be starting a unit on roller coasters today. (students yell “yeah” “all right” etc.)

Following Directions

–When teacher returns to the front of the classroom, she gives the class instructions. The assignment will be to write down everything they know and everything they want to know about roller coasters.
– On the board in front of the class is a drawing of a piece of paper with a line down the middle and the top of each column labeled “KNOW” and “WANT TO KNOW”
• Teacher: Well before we start talking about all that fun stuff, please make sure you have a piece of paper and something to write with. (waits for students to get out a piece of paper and pen/pencil)
• Teacher: Everyone all set? (looks around class) Ok then, take your paper and fold it in half the hotdog way. (Teacher demonstrates folding the paper in half the long way; students imitate her actions)
• Teacher: On the top of your paper, label each column the way I have in this picture on the board (points to drawing of the paper on the board; students begin to write on their papers)
• Teacher: One column says “know” and the other column says “want to know”. Put your pencils down and look at me when you are finished. (students finish the task and look up at her) What do you think you will write in the first column Frank?

• Student 6: Everything I know about roller coasters?
• Teacher: Exactly. And what about the other column Jill? What do you think will go there?
• Student 4: Everything I want to know about roller coasters?
• Teacher: Excellent. Can someone tell me one more time what goes in each column?
– (students raise their hands; teacher calls on Student 1)
• Student 1: You write what you know in the first column and what you want to know in the second one.
• Teacher: Nice job Ben. Does anyone have any questions? (waits) Ok then get started. Let me know if you have any questions.
– (students start writing)

Asking a Question

–When the teacher finishes giving the instructions, the students begin writing.
– After 30 seconds of writing, Student 8 raises her hand to ask a question.
• Student 8: (raises her hand and waits to be called on)
• Teacher: Yes, Jessica, what's up?
• Student 8: What happens if I have more in one column than the other?
• Teacher: No problem. Some people will know a lot about roller coasters and other people will have more questions about roller coasters. Try to think of anything you can about roller coasters and what you want to know about them.
• Student 8: Yeah thanks. (begins writing)

Individual Skills

Skillstreaming Steps: Greeting a Peer

1. Greet the other person.
2. Make small talk.
3. Decide if the other person is listening.

Greeting a Peer Example 1

– Camera focuses on Students 1 & 2
• Narrator: Before class starts is a good time to say hi to a classmate. First, make sure the person is not busy and say hello.
• Student 1: Hey Ben! (freeze frame)
• Narrator: Lana looks at Ben before she says hello to make sure he is not busy. (unfreeze)
• Student 2: Hi Lana. How're ya? (freeze frame)
• Narrator: Ben responds to Lana and then asks her a question to show he is listening to her and interested in talking. (unfreeze)
• Student 1: Not bad thanks. (holds up a piece of paper) How did you do on this homework assignment? (freeze frame)
• Narrator: Lana responds to Ben and asks him a question. These kinds of questions are called "small talk". (unfreeze)
• Student 2: It was kinda hard but I got it done. (smiles and camera shot fades)
• Narrator: Ben and Lana demonstrated how to greet a peer. You can also use these steps to greet a teacher or other adult.

Greeting a Peer Example 2

– Camera focuses on Students 3 & 4
• Narrator: Before class starts is a good time to say hi to a classmate. First, make sure the person is not busy and say hello.
• Student 3: Hi Jill! Did you see what happened at lunch today?
• Narrator: Annika looks at Jill before she says hello to make sure she is not busy. (unfreeze)
• Student 4: Hiya Annika. You mean the big crash? (laughs)
• Narrator: Jill responds to Annika and then asks her a question to show she is listening to her and interested in talking. (unfreeze)

• Student 3: Exactly. (laughs) What a mess! I can't figure out how all three of them collided!
• Narrator: Annika responds to Jill and asks her a question. These kinds of questions are called "small talk". (unfreeze)
• Student 4: I'm just glad we didn't have to clean up all that spaghetti!
• Narrator: Annika and Jill demonstrated how to greet a peer. You can also use these steps to greet a teacher or other adult.

Greeting a Peer Example 3

– Camera focuses on Students 3 & 4
• Narrator: Before class starts is a good time to say hi to a classmate. First, make sure the person is not busy and say hello.
• Student 5: What's up, Frank? Doing anything for the weekend?
• Narrator: Nate looks at Frank before he says hello to make sure he is not busy. (unfreeze)
• Student 6: Not much Nate. How about you Carla?
• Narrator: Frank responds to Nate and then asks Carla a question to show her she is welcome to join the conversation. (unfreeze)
• Student 7: Oh yeah. I'm going to Universal this weekend with my cousins. Can't wait to ride the roller coasters.
• Narrator: Carla responds to Frank and tells both friends about her plans. These kinds of conversations are called "small talk". (unfreeze)
• Student 5: That sounds awesome. Oh hey, looks like class is starting.
• Narrator: Nate adds his comments to the conversation to show he is listening. Nate, Frank, and Carla demonstrated how to greet a peer. You can also use these steps to greet a teacher or other adult.

Skillstreaming Steps: Participating in a Conversation

1. Say what you want to say.
2. Ask the other person what he/she thinks.
3. Listen to what the other person says.
4. Say what you think.
5. Make a closing remark.

Participating in a Conversation Example 1

– camera focuses on Students 8 & 9; rest of the students continue "talking"
• Student 8: Hey Emily! I just got five free downloads for my iPod. What songs should I pick?
• Narrator: Jessica greets Emily, tells her about something interesting, and then asks Emily's opinion about it.
• Student 9: Hmmm, I would download something by Pink and maybe some High School Musical songs.
• Narrator: Emily gives Jessica her opinion to show she is interested in talking to her.
• Student 8: Cool. I really like Pink too.
• Narrator: Jessica makes a closing remark to complete the conversation.
• Student 9: Yeah, I even have her as my ringbone.
– camera focuses on Students 1 & 10

Participating in a Conversation Example 2

– camera focuses on Students 1 & 10; rest of the students continue "talking"
• Student 10: Hi Ben! Are you going to the football game on Friday? We're going to bring it on!
• Narrator: Brian greets Ben, tells him about something interesting, and then asks Ben's opinion about it.
• Student 1: Hey, what's up Brian. Yeah I'm going. Who do you think is going to win?
• Narrator: Ben gives Brian his opinion to show he is interested in talking to him.
• Student 10: Us! Of course!
• Narrator: Brian makes a closing remark to complete the conversation.

• Student 1: Yeah, we're having a great season. Four and one so far.
– camera focuses on Students 2, 3 & 6

Participating in a Conversation Example 3

– camera focuses on Students 2, 3, & 6; rest of the students continue "talking"
• Student 2: Hey Annika. I just heard Brian and Ben talking about going to the game. Do you want to go? Maybe Frank will want to go too.
• Narrator: Lana greets Annika, tells her about something interesting, and then asks Annika's opinion about it.
• Student 3: I have to see if my parents will let me, Lana. Sometimes they can be so stupid. Maybe if they know Frank is going...
• Narrator: Annika gives Lana her opinion to show she is interested in talking to her and then mentions Frank's name to invite him into the conversation.
• Student 6: Maybe if they know Frank is going where? (laughs)
• Narrator: When Frank heard his name, he knew it was a clue that he could participate in the conversation.
• Student 1: We're talking about going to the football game on Friday. Do you want to go with us?
• Narrator: Ben makes a closing remark to complete the conversation.
• Student 6: Sounds like fun. I'll meet you guys there.
• Narrator: Frank makes a closing remark to complete the conversation.
– camera fades

Skillstreaming Steps: Tracking the Teacher

1. Look at the person who is talking.
2. Think about what is being said.
3. Wait your turn to talk.
4. Say what you want to say (if you need to)

Tracking the Teacher

– students sit at their desks and take belongings out of their backpacks; teacher stands in front of the room and begins to talk about the day's lesson. As the teacher talks, she walks across the front of the room and between the desks.
– students "track the teacher" – follow her with their eyes and move their hands/bodies to be facing the teacher
• Teacher: Ok everyone! Let's get started. (waits for students to settle) I told you the other day that we'd be starting a unit on roller coasters today. (students yell "yeah" "all right" etc.)

Skillstreaming Steps: Following Directions

1. Listen carefully while you are being told what to do.
2. Ask questions about anything you don't understand.
3. Decide if you want to follow the instructions and let the other person know your decision.
4. Repeat the instructions to yourself.
5. Do what you have been asked to do.

Following Directions

–When teacher returns to the front of the classroom, she gives the class instructions. The assignment will be to write down everything they know and everything they want to know about roller coasters.
– On the board in front of the class is a drawing of a piece of paper with a line down the middle and the top of each column labeled "KNOW" and "WANT TO KNOW"
• Teacher: Well before we start talking about all that fun stuff, please make sure you have a piece of paper and something to write with. (waits for students to get out a piece of paper and pen/pencil)

• Narrator: The students show they are following directions by taking out the materials the teacher asks for.
• Teacher: Everyone all set? (looks around class) Ok then, take your paper and fold it in half the hotdog way. (teacher demonstrates folding the paper in half the long way; students imitate her actions)
• Narrator: The students show they are following directions by folding their papers like the teacher's paper.
• Teacher: On the top of your paper, label each column the way I have in this picture on the board (points to drawing of the paper on the board; students begin to write on their papers)
• Narrator: The students show they are following directions by labeling the columns as directed.
• Teacher: One column says "know" and the other column says "want to know". Put your pencils down and look at me when you are finished. (students finish the task and look up ather) What do you think you will write in the first column Frank?
• Student 6: Everything I know about roller coasters?
• Teacher: Exactly. And what about the other column Jill? What do you think will go there?
• Student 4: Everything I want to know about roller coasters?
• Teacher: Excellent. Can someone tell me one more time what goes in each column?
– (students raise their hands; teacher calls on Student 1)
• Student 1: You write what you know in the first column and what you want to know in the second one.
• Narrator: Ben repeats the directions he heard showing that he understands them.
• Teacher: Nice job Ben. Does anyone have any questions? (waits) Ok then get started. Let me know if you have any questions.
– (students start writing)

Skillstreaming Steps: Asking a Question

1. Decide what you want to ask.
2. Decide whom to ask.
3. Think about different ways to ask your question and pick one way.
4. Pick the right time and place to ask your question.
5. Ask your question.

Asking a Question

–When the teacher finishes giving the instructions, the students begin writing.
– After 30 seconds of writing, Student 8 raises her hand to ask a question.
• Student 8: (raises her hand and waits to be called on)
• Narrator: Jessica decided she had a question so she raised her hand and waited to be called upon.
• Teacher: Yes, Jessica, what's up?
• Student 8: What happens if I have more in one column than the other?
• Narrator: Jessica asks her question and waits for a response.
• Teacher: No problem. Some people will know a lot about roller coasters and other people will have more questions about roller coasters. Try to think of anything you can about roller coasters and what you want to know about them.
• Student 8: Yeah thanks. (begins writing)

APPENDIX E
DEMOGRAPHIC INFORMATION: VIDEO MODEL ACTORS

Demographic Information for Video Model Actors

	Ethnicity	Age	Gender	Grade
Actor 1	Black	7	Female	2
Actor 2	Black	8	Female	3
Actor 3	Black	11	Male	5
Actor 4	White	12	Male	6
Actor 5	White	12	Male	7
Actor 6	Hispanic	12	Male	6
Actor 7	White	13	Female	8
Actor 8	White	13	Female	8
Actor 9	White	13	Female	8
Actor 10	White	13	Female	8
Actor 11	White	15	Female	9
Actor 12	White	15	Female	9
Actor 13	White	15	Male	9

APPENDIX F
DATA RECORDING FORM

Data Recording Form						
Participant Initials: _____ Date: _____ Observer Initials: _____ Setting: _____						
Greeting	Partic. Conv.	Ask Quest.	Tracking /Talker (1 min. intervals)		Following Directions (1 min. intervals)	
			1		1	
			2		2	
			3		3	
			4		4	
			5		5	
			6		6	
			7		7	
			8		8	
			9		9	
			10		10	
			11		11	
			12		12	
			13		13	
			14		14	
			15		15	

APPENDIX G
VIDEO PANEL VALIDATION PROTOCOL

Video Model Validation Panel Protocol

1. What were the strengths of the video model?
2. Did the video model demonstrate clear steps for each of the five social skills?
3. Were the actors representative of typical middle school-aged students?
4. Did the ethnicities of the actors represent a sufficient level of diversity?
5. What were the limitations of the video model?
6. What steps did you observe for each skill?

APPENDIX H
INTERVENTION FIDELITY CHECKLISTS: DAYS ONE-THREE

Intervention Day One Fidelity Checklist

_____ The PPs and PMs sit at tables with each PM sitting next to the PP with whom they are working.
_____ There is a TV with a DVD player in view for all of the participants.
_____ Special educator puts the DVD into the DVD player and ensures that the DVD player is functional.
_____ Special Educator: I am going to place a folder in front of each of the PMs. Please do not open the folders until I ask you to open them.
_____ Special educator places a folder in front of each of the PMs.
_____ Special Educator: Today we are going to watch a video. In the video, you will see middle school students interacting with each other. After we watch the video, we are going to talk about what you saw.
_____ Special educator presses play on the DVD player.
_____ All PPs and PMs watch the video together.
_____ Special Educator: In the video, you saw middle school students walking into class and the teacher starting the class. We are going to talk about three different ways the students interacted with each other and the teacher. The first way the students interacted was that they greeted each other. The students looked at each other, said hello, and asked each other a friendly question. Please open the folders in front of you and take out the sheet labeled "Greeting a Peer or Teacher".
_____ Special Educator pauses while PMs retrieve the paper from the folder.
_____ Special Educator: You are going to work with your PM to review the steps of the skill "Greeting a Peer or Teacher". Please read the steps of the skill together and talk about what you saw in the video. Are there any questions?
_____ Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should talk about.
_____ Special Educator: If there are no further questions, please read and talk about the steps of the skill. You will have five minutes to talk about the skill.
_____ Special educator pauses for five minutes.
_____ Special Educator: Another way the students interacted was having a conversation. One student asked another student about what she did over the weekend. The other student answered the question and asked what the other student had done over the weekend. Now I would like you to take the sheet labeled "Participating in a Conversation" from your folder.
_____ Special Educator pauses while PMs retrieve the paper from the folder.
_____ Special Educator: You are going to work with your PM to review the steps of the skill "Participating in a Conversation". Please read the steps of the skill together and talk about what you saw in the video. Are there any questions?
_____ Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should talk about.
_____ Special Educator: If there are no further questions, please read and talk about the steps of the skill. You will have five minutes to talk about the skill.
_____ Special educator pauses for five minutes.
_____ Special Educator: Another way the students interacted was by asking questions. One student decided she had a question about what her friend had done over the weekend. She waited for an appropriate time to ask and then asked her friend the question. Now I would like you to take the sheet labeled "Asking a Question" from your folder.
_____ Special Educator pauses while PMs retrieve the paper from the folder.
_____ Special Educator: You are going to work with your PM to review the steps of the skill "Asking a Question". Please read the steps of the skill together and talk about what you saw in the video. Are

there any questions?
_____ Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should talk about.
_____ Special Educator: If there are no further questions, please read and talk about the steps of the skill. You will have five minutes to talk about the skill.
_____ Special educator pauses for five minutes.
_____ Special Educator: Thank you for reading and talking about the skills we saw in the video. The next time we are together, we will talk about two new skills. You may return to your classes.
_____ Special educator collects the folders.

Intervention Day Two Fidelity Checklist

_____ The PPs and PMs sit at tables with each PM sitting next to the PP with whom they are working.
_____ There is a TV with a DVD player in view for all of the participants.
_____ Special educator puts the DVD into the DVD player and ensures that the DVD player is functional.
_____ **Special Educator:** I am going to place a folder in front of each of the PMs. Please do not open the folders until I ask you to open them.
_____ Special educator places a folder in front of each of the PMs.
_____ **Special Educator:** Today we are going to watch a video. In the video, you will see middle school students interacting with each other. After we watch the video, we are going to talk about what you saw. You may notice this is the same video we watched the other day.
_____ Special educator presses play on the DVD player.
_____ All PPs and PMs watch the video together.
_____ **Special Educator:** In the video, you saw middle school students walking into class and the teacher starting the class. We are going to talk about two more ways the students interacted with each other and the teacher. One way the students interacted was that they "Tracked the Talker". Tracking the talker means that you are looking at whoever is talking to you. Tracking the talker is important because it means you are paying attention to what s/he is saying. The students looked at the teacher as she was giving instructions. When the teacher moved around the classroom, the students watched the teacher and turned to face her. Please open the folder in front of you and take out the sheet labeled "Tracking the Talker".
_____ Special Educator pauses while PMs retrieve the paper from the folder.
_____ **Special Educator:** You are going to work with your PM to review the steps of the skill "Tracking the Talker". Please read the steps of the skill together and talk about what you saw in the video. Are there any questions?
_____ Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should talk about.
_____ **Special Educator:** If there are no further questions, please read and talk about the steps of the skill. You will have five minutes to talk about the skill.
_____ Special educator pauses for five minutes.
_____ **Special Educator:** Another way the students interacted was "Following Instructions". After the teacher gave the directions to write a paragraph about what the students did over the weekend, the student got out her pencil and began writing on the paper. Now I would like you to take the sheet labeled "Following Instructions" from your folder.
_____ Special Educator pauses while PMs retrieve the paper from folder.
_____ **Special Educator:** You are going to work with your PM to review the steps of the skill "Following Instructions". Please read the steps of the skill together and talk about what you saw in the video. Are there any questions?
_____ Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should talk about.
_____ **Special Educator:** If there are no further questions, please read and talk about the steps of the skill. You will have five minutes to talk about the skill.
_____ Special educator pauses for five minutes.
_____ **Special Educator:** Thank you for reading and talking about the skills we saw in the video. The next time we are together, we will practice the skills. You may return to your classes.
_____ Special educator collects the folders.

Intervention Day Three Fidelity Checklist

_____ The PPs and PMs sit at tables with each PM sitting next to the PP with whom they are working.
_____ There is a TV with a DVD player in view for all of the participants.
_____ Special educator puts the DVD into the DVD player and ensures that the DVD player is functional.
_____ **Special Educator:** I am going to place a folder in front of each of the PMs. Please do not open the folders until I ask you to open them.
_____ Special educator places a folder in front of each of the PMs.
_____ **Special Educator:** Today we are going to watch a video. In the video, you will see middle school students interacting with each other. After we watch the video, you are going to practice the skills you saw in the video. You may notice this is the same video we watched the other day.
_____ Special educator presses play on the DVD player.
_____ All PPs and PMs watch the video together.
_____ **Special Educator:** In the video, you saw middle school students walking into class and the teacher starting the class. Today, you are going to role play. Role playing is a way to practice new skills. Please open the folders in front of you.
_____ Special Educator pauses while PMs open the folders.
_____ **Special Educator:** You are going to work with your PM to role play each of the skills. Please read the steps of the skill together and then practice the skill by role playing. Are there any questions?
_____ Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should role play.
_____ **Special Educator:** If there are no further questions, please read and talk about the steps of the skills and then role play each of the skills. You will have the rest of the class period to role play the skills. Please let me know if you have any questions.
_____ Special educator pauses for the remainder of the class period. The special educator may observe the role plays but may not participate or given any input about any of the role plays. The special educator may refer the participants back to the video they saw.
_____ **Special Educator:** Thank you for role playing the skills we saw in the video. You may return to your classes.
_____ Special educator collects the folders.

APPENDIX I
INTERVENTION SCRIPTS: DAYS ONE-THREE

Intervention Script for the Special Educator: Day One

(The PPs and PMs sit at tables with each PM sitting next to the PP with whom they are working. There is a TV with a DVD player in view for all of the participants.)

(Special educator puts the DVD into the DVD player and ensures that the DVD player is functional.)

Special Educator: I am going to place a folder in front of each of the PMs. Please do not open the folders until I ask you to open them.

(Special educator places a folder in front of each of the PMs.)

Special Educator: Today we are going to watch a video. In the video, you will see middle school students interacting with each other. After we watch the video, we are going to talk about what you saw.

(Special educator presses play on the DVD player.)

(All PPs and PMs watch the video together.)

Special Educator: In the video, you saw middle school students walking into class and the teacher starting the class. We are going to talk about three different ways the students interacted with each other and the teacher. The first way the students interacted was that they greeted each other. The students looked at each other, said hello, and asked each other a friendly question. Please open the folders in front of you and take out the sheet labeled "Greeting a Peer or Teacher".

(Special Educator pauses while PMs retrieve the paper from the folder.)

Special Educator: You are going to work with your PM to review the steps of the skill "Greeting a Peer or Teacher". Please read the steps of the skill together and talk about what you saw in the video. Are there any questions?

(Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should talk about.)

Special Educator: If there are no further questions, please read and talk about the steps of the skill. You will have five minutes to talk about the skill.

(Special educator pauses for five minutes.)

Special Educator: Another way the students interacted was having a conversation. One student asked another student about what she did over the weekend. The other student answered the question and asked what the other student had done over the weekend. Now I would like you to take the sheet labeled "Participating in a Conversation" from your folder.

(Special Educator pauses while PMs retrieve the paper from the folder.)

Special Educator: You are going to work with your PM to review the steps of the skill "Participating in a Conversation". Please read the steps of the skill together and talk about what you saw in the video. Are there any questions?

(Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should talk about.)

Special Educator: If there are no further questions, please read and talk about the steps of the skill. You will have five minutes to talk about the skill.

(Special educator pauses for five minutes.)

Special Educator: Another way the students interacted was by asking questions. One student decided she had a question about what her friend had done over the weekend. She waited for an appropriate time to ask and then asked her friend the question. Now I would like you to take the sheet labeled "Asking a Question" from your folder.

(Special Educator pauses while PMs retrieve the paper from the folder.)

Special Educator: You are going to work with your PM to review the steps of the skill "Asking a Question". Please read the steps of the skill together and talk about what you saw in the video. Are there any questions?

(Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should talk about.)

Special Educator: If there are no further questions, please read and talk about the steps of the skill. You will have five minutes to talk about the skill.

(Special educator pauses for five minutes)

Special Educator: Thank you for reading and talking about the skills we saw in the video. The next time we are together, we will talk about two new skills. You may return to your classes.
Special educator collects the folders.)

Intervention Script for the Special Educator: Day Two

(The PPs and PMs sit at tables with each PM sitting next to the PP with whom they are working. There is a TV with a DVD player in view for all of the participants.)
(Special educator puts the DVD into the DVD player and ensures that the DVD player is functional.)
Special Educator: I am going to place a folder in front of each of the PMs. Please do not open the folders until I ask you to open them.
(Special educator places a folder in front of each of the PMs.)
Special Educator: Today we are going to watch a video. In the video, you will see middle school students interacting with each other. After we watch the video, we are going to talk about what you saw. You may notice this is the same video we watched the other day.
(Special educator presses play on the DVD player.)
(All PPs and PMs watch the video together.)
Special Educator: In the video, you saw middle school students walking into class and the teacher starting the class. We are going to talk about two more ways the students interacted with each other and the teacher. One way the students interacted was that they "Tracked the Talker". Tracking the talker means that you are looking at the teacher when s/he is talking. Tracking the talker is important because it means you are paying attention to what s/he is saying. The students looked at the teacher as she was giving instructions. When the teacher moved around the classroom, the students watched the teacher and turned to face her. Please open the folder in front of you and take out the sheet labeled "Tracking the Talker".
(Special Educator pauses while PMs retrieve the paper from the folder.)
Special Educator: You are going to work with your PM to review the steps of the skill "Tracking the Talker". Please read the steps of the skill together and talk about what you saw in the video. Are there any questions?
(Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should talk about.)
Special Educator: If there are no further questions, please read and talk about the steps of the skill. You will have five minutes to talk about the skill.
(Special educator pauses for five minutes.)
Special Educator: Another way the students interacted was "Following Instructions". After the teacher gave the directions to write a paragraph about what the students did over the weekend, the student got out her pencil and began writing on the paper. Now I would like you to take the sheet labeled "Following Instructions" from your folder.
(Special Educator pauses while PMs retrieve the paper from the folder.)
Special Educator: You are going to work with your PM to review the steps of the skill "Following Instructions". Please read the steps of the skill together and talk about what you saw in the video. Are there any questions?
(Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should talk about.)
Special Educator: If there are no further questions, please read and talk about the steps of the skill. You will have five minutes to talk about the skill.
(Special educator pauses for five minutes.)
Special Educator: Thank you for reading and talking about the skills we saw in the video. The next time we are together, we will practice the skills. You may return to your classes.
(Special educator collects the folders.)

Intervention Script for the special Educator: Day Three

(The PPs and PMs sit at tables with each PM sitting next to the PP with whom they are working. There is a TV with a DVD player in view for all of the participants.)
(Special educator puts the DVD into the DVD player and ensures that the DVD player is functional.)
Special Educator: I am going to place a folder in front of each of the PMs. Please do not open the folders until I ask you to open them.
(Special educator places a folder in front of each of the PMs.)
Special Educator: Today we are going to watch a video. In the video, you will see middle school students interacting with each other. After we watch the video, you are going to practice the skills you saw in the video. You may notice this is the same video we watched the other day.
(Special educator presses play on the DVD player.)
(All PPs and PMs watch the video together.)
Special Educator: In the video, you saw middle school students walking into class and the teacher starting the class. Today, you are going to role play. Role playing is a way to practice new skills. Please open the folders in front of you.
(Special Educator pauses while PMs open the folders.)
Special Educator: You are going to work with your PM to role play each of the skills. Please read the steps of the skill together and then practice the skill by role playing. Are there any questions?
(Special educator pauses for questions. Special educator can answer questions regarding the directions given. Special educator may not answer questions about what the participants should role play.)
Special Educator: If there are no further questions, please read and talk about the steps of the skills and then role play each of the skills. You will have the rest of the class period to role play the skills. Please let me know if you have any questions.
(Special educator pauses for the remainder of the class period. The special educator may observe the role plays but may not participate or given any input about any of the role plays. The special educator may refer the participants back to the video they saw.)
Special Educator: Thank you for role playing the skills we saw in the video. You may return to your classes.
(Special educator collects the folders.)

APPENDIX J
TREATMENT ENHANCEMENT SCRIPT AND FIDELITY CHECKLIST

Intervention Script for Treatment Enhancement

(The PMs sit at tables. There is a TV with a DVD player in view.)
(Special educator puts the DVD into the DVD player and ensures that the DVD player is functional.)
Special Educator: I am going to place a folder in front of each of you. Please do not open the folders until I ask you to open them.
(Special educator places a folder in front of the PM.)
Special Educator: Today we are going to watch the video that we saw "X" days/weeks ago. After we watch the video, you are going to review the steps of the skills we saw in the video.
(Special educator presses play on the DVD player.)
Special Educator: In the video, you saw middle school students walking into class and the teacher starting the class. Today, you are going to review the steps of the skills in the video. Please open the folder in front of you.
(Special Educator pauses while PM opens the folder.)
Special Educator: You can review each of the skills. Please read the steps of the skill and think about what each skill looks like. Do you have any questions? OK. Please read and think about the steps of the skills. You will have the rest of the class period. Please let me know if you have any questions.
(Special educator pauses for the remainder of the class period. The special educator may observe but may not participate or given any input about any of the discussions. The special educator may refer the participants back to the video they saw.)
Special Educator: Thank you for re-viewing the video and skill steps. You may return to your classes.
(Special educator collects the folder.)

TREATMENT ENHANCEMENT FIDELITY CHECKLIST

_____The PMs sit at tables. There is a TV with a DVD player in view.
_____ Special educator puts the DVD into the DVD player and ensures that the DVD player is functional.
_____ **Special Educator**: I am going to place a folder in front of each of you. Please do not open the folders until I ask you to open them.
_____ Special educator places a folder in front of the PM.
_____ **Special Educator**: Today we are going to watch the video that we saw "X" days/weeks ago. After we watch the video, you are going to review the steps of the skills we saw in the video.
_____ Special educator presses play on the DVD player.
_____ **Special Educator**: In the video, you saw middle school students walking into class and the teacher starting the class. Today, you are going to review the steps of the skills in the video. Please open the folder in front of you.
_____ Special Educator pauses while PM opens the folder.
_____ **Special Educator**: You can review each of the skills. Please read the steps of the skill and think about what each skill looks like. Do you have any questions? OK. Please read and think about the steps of the skills. You will have the rest of the class period. Please let me know if you have any questions.
_____ Special educator pauses for the remainder of the class period. The special educator may observe but may not participate or given any input about any of the discussions. The special educator may refer the participants back to the video they saw.
_____ **Special Educator**: Thank you for re-viewing the video and skill steps. You may return to your classes.
_____ Special educator collects the folder.

APPENDIX K
FOCUS GROUP PROTOCOL

Focus Group Protocol

Primary Participants
1. Did you like learning the social skills?
2. What did you like / not like about learning the social skills?
3. Did you like the videos you watched? What did you like / not like about the videos?
4. What did you like / not like about working with your friend to learn the skills?
Peer Mentors
1. Did you like being part of this investigation?
2. What did you like / not like about being a peer mentor?
3. What did you think about the videos you watched?
4. What do you think about helping your peers in the general education setting?
Parents of the Primary Participants
1. Has your child participated in an intervention for social skills before that utilized video modeling and peer mentoring?
2. Do you feel your child benefited from his/her participation in this investigation?
3. Can you describe any benefits you feel your child received from participating in this study?
4. Has your child participated in social skills instruction before? If so, can you please describe it?

APPENDIX L
INTERRATER DATA

INTERRATER DATA

Raters	Score	Day 1				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	1	1	0	0	0	0
Interrater PP1	1	1	0	0	0	0
Researcher PP2	4	1	1	0	1	1
Interrater PP2	3	1	0	0	1	1
Researcher PP3	5	2	1	1	1	0
Interrater PP3	4	1	1	1	1	0

Raters	Score	Day 3				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	3	1	1	0	0	1
Interrater PP1	3	1	1	0	0	1
Researcher PP2	1	1	0	0	0	0
Interrater PP2	1	0	0	0	0	0
Researcher PP3	2	0	0	1	1	1
Interrater PP3	3	0	0	1	1	1

Raters	Score	Day 6				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	1	1	0	0	0	0
Interrater PP1	1	1	0	0	0	0
Researcher PP2	2	1	1	0	0	0
Interrater PP2	2	1	1	0	0	0
Researcher PP3	1	1	0	0	0	0
Interrater PP3	2	1	1	0	0	0

Raters	Score	Day 9				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	0	0	0	0	0	0
Interrater PP1	0	0	0	0	0	0
Researcher PP2	2	1	1	0	0	0
Interrater PP2	2	1	1	0	0	0
Researcher PP3	2	1	1	0	0	0
Interrater PP3	2	1	1	0	0	0

Raters	Score	Day 12				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	1	1	0	0	0	0
Interrater PP1	1	1	0	0	0	0
Researcher PP2	1	1	0	0	0	0
Interrater PP2	1	1	0	0	0	0
Researcher PP3	0	0	0	0	0	0
Interrater PP3	0	0	0	0	0	0

Raters	Score	Day 15				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	4	1	2	0	0	1
Interrater PP1	3	1	1	0	0	1
Researcher PP2	1	1	0	0	0	0
Interrater PP2	1	0	0	0	0	0
Researcher PP3	1	1	0	0	0	0
Interrater PP3	1	1	0	0	0	0

Raters	Score	Day 17				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	5	2	1	0	0	2
Interrater PP1	5	2	1	0	0	2
Researcher PP2	3	1	1	0	0	1
Interrater PP2	3	1	1	0	0	1
Researcher PP3	1	2	1	1	1	0
Interrater PP3	1	1	1	1	1	0

Raters	Score	Day 18				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	5	2	2	0	0	1
Interrater PP1	5	1	2	0	0	1
Researcher PP2	3	1	1	0	0	1
Interrater PP2	3	1	1	0	1	0
Researcher PP3	1	1	0	0	0	0
Interrater PP3	1	1	0	0	0	0

Raters	Score	Day 21				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	6	2	2	0	0	2
Interrater PP1	5	2	1	0	0	2
Researcher PP2	5	2	2	0	0	1
Interrater PP2	4	2	2	0	0	0
Researcher PP3	1	1	0	0	0	0
Interrater PP3	1	0	0	0	0	0

Raters	Score	Day 24				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	6	2	2	0	1	1
Interrater PP1	6	2	2	0	1	1
Researcher PP2	4	1	1	0	1	1
Interrater PP2	4	1	1	0	1	1
Researcher PP3	1	1	0	0	0	0
Interrater PP3	1	0	0	0	0	0

Raters	Score	Day 26				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	5	2	1	0	1	1
Interrater PP1	5	2	1	0	1	1
Researcher PP2	4	1	1	0	1	1
Interrater PP2	4	1	1	0	1	1
Researcher PP3	1	1	0	0	0	0
Interrater PP3	1	0	0	0	0	0

Raters	Score	Day 28				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	4	1	1	0	1	1
Interrater PP1	4	1	1	0	1	1
Researcher PP2	4	1	1	0	1	1
Interrater PP2	4	1	1	0	1	1
Researcher PP3	1	1	0	0	0	0
Interrater PP3	1	1	0	0	0	0

Raters	Score	Day 30				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	4	1	1	1	0	1
Interrater PP1	4	1	1	1	0	1
Researcher PP2	5	2	2	0	1	1
Interrater PP2	4	1	2	0	1	1
Researcher PP3	2	1	1	0	0	0
Interrater PP3	2	1	1	0	0	0

Raters	Score	Day 32				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	4	1	1	0	0	2
Interrater PP1	4	1	1	0	0	2
Researcher PP2	4	1	1	0	1	1
Interrater PP2	4	1	1	0	1	1
Researcher PP3	2	1	0	0	0	0
Interrater PP3	2	1	1	0	0	0

Raters	Score	Day 34				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	4	1	1	0	1	1
Interrater PP1	4	1	1	0	1	1
Researcher PP2	4	1	1	0	1	1
Interrater PP2	4	1	1	0	1	1
Researcher PP3	2	1	0	0	0	0
Interrater PP3	2	1	0	0	0	0

Raters	Score	Day 36				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	4	2	1	0	0	1
Interrater PP1	4	2	1	0	0	1
Researcher PP2	4	1	2	0	0	1
Interrater PP2	4	1	2	0	0	1
Researcher PP3	2	1	1	0	0	0
Interrater PP3	2	1	1	0	0	0

Raters	Score	Day 39				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	4	1	1	0	1	1
Interrater PP1	4	1	1	0	1	1
Researcher PP2	4	1	1	0	1	1
Interrater PP2	4	1	1	0	1	1
Researcher PP3	2	1	1	0	0	0
Interrater PP3	2	1	1	0	0	0

Raters	Score	Day 41				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	4	1	1	0	1	1
Interrater PP1	4	1	1	0	1	1
Researcher PP2	4	1	1	0	1	1
Interrater PP2	4	1	1	0	1	1
Researcher PP3	2	1	1	0	0	0
Interrater PP3	2	1	1	0	0	0

Raters	Score	Day 43				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	4	1	0	0	0	0
Interrater PP1	4	1	0	0	0	0
Researcher PP2	4	1	1	1	0	1
Interrater PP2	4	1	1	1	0	1
Researcher PP3	2	1	1	0	0	0
Interrater PP3	2	1	1	0	0	0

Raters	Score	Day 45				
		Skill 1	Skill 2	Skill 3	Skill 4	Skill 5
Researcher PP1	4	2	1	0	0	1
Interrater PP1	4	2	1	0	0	1
Researcher PP2	4	2	1	0	0	1
Interrater PP2	4	2	1	0	0	1
Researcher PP3	2	1	1	0	0	0
Interrater PP3	2	1	1	0	0	0

Note:
Skill 1: Greeting a Peer or Teacher
Skill 2: Participating in a Conversation
Skill 3: Asking a Question
Skill 4: Following Directions
Skill 5: Tracking the Talker

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