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The Use of the Social Skills Module Training to Teach Appropriate Communication Skills to a Student with Autism

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THE USE OF THE SOCIAL SKILLS MODULE TRAINING TO TEACH APPROPRIATE COMMUNICATION SKILLS TO A STUDENT WITH AUTISM

A Masters Thesis

Presented to

The Graduate College of

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In Partial Fulfillment

Of the Requirements for the Degree

Master of Science in Education, Special Education

By

Mark E. Simmonds III

December 2015

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Counseling, Leadership, and Special Education

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ABSTRACT

The purpose of this study was to examine the effects of video modeling (VM) in order to improve conversational skills using on-line instructional modules, self-monitoring, modeling of socially appropriate skills, and provide coaching opportunities within a controlled setting to an adolescent with Autism Spectrum Disorder (ASD). Using an ABAB Reversal design, direct observations of the participant's identified target behaviors were collected two times per week during a controlled setting. Overall, data demonstrated that the combined treatment package was effective for improving the frequency of targeted social skills for the participant, including an additional four sessions that were needed to assess acquisition of targeted skills due to the participant graduating from high school and going on a 2-week vacation. Generalization was provided to the participant throughout the study outside of the controlled setting. However, data collection was obtained and scored by the primary researcher and a trained graduate student. In addition to current research this study complements evidence that a combined intervention presented via computer may be a beneficial method for addressing social skill difficulties for individuals with ASD.

KEYWORDS: autism, self-monitoring, social skills, transition, video modeling

This abstract is approved as to form and content

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Linda Garrison-Kane, PhD: Professor
Chairperson, Advisory Committee
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In closing, I offer the prayer Psalm 23: 2-6, "The Lord is my shepherd…"

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INTRODUCTION

Autism Spectrum Disorder (ASD) a neurological disorder of unknown origin significantly affects an individual's social interaction, language and communication, and a range of activities and interest (Cotugno, 2009). All areas affected an increase in social deficits in children with ASD leading to significant difficulties in academic and social settings. Those children with ASD who are characterized by significant impairment in social interaction present a range of behaviors including an inability to understand and interpret nonverbal behaviors in others, a failure to develop age-appropriate peer relationships, a lack of interest or enjoyment in social interactions, and a lack of social or emotional reciprocity (Cotugno, 2009).

Children who are deficient in social skills lack the behavioral repertoire necessary to interact with others according to social convention, a deficit that affects both academic and social development (Rao, Beidel, & Murray, 2008). Social skill acquisition is an area in which children with ASD require extensive intervention in order to achieve functional and age appropriate skills within academic and social settings. Having poor social skills has a negative effect on children, impeding learning chances during peer interactions. Increasing social skill interactions can be achieved through intervention that encompasses numerous opportunities to interact. Koegel, Vernon, and Koegel (2009) described three students with ASD who had significant social skill deficits and disruptive behavior. The students' social skill deficits such as a deficiency of proper eye contact during conversations cause them to struggle greatly in social situations. A lack of verbal and nonverbal social initiations is particularly common in Autism, even among

individuals who have the skills to respond to others social overtures (Hume, et al. 2009). Due to the lack of these skills, students with autism miss opportunities to learn from the natural social environment on how to initiate and continue conversations which affects conversations with others within all educational and social situations.

The reauthorization of the Education of All Handicapped Children Act, called the Individuals with Disabilities Education Act (IDEA, P.L. 101-476, 1990), mandated transition services for students in special education who were 16 years of age and older (IDEA, 1990). The legislation also included eligibility criteria for persons with Autism and defined transition services as cited in Lehman et al., (2002) "…a coordinated set of activities for student, designed within an outcome-orientated process, which promotes movement from school to post school activities, including post-secondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living, and/or community participation" (p.6).

When students with ASD become adolescents and approach their adulthood, the ideal vision of transition is to complete high school, enter the workforce by determining a career path, live independently, have fulfilling relationships with peers and family members, maintain employment or attend a post-secondary institution, and participate in activities that lead to a rewarding adult life. Osborne and Reed (2008) noted that the final transition from school often left individuals with autism and their parents unsupported (cited in Browning, Osborne, & Reed, 2009). For students with disabilities, more specifically ASD, life goals such as these are difficult to obtain. Primarily deficits in social skills make age- appropriate interactions difficult for students in post-secondary

settings. While the literature supporting individuals with ASD in post-secondary settings is scarce, Gobbo and Shmulsky (2014) assert that " students with autism spectrum disorders (ASDs) are completing secondary education and entering colleges and universities at increasing rates due to a myriad of factors, including heightened awareness of learning differences at all levels of development, better identification and diagnostic processes, improved individual learning plans, and more effective special education practices" (p.13).

Autism Spectrum Disorder

People with ASD tend to have deficits in communication, such as responding inappropriately in conversations, misreading nonverbal interactions, or having difficulties building friendships with same-aged peers (American Psychiatric Association (APA), 2013). For example, Mason et al. (2012) described two students with ASD who had significant social skill deficits. The student's social skill deficits caused them to struggle greatly in social situations such as: recognizing nonverbal cues, eye contact and a fixation on topics of own interest during conversations. In addition, people with ASD may be overly dependent on routines, highly sensitive to changes in their environment, or intensely focused on inappropriate items (APA, 2013). Historically researchers such as Rimland (1964) noted that children with autism have extreme difficulty relating new stimuli to past experiences due to a highly specific memory and the inability to integrate experiences (Hume, Loftin & Lantz, 2009). Simpson (2005) identified 33 intervention treatment methods for addressing deficits in students with ASD and evaluated them based on scientific research-based principles. Interventions were categorized as (a) scientifically

based practices, (b) practices that show potential, (c) practices with limited support, and (d) practices that are not recommended for use (cited in Zager et al., p. 10). Included in the 33 intervention strategies were social skills interventions, and video modeling. Each of the above stated intervention categories address social skill deficits presented by persons with ASD.

Social Skill Intervention

Social skill deficits are one of the core diagnostic features of individuals with ASD and can include difficulties in use and comprehension of nonverbal communicative behaviors such as eye contact and facial expression, failure to engage in conversational turn-taking, and deficits in exchanging abstract information such as feelings and opinions (Mason et al., 2012). This is particularly concerning because when people with ASD do not initiate, they do not seek out social and verbal learning opportunities and miss opportunities to gain valuable information from the environment (Peck 1985). Although the research on social skill interventions have been wide-ranging and mainly focusing on primary and secondary age students, little is known about the effects on adults with ASD. Perhaps the most challenging area for students with ASD is adjusting to the social demands of a college setting (cited in Adreon & Durocher, 2007). Future research should aim to meet the needs of persons with ASD across post-secondary settings.

Video Modeling

An emerging research based strategy for addressing social skill deficits is video modeling (VM). Video modeling has been defined as the occurrence of a behavior by an

observer that is similar to the behavior shown by a model on videotape (Nikopoulos & Keenan, 2004). Conversely, video modeling has been used to teach a variety of skills including: social skills, conversational skills; independent living skills; and employment readiness skills to name a few. Sigafoos (2005) utilized video self-modeling to teach microwave oven use to three adults with developmental disabilities. In VSM, the person with ASD is videotaped during a role-play scenario or in a natural setting (Hume et al., 2009). All prompts are edited out of the video so that the person is seen performing the skill independently (Hume et al., 2009). Charlop et al. (2010) provided another example of teaching socially expressive behaviors to three children with ASD through video modeling. According to their findings, video modeling was a successful intervention in teaching those socially appropriate behaviors. All of the children in this study reached criterion for acquisition (7 out of 9 opportunities, or approximately 80% for two consecutive sessions) for all four-target responses: verbal comments, intonation, gestures and facial expressions. More recently, VM research has shifted its focus from primary and secondary students to students in a college setting to better develop social skills similar to that of average college level students.

Purpose of the Study

The purpose of this study is to examine the effects of video modeling (VM) with an adolescent with ASD, in order to improve conversational skills using on-line instructional modules, self-monitoring, and modeling of socially appropriate skills where coaching opportunities were provided within a controlled setting. As cited in Nikopoulous and Keenan (2003) "the importance of conversational skills is underlined by other findings,

which suggest that when the social initiation rate of children with autism increases, their social behavior improves significantly" (p.88). Functionally equivalent or "social" appropriate behaviors in relation to social interactions that were studied: initiating a conversation, active listening, exhibiting and understanding conversational cues, and communicating effectively with peers, educational staff and various persons within the community in which they live. A mix of both excitement and uncertainty can accompany the transition to life after high school as youth prepare to embark on new college and career pathways. Because transition and social skill acquisition are equally important for persons with ASD, Chapel and Somers (2010) note that "challenges with social skills is the very thing that will help students be successful in the academic arena as well as obtaining and retaining employment" (p. 122).

Research Questions

1. To what extent will social initiations increase after the online instructional module training?
2. To what extent does online instructional module training paired with self-monitoring increase the use of social skills to start, maintain, and end a conversation within a social setting?
3. To what extent will on-line video modules assist in the generalization of social interactions displayed by the student during social conversations?

Research Hypothesis and Design

It is hypothesized that social skill instruction and video modeling with an adolescent will: (a) increase social communication skills, and (b) increase generalization of social skills via self-monitoring.

This study was implemented using an ABAB design. Single subject experimental designs

are typically used to study the behavior change an individual exhibits as a result of some intervention or treatment (Kazdin, 2011). The baseline condition (A phase) and intervention condition (B phase) are alternated in order to demonstrate a functional relationship. A functional relationship is found if baseline (A1) performance is improved during the first intervention phase (B1), reverts to or approaches original baseline levels again (A2), and then performance improves again when intervention is returned (B2). The ABAB design was selected for its simplicity in assessing performance continuously over time (Kazdin, 2011). The phases included baseline (A1) Computer access, no online module training, with self-monitoring (B1) Computer access, online module training, coaching, and self-monitoring (A2) withdrawal and return to intervention (B2) return to intervention conditions.

LITERATURE REVIEW

The purpose of this chapter is to provide a systematic review of an effective strategy: video modeling (VM) as an intervention to increase social skill use for individuals with ASD.

Autism Spectrum Disorder (ASD)

Autism spectrum disorder (ASD) has become a widely recognized disability that impacts a vast majority of the population. National trends indicate an increase in the number of children identified as having autism spectrum disorders (as cited in Kamps, Royer, Dugan, Kravits, Gonzalez-Lopez, Garcia, Carnazzo, Morrison, & Garrison Kane, 2002). According to the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM–5*; American Psychiatric Association, 2013) criteria, developmental delays exist in several areas for individuals diagnosed with ASD, including: deficits in social-emotional reciprocity, deficits in developing, maintaining, and understanding relationships, and highly restricted, fixated interests that are abnormal in intensity or focus (APA, 2013). The term autism was first identified and used by a well-known psychiatrist and physician by the name of Leo Kanner. The word autism means "alone" and the group of children Kanner observed had a preference to be alone (Koegel & LaZebnik, 2004). When diagnosing a child who shows characteristics of this complex disorder, one must decide to what extent the specific ASD characteristic affects the child so they can determine where he or she falls on the spectrum (Koegel & LaZebnik, 2004). Children with ASD can have a wide range of symptoms or characteristics that range in severity, however

symptoms must be present before the age of three in order to be diagnosed. In addition, while their language is usually not delayed, they often have difficulty using communication in a way that results in peer relationships, which may include a preoccupation with topics that do not interest their and a lack of social or emotional reciprocity, such as difficulties responding to peer's questions or difficulty understanding emotions (Koegel, Vernon, Koegel, Koegel, & Paulin, 2012). These deficits can manifest themselves in various areas, which can affect these individuals in their adulthood. Currently, there is no cure for ASD. However, there are many evidenced-based treatment options for children with ASD that lessen the severity of their symptoms. Early intervention treatment services such as social skills training and video modeling can significantly improve a child's development and increase social interactions and peer relationships in the future.

Social Skills Intervention

The literature on social skills interventions for individuals with ASD is scarce and not widely studied. Simpson, Ganz, and Mason (2012) noted, "The research that underpins social skills and social interactions interventions for learners with ASD is not especially strong" (p.222). There have been a variety of explanations as to why persons with ASD struggle with social skills and interactions. Explanations include problems of executive function, emotional regulation difficulties, and deficits in theory of mind (as cited in Simpson, 2005). Theory of Mind can be summed up as a person's inability to understand and identify the thoughts, feelings and intentions of others (Autism Speaks, 2010). Nevertheless, there has been a significant increase in the number of studies that

have focused on social skill interventions for individuals with ASD. There has also been an increase in the number of stakeholders who would agree that social skills interventions are needed to address student's social deficits. In a literature review by Matson et al. (2007), there were a total of 240 participants with ASD who were given various social skill interventions in either a group or individual setting. Their findings from the review showed an increase in peer mediated, script based, and modeled social skills training to those individuals proved to be effective. In a similar literature review by Chan et al (2009), 42 studies that involved peer mediated interventions were reviewed. The target skills for this study focused on sociocommunicative responses such as: initiations, joint attention, sharing, affection, and academic behaviors. The results of the review of literature concurred with the information provided by the Matson et al. (2007) study. Both studies supported peer-mediated interventions for individuals with ASD proved to be effective.

Research supporting success rates for students with ASD who receive social skill training is moderate. Bellini et al. (2007) found that social skills training interventions were minimally effective after a meta-analysis of different interventions used for students with ASD were assessed. Teaching students social skills in-group and individual sessions apart from the classroom environment proved to be effective (Matson et al. 2007). The need for social skills instruction and support for students with ASD is challenged by the undeniable reality that improving social behaviors is difficult (Simpson, Ganz, & Mason, 2012) therefore, in order to be effective, interventions must target a specific deficit the students possess, either a skill deficit or a performance deficit (Frey & George-Nichols, 2003). Another point of agreement is that social skills targets should address different

areas that correspond to differing social requirements and situations (as cited in Simpson, 2005). Whatever the approach, social skills training interventions should be presented in a systematic way similar to instruction used to teach academic skills (Miller et al., 2005). Assessment of the students currents skills needed for successful communication with staff and peers, including skills that the students may already possess but do not use appropriately would be the most important to address.

Early studies of behavioral treatments entailed a focus on learning to learn techniques and thus an emphasis on joint attention and task engagement, i.e., helping the child share with an adult a focus of interest (cited in Reichow & Volkmar 2010) therefore, Eber et al. (2002) suggested that interventions need to incorporate aspects that are important to the individual student to keep him or her invested in the interventions and maximize the success rate. Delano and Snell (2006) found that reading a social story with comprehension checks and a play session increased social engagement for three boys with ASD. In a similar study, Chan and O'Reily (2008) found that a 10 to 20 min session of a social story, discussion questions and a role-play, proved to be effective in improving the social engagement of two boys with ASD. The findings from those studies suggest it is beneficial to provide students with ASD practice of the social skills being taught in various environments. In a similar fashion to findings from Chan and O'Reily (2008), Miller et al. (2005) suggested classroom interventions could include instructing and reinforcing teacher-approved social behaviors, such as raising their hand or staying in their seat, or peer-approved social behaviors, like taking turns or appropriate teamwork. In two studies done by Golan and Baron-Cohen (2006), a social problem solving skills intervention was assessed for two groups of adults with Asperger syndrome and ASD

who were then separated into a control and experimental group. This intervention employed the use of direct instruction of social skills. Each group was provided 10 weeks of mindreading intervention with the second group receiving tutoring or social skills group intervention via software. The sessions addressed emotional recognition skills that were reported by caregivers. Golan and Baron-Cohen (2006) found that in study, all participants improved on emotional recognition. In the second study, the group who was provided the software improved on the task they were assessed, however the social skills group did not improve. In a similar study conducted by Lacava et al. (2007) eight children between the ages of eight to eleven with Aspergers syndrome were provided 10 weeks of mindreading software instruction. The participants in this study were given a pre-and-post assessment. Lacava et al (2007) findings suggested that there was a significant difference in pre and posttest scores for all the areas assessed. The intervention used in both studies proved to be effective in increasing emotional recognition of peers. These are suggestions for optimizing success of social skills interventions as a whole, however there are more specific strategies depending on the type of intervention or age group being targeted. In the next section I will discuss video modeling, a researched based intervention strategy that has been receiving more attention in teaching social skills to persons with ASD.

Video Modeling

There are various interventions for teaching appropriate social skills to individuals with ASD. Many interventions that target social deficits for individuals with ASD have incorporated the use of technology (Scattone, 2007). Video modeling, in particular, is a

popular intervention used with individuals with ASDs to teach a variety of new skills (Fragale, 2014). Video modeling is a component of instruction involving the presentation, and learner observation, of a videotaped episode of target behaviors completed by a model, followed by a direction to the learner to perform the behaviors modeled in the video segment. Charlop and Milstein (1989) found that conversation skills were learned quickly, generalized and maintained by three boys with ASD. This study focused on conversational skills presented in short films with adults as models, which is similar to another study conducted by Charlop-Christy et al., (2000). In this study four participants with ASD were presented with video models that focused on labeling emotions, play skills, conversation skills, and non-social skills. Findings from this study led to quicker acquisition of social skills presented to the participants via video modeling whereas skills were generalized in-vivo modeling. Gena et al., (2005) compared two interventions utilizing in-vivo and video modeling combined with a token economy to increase affective responses within corresponding contexts. Both interventions increased affective responses in the children with ASD. Collectively, these reviews indicate that video modeling is an effective, versatile intervention for individuals with ASDs (Fragale, 2014).

Video modeling is a technique that has been steadily increasing as video technology has expanded over time. Theoretically established in Bandura's (1969) Social Learning Theory he stressed the importance of incidental, observational learning and vicarious reinforcement video modeling techniques such as adult modeling (Nikopoulos & Keenan (2007), peer modeling (Nikopoulos & Keenan (2004), self-modeling (Sherer et al, 2001), point of view modeling (Corbett, B. A., & Abdullah, M, 2005), and mixed

models (McCoy, K., & Hermansen, E, 2007) emerged. Utilizing modeling techniques paired with video replicas of desired behavior, video modeling has been used to teach a variety of skills for individuals with ASD. Sansosti and Powel-Smith (2008) used video modeling to teach social communication skills to three boys with ASD and Aspergers syndrome. Laarhoven, Johnson, Larrhoven-Meyers, Grider and Grider (2009) used a video iPod as a prompting device in employment settings. Another example, a study by Sigafoos, O'Rielly, Cannella, Edrisinha, De La Cruz, Upadhyaya, Lancioni, Hundley, Andrews, Garver, and Young (2006) in which video modeling was used to prompt and fade procedures to teach dishwashing skills to adults with developmental disabilities.

A previous review by Sancho, Sidener, Reeve, and Sidener, (2010) examined two video modeling strategies for teaching play skills to children with ASD. A premise for this study was based on previous video modeling studies. It was determined that video modeling has been effectively used to decrease problem behaviors (e.g., off task-behavior; Coyle & Cole, 2004), as well as increase appropriate behaviors, including social initiations (e.g., Nikopoulos & Keenan, 2007), perspective talking skills (e.g., LeBlanc et al., 2003), daily living skills (e.g., Shipley-Benamou, lutzker, & Taubman, 2002), and helping skills (e.g., Reeve, Reeve, Townsend, & Poulson, 2007). These studies proved to be effective when using video modeling to teach individuals diagnosed with ASD.

Seldom has research been conducted featuring video modeling on individuals approaching adulthood who lack social skill acquisition. Historically, few individuals diagnosed with an autism spectrum disorder (ASD) have pursued postsecondary education (Mason, Rispoli, Ganz, Boles & Orr, 2012). Mason, Rispoli, Ganz, Boles and

Orr (2012) utilized video modeling on communicative social skills of college students with ASD. Findings from this study showed an increase in communication skills of both participants. Another study conducted by Allen, Wallace, Renes, Bowen and Burke (2010) used video modeling to teach vocational skills to adolescents and young adults with ASD. In a similar study Rehfeldt, Dahman, Young, Cherry, and Davis (2003) concluded that teaching meal preparation skills to individuals with mental retardation using video modeling was successful across all three participants and continued through generalization. Successful documentation exists to show that video modeling is beneficial for adults with disabilities.

Conclusion

As the literature suggests, there are many different contributing factors that may make a student who has deficits in social skills life more stressful due to a diagnosis of ASD. That lack of social deficits may be a cause as to why post-secondary avenues are not explored by persons on the spectrum. With the research continuing to increase on social skill deficits for adults with ASD who are considering college as an option after high school, interventions should seek to meet those needs. Social skill interventions being taught through video modeling is one strategy not widely studied. This review of literature supports current research on video modeling as an intervention to teach social skills and aims to increase future research within the college setting.

METHODS

This chapter describes the procedures that were used to implement social skills module training that included video modeling of desired behaviors, self- monitoring, and weekly teacher mentoring. The use of the ABAB withdrawal design (Kazdin, 2012) is discussed in addition to demographic data on the participant, settings, and the materials required for implementation of the study.

Participant

Participant selection was attained by parent permission and approval. The participant selected for this study met the following criteria: (a) a diagnosis of ASD, (b) a deficit in social skills instruction, (c) transition age (16 or older), (d) and no previous exposure to online modules or other self-monitoring systems. Given the diagnosis and age level of the participant, parental consent was obtained (See Appendix A for permission forms).

A pseudonym was used for the participant in this study to maintain confidentiality. Christian is an 18-year old white male with a history of developmental delays, Asperger syndrome, social difficulties, and academic struggles. Christian underwent a neuropsychological evaluation on across several days from 10/28/2014 – 12/03/2014. He received a diagnostic impression of autism spectrum disorder (severity level 2), attention deficit hyperactivity disorder (predominately inattentive presentation) and specific learning disorders in reading and math calculation fluency. Record review stated that the evaluation was to define strengths and weaknesses in the context of problems with executive functioning and a previous autism spectrum disorder diagnosis.

Results from the evaluation dated 10/28/14 were consistent with results from a 2006 neurological evaluation, which noted deficit patterns relating to language-based cognitive processing, speech language functioning, executive functioning, and social skills.

At the age of two Christian saw a pediatric neurologist. This was the first time his parents noted differences in Christian's development in relation to peers his age. Christian attended public school from the time he was in Kindergarten until 3rd grade. He then started to attend a private school. Christian struggled in the public school setting with reports of bullying. He then transferred from the private school to a private school for children with ASD. There he stayed until the first half of 6th grade. Christian received much rejection and struggled socially at the private school, which contributed to bad migraine headaches and an obsessive compulsive thought process. Since leaving the private school setting, he initially participated in homeschool programming receiving tutoring services and mentoring through a local university in the city in which he resides. Christian received his high school diploma in May of 2015.

Academically, Christian's greatest strength is in the area of Algebra. He identified his academic deficits as: writing, reading comprehension, and reading speed. He prefers to finish a task before moving on to the next one.

Christian is behind same aged peers with respect to social skills according to record review. It was noted as a concern from Christian's parents that he cares too much about what others think of him, and that he is sensitive to criticism, and has difficulty in letting go. Even though he calms down quickly, Christian tends to be a perfectionist. Christian identified social skills as an area in which he lacks in capability to converse with peers. Christian wants to be mature and "blend in" socially. When discussing social

skills with Christian he can become very distraught and down on himself as he is aware of his social deficits and finds it extremely difficult to overcome them. He stated he "just wants to fit it." He finds people's misunderstanding of him as "frustrating." Christian is known to be 'deeply loyal" to persons he considers friends even though the relationship may not be reciprocal.

Christian uses online chat systems to communicate with persons who have similar interest. These interests include: Mario/ videogames, computer animation, and a series of characters he has drawn for his "animal diaries." He expressed interest in turning his "animal diary" series into a television series that would teach children with ASD social skills. More recently he has experienced cyber bullying according to record review. Other behaviors identified by Christian and record review indicate: difficulty in staying focused during class and tests, difficulty in controlling his voice and tone, which includes speaking harshly to others without recognizing he is doing so. Mood variations in relation to quality of sleep were also noted.

Site of the Study

This study was conducted in a university conference room in the downtown area of the campus. The layout of the meeting room consisted of a large conference table with seating around the circumference of the table. There was one computer at the far right corner of the meeting room. A small video camera was placed on the conference table to record each session for data collection, fidelity of treatment, and interobserver agreement (IOA). This study took place from March 2015 to May 2015.

A 13" MacBook Pro was utilized for presentation of the social skills training. Other materials included: conference table; chairs; and an office desk (was not utilized in intervention). Other equipment included a camera, laptop computer (participant's personal), and an iPhone for video recording.

The video camera was set up in the conference room prior to each session. All video editing was completed using iMovie software and viewed for IOA. Video recording was conducted using an iPhone camera with high-quality HD video output and built-in microphone. The iMovie 11' (version 9.0.8) software was used to capture and edit all videos for future use.

Research Approval

Prior to participant selection and implementation of the study, a Human Subject Institutional Review Board application was submitted to the university. Approval was given on 10/16/2015. (See Appendix B for research approval)

Dependent Variables

Behavior Rating Inventory of Executive Functioning (BRIEF). The participant completed online instructional modules determined by a pre- assessment Behavior Rating Inventory of Executive Functioning (BRIEF) given by the primary investigator. The BRIEF is used to assess executive functioning and self-regulation in children and teens ages 5 through 18. The BRIEF is given in three formats: (a) Parent and teacher questionnaires, (b) Rating scale completed by teacher, parent, or day care provider for and, (c) Self-report. A Behavioral Regulation Index and Metacognition Index are

combined to form a Global Executive Composite; for the BRIEF-P, the composite is based on three indexes– Inhibitory Self-Control, Flexibility, and Emergent Metacognition. Upon completion of the study the participant will be provided with another BRIEF as a post measure to identify any noticeable differences in social skill acquisition prior to intervention. Modules included skills in the target areas that had been determined prior to the first training session.

Table 1. Target Behaviors for Christian

Target Behavior	Operational Definition
Starting a Conversation	Verbal initiation that prompts a social response between a participant and peer. "Making small talk" accounts for 2 exchanges between persons.
Maintaining a Conversation	Continuation of a conversation by responding to a question or comment made by peer after two exchanges has taken place on the same topic.
Ending a Conversation	Participant waits until peer has finished speaking or acknowledges peer excusing himself or herself with the participant ending the conversation with an appropriate phrase.

Description of Target Social Skills. Three social skills were targeted for instruction during this study. Table 1 provides a list of operationally defined behaviors (dependent variable). Operational definitions of each target behavior were developed for measurement purposes (i.e., conversation skills within a social setting). These pivotal

social behaviors include 1) starting, 2) maintaining, and 3) ending a conversation. The online instruction module provided direct instruction on all three-target behaviors.

Target Behavior 1: Starting a Conversation. Starting a conversation was a target behavior identified by Christian that he wanted to improve. Three sub-skills were targeted as part of the starting a conversation skill set. These sub-skills included "Greeting Others," "Introducing yourself," and "Making Small Talk". Starting a conversation is defined as a verbal initiation that prompts a social response between a participant and peer (adapted from Kamps et al., 1994). For example, the participant may say hello or ask, "What are you studying in school?" or "Do you like to play video games?"

Target Behavior 2: Maintaining a Conversation. Maintaining a conversation was another target behavior identified by Christian that he wanted to improve. When conversing with Christian he identified that he struggled with continuing a conversation and that the most he would do is "say hi to people". This behavior was identified as the continuation of a conversation by responding to a question or comment made by peer after two exchanges has taken place on the same topic (adapted from Krantz & McClannahan, 1993). The skill set for maintaining a conversation included three target sub-skills: 'Using Good Listening Skills', 'Asking and Answering Questions', and 'Understanding Topics'. For example, the participant might ask, "what are you studying in school?" or "I like going to the lake. Have you been to the lake lately?" In return, the conversation partner would respond and ask the participant the same question or a question that follows the participant's initiation. By targeting conversation maintenance, the goal was to improve engagement in conversations as they present themselves with

others in various social settings.

Target Behavior 3: Ending a conversation. Although ending a conversation was not a behavior that Christian identified as an area he would like to improve; ending a conversation was part of the treatment package utilized for this study. Ending a conversation was defined as "participant waits until peer has finished speaking or acknowledges peer excusing himself or herself with the participant ending the conversation with an appropriate phrase" (adapted from Tse, Strulovitch, Tagalakis, Meng, & Fombonne, 2007). For example, the participant or conversation partner may pause for an extended time by making a verbal statement or gesture that the conversation has ended. The participant would offer an ending such as "It was nice meeting with you", or "I enjoyed our conversation". By targeting ending a conversation, the goal was to improve his overall use of the three target skills during social engagement with other individuals during a conversation.

Social Skills Online Training Module Pre/Post Test. A pre/post assessment (BRIEF) was provided to the participant pre-intervention and post intervention. A pre/post assessment was provided to the participant during intervention phases on each online module training session. Each pre/posttest were used as a measurement of the learning the participant received during the training as a result of comparing what the participant knew prior to training in a pre-test and after training in a post-test. If the participant scored below 80% on the post-test he received another training session on that target skill. Table 4 compares the average scores for each target skill pre and posttest results.

Self-Observations of Parent Provided Social Situations. To assess generalization, a self-management probe was provided to the participant and the participant's parents as a visual to assess acquisition of the target behaviors in various social settings. The participant's parents were to provide the participant with at least one social session a week following training and video recorded social sessions on the campus. Each target behavior was identified on the probe in the form of a task analysis. The participants recording of behaviors consisted of two components: (a) self-observation and (b) self-recording. Self-observation involved the covert questioning of behavior (e.g., was I paying attention to my assigned work?) and self-recording the covert documentation of the response to this prompt on a recording sheet (Wilkinson, 2008). For this study, probe questions were changed. The participant's parents were provided the same probe, which allowed them to record the participant's use of skills.

The social situations occurred outside of the controlled setting at various places selected by the participant's parents. The social situations were not previously discussed with the primary researcher, they were natural and spontaneous. The social situations met the requirements if the conversation partners were not people the participant met before. In this way, the participant would be provided opportunities to exhibit all skills on the probe and assess his behavior once the social session ended. (See Generalization)

Measurement

Data Collection and Analysis. Each social session was video recorded. The video camera was set up prior to the session in a central location in the room to capture the participant and peers sitting in a triangle; the participant in the middle; peers sat on

the left and right of the participant. Videos were later observed and coded by the primary investigator and another Masters-level student in the ASD Program at Missouri State University. The primary investigator started and stopped recordings before and after each session. Observation data was collected using a data collection sheet (Appendix C) once the session was complete. Data collection included a frequency of steps complete (converted to a percentage of steps completed for the purpose of data analysis). Data was plotted and graphed for the participant's target social behavior.

Each target behavior presented to the participant included sub-skills. The sub skills were separated and categorized into individual task analysis per target behavior on the data collection sheet. Each sub skill was then calculated independently and collectively on the frequency in which the steps were complete (converted to a percentage of steps completed for the purpose of data analysis). Depending on how many conversation partners were present during the videotaped sessions, opportunities to emit the target behavior were presented.

The 'starting a conversation' module includes three sub skills ('greeting others' 'introducing yourself' and 'making small talk'). Each conversation partner present during the sessions provided at least one opportunity for the participant to emit any of the 'starting a conversation' sub skills. The participant had one opportunity per session to greet and introduce himself to each conversation partner anytime throughout the session. Making small talk accounted for multiple opportunities between conversation partners. If there were two exchanges between conversations with partners the participant was conversing with, the exchange shifted to the target behavior 'maintaining a conversation'. As with the 'making small talk' sub skill for the target behavior 'starting a conversation',

there were multiple opportunities between conversation partners for the participant to maintain a conversation. The sub-skills for 'maintaining a conversation' included: 'Using Good Listening Skills', 'Asking and Answering Questions', and 'Understanding Topics'. There was only one opportunity per conversation partner during the recorded sessions for the participant to emit the target behavior of 'Ending a Conversation'.

Each target behavior was measured using a social skills training module scale. Appendix D provides the scale that was utilized after IOA data was completed. The scale was used to assess clear use of target behaviors by the participant during a videotaped session. Mason et al., (2012) noted "Within the rating scale, odd number scores were associated with clear behavioral definitions and even number scores were associated with a behavior that appeared to fall between two definitions" (p.427). For example, in the same study conducted by Mason et al., (2012) the 'eye contact scale' in that study used the numbers one and three with clear definitions of target behavior where the number 2 fell between the two digits. The scale was utilized in the same way, however target behaviors were not the same. The scale was modified to match the three-targeted social behaviors.

Interobserver Agreement (IOA). Interobserver agreement (IOA) data was collected by the primary investigator and a trained graduate student using an IOA scale (See Appendix C). IOA data was collected for 100%, 80%, 100%, and 78% of baseline and intervention phases, respectively. Following a 15-min social session, assessment of social skills training was conducted using event recording. Event recording is a process for documenting the number of times a behavior occurs. An observer using event recording makes a tally mark or documents in some way each time a student engages in a

target behavior. The participant was observed immediately following the presentation of an online instructional module for a total of 15-mins. The scale measured acquisition of skills by using point-by-point reliability. Kazdin (2012) stated "The point-by-point agreement ratio is available for this purpose whenever there are discrete opportunities (e.g., number of trails, intervals, or correct answers) for the behavior to occur (occur/ not occur, present/absent, appropriate/inappropriate)" (p.103). Interobserver agreement was collected on a separate day from the initial training session with the participant. Interobserver Agreement was obtained when reviewing the video of the participant engaged in a 15-min social session with two to three same aged peers. For IOA purposes, sessions were broken down into one-min intervals with two observers recording the same number of occurrences of responses within the one-min interval. Table 5 provides IOA across participant and phases. Using a target behavior data collection sheet (See Appendix C) the primary observer and the secondary observer viewed the video session of the participant and recorded the frequency of initiations, responses, and used conversational cues during the social session.

To establish IOA, a graduate student received training from the primary investigator by watching and coding a previously recorded video session of a targeted behavior (baseline session one). Immediately comparing data collected of the viewed session with the primary researcher followed. Training continued in this fashion during course of the study. Dividing the number of steps completed by the total number of steps and multiplied by 100 provided calculation of IOA. Accuracy was established at 80% or above to be deemed reliable.

Social Skills Training Module Scale. The primary investigator and a trained graduate student completed additional IOA using a 5-pt likert scale (See Appendix D) following IOA observations to assess the acquisition of the skills during a video recorded social session. A modified version of a 5-pt likert scale developed by Mason, Rispoli, Ganz, Boles, and Orr (2012) was used to assist in assessing the acquisition of the pivotal social behaviors that were instructed during the module training. Mason, Rispoli, Ganz, Boles and Orr (2012), stated "LW Kappa, which is the observed Kappa over the maximum possible Kappa, gives differential credit based on the distance between disagreements" (p. 428). What this means is within each category of the target behavior there was an ordinal difference between undesired and desired behavior represented by the participant in the videotaped sessions. For example, the Starting a Conversation module included the sub-skills of "Greeting Others", "Introducing Yourself" and "Making Small Talk". If the participant approached a peer but did not greet them he was scored a 1. If he approached the peer, greeted and introduced himself appropriately but did not make small talk he was scored at a 3. If he approached a peer, greeted them, introduced himself, and made small talk he was scored a 5. The numbers in between are the considered potentially meaningful to take into account because the behavior may have been relatively close to clear observations outlined by the scale. By taking relative occurrences into account each cell in the matrix is weighted in accordance with how near the observed behavior was to the clearly defined behavior.

Consumer Satisfaction. A consumer satisfaction scale was given to the participant and the participant's parents upon conclusion of the study to assess the effectiveness of the social interaction module training and obtain feedback from the

participant and the parents on the favorability of the treatment. The number of responses by the total number of responses to get a percentage will measure consumer satisfaction. Appendix E shows the consumer satisfaction scale.

Fidelity of Treatment. To ensure that the intervention was appropriately administered, fidelity of treatment on the participant's use of the target behaviors was taken across both intervention phases of this study. A procedural checklist describing each target skill the participant was to exhibit was assessed post video modeling (VM) exposure. Fidelity of treatment was conducted after each 15-min social session during intervention phases. The primary investigator and a second observer independently observed target behaviors. Treatment fidelity was to be calculated by dividing the number of correct steps completed by the total number of steps required and multiplied by 100 to provide an accurate percent. (See Appendix F)

Independent Variables

The independent measures for this study included online module training of targeted social communication skills. Following module training, the participant was provided a 15-min social session that included two to three peers within the same range of the participant. During the social session the participant was to converse with peers about various topics related to the participants' topography. Conversation topics included weekend activities, course of studies, hobbies, and topics that were specifically related to the participant. Following the recorded session, the participant received teacher mentoring which included practice of target skills, feedback from recorded sessions, and general conversation on how the participant felt he was progressing during his training.

Target behaviors were taught through Online Module Training. Charlop-Christy and Daneshvar (2002) used video modeling to teach perspective-taking skills. This study was linked to another study done by LeBlanc, Coates, Daneshvar, Charlop-Christy, Morris, and Lancaster (2003). In both of these studies, participants were presented with an online module that taught perspective-taking task. This study was similar to the studies conducted by Charlop-Christy and Daneshvar (2002) and Leblanc et al., (2003) in that the participant was presented with a video (online instruction module) that taught the three target skills: starting a conversation, maintaining a conversation, and ending a conversation. During the online module the participant was asked questions to demonstrate an understanding of the skills being presented. The participant completed online instructional modules determined by a pre- assessment (BRIEF) given by the primary investigator. The participant took a post assessment (BRIEF) concluding this study to determine if improvement in conversational skills increased.

Social Skills Module Training. The Social Skills Module training consisted of a Power Point presentation. The training module covers the social skills "Starting a Conversation", "Maintaining a Conversation", and "Ending a Conversation". The "Starting a Conversation" module includes three sub-skills: Greeting Others, Introducing Yourself, and Making Small Talk. Learning objectives are included in each sub skill as well as comprehension checks to assess acquisition of skills taught during the modules. The lessons will be accessed via computer in a face-to-face session with the primary investigator. A task analysis (See Appendix H-Generalization Participant Form) of the modules will be implemented to ensure the participant emits the social behavior

presented during the instructional module with peers of the same age. "Maintaining a Conversation" and "Ending a Conversation" were taught in the same way.

Each lesson included a pre- and post- assessment on skills presented during the training modules. Lessons were accessed via computer in a face-to-face session with the primary investigator. It was anticipated that learning sessions took approximately 15 min to complete. At the end of each learning session the participant was given an opportunity to engage in a social session with same aged peers for an additional 15 min on the next session day. The participant had access to a computer throughout all session's, baseline and intervention, as an idiosyncratic reinforcer. Peers were changed during each session to ensure acquisition of skills across behaviors. For each social session day, there were two to three peers present during this study.

Social interactions were observed via a video recording and measured by event recording during a social interaction presented by the researcher and two to three peers within the same age range as the participant. Ganz and Sigafoos (2005) utilized event recording to identify the frequency the participants presented the target behaviors. Operational definitions of target behaviors are presented via table 1.

Teacher Mentoring. Teacher mentoring was provided to the participant during the intervention phases (B1 and B2). During both intervention phases, teacher mentoring consisted of a 3-5 min conversation after the online module training for the day was complete. Trial exercises of target behaviors 'starting' and 'maintaining' conversations were held with the primary investigator and participant. The primary investigator asked questions from the comprehension checks from the online modules to the participant with the continuation of a conversation (approximately 2 min). Trail exercises of the third

targeted behavior ending conversations were held concluding the 2 min starting and maintaining conversation practice. During intervention phases the participant was provided opportunities to engage in a social session with same aged peers. During social sessions, teacher mentoring consisted of one prompt per session for participant to engage in conversation with peers if needed. The participant was provided a list of conversation topics that were generated from the 'Starting a Conversation' online module. A sample list of topics was provided to the participant (See Appendix G). Additional conversation topics were observed during social sessions with participant.

Research Design and Procedures

An ABAB withdrawal design (Kazdin, 2012) was employed to evaluate the treatment effect of the module training on the participant's social behaviors. The ABAB design was selected based on the continuous observations of several different behaviors displayed by participant in a social setting. Proceeding five baseline sessions, a pre-assessment was given in addition to video instruction of the targeted social skill were presented to the participant. Each phase is described below.

Pre-Intervention. The participant met with the primary investigator and a professor of the university to identify social skill difficulties and to establish targeted behavior. The participant and parent were provided with an assessment (BRIEF- See Measurement) provided by the primary investigator and lasted approximately 45-60 mins in the conference room provided by the university.

Pre-Intervention and Intervention Conversation Partner Training. During both baseline and intervention phase's conversation partner training was provided to the

conversation partners before each 15-min social session occurred. Baseline training consisted of a 2-3 min conversation with conversation partners with the following directives: (a) walk into the conference room and sit in a seat that is next to the participant, (b) be sure to position yourself in front of the camera, adjust if needed, (c) only respond to the participant if he initiates to you, (d) keep comments short and brief if participant initiates a conversation, (e) converse with the other conversation partners or have something to do. These conditions were the same for both A1 and A2 conditions. Data sessions were taken out of the study if conversation partners did not meet the requirements when conducting IOA.

During intervention, the primary investigator prior to each 15 min social session trained conversation partners. Intervention training consisted of a 2-3 min conversation with conversation partners with the following directives: (a) walk into the conference room and sit in a seat that is next to the participant, (b) be sure to position yourself in front of the camera, adjust if needed, (c) converse (respond) to the participant after he initiates a conversation on subjects that he discusses in the conversation, (d) only ask questions or make comments on specific subject topics initiated by the participant, (e) don't change the subject to allow the participant the opportunity to change the subject.

A1 (Baseline). During the first baseline phase the participant and two to three same-aged peers serving as conversation partners were present including the primary investigator in the conference room. The primary investigator served as the main conversation facilitator in all conditions. The participant and conversation partners were provided 15 min social opportunities to engage in a social conversation while sitting at a conference table occupied in various personal activities. These activities included the

participant on his personal computer and conversation partners on their personal devices or reading materials. The conversation partners were to only converse with the participant if the participant initiated a conversation. Training was provided to the conversation partners before each 15 min social session due to partners being varied. The primary investigator conversed with the participant prior to the conversation partner's presence in the room. The participant was told that the students entering the room were meeting with a professor at the university and needed to occupy the space while they waited. The participant was told he could converse with the students if he wanted to.

B1 (Intervention). Intervention conditions included online module training on target behaviors on a laptop computer. Prior to each target behavior module, a pre-test on each target behavior was given to the participant. The online module was presented to the participant consisted of a slide presentation with comprehension checks throughout the module and video models of target skills. Upon completion of the module, the participant was directed to a post-test on the target skill. If the participant passed the post-test with 80% or above accuracy he was presented with the next module on the next module-training day. The participant met with the primary investigator for training and social sessions two days a week during both intervention phases. On the first day, the participant was presented with the online module including the pre and post-test for the targeted skill. On the next day, he was given a 15 min-social opportunity with two to three conversation partners within the same age range.

The participant was given the same directive he was given during baseline conditions during intervention conditions. He was told he could converse with the students entering the room if he wanted to. The participant was provided a list of

conversation topics prior to each intervention social session. If he had not initiated a conversation within the first min, the primary investigator provided the participant a written prompt to begin conversing. One prompt per session was allotted during intervention phases (B1 and B2). Once the prompt was given the primary investigator left the room to discontinue a conversation with the primary investigator. After 15-min the primary investigator entered the room and provided the conversation partners a gestural prompt to close the conversation. Immediately following the 15-min social interaction session the participant was provided teacher mentoring which consisted of a 3-5 min conversation about the quality of the session and how the participant felt he did. The teacher mentoring was provided as a qualitative component for this study. A research journal was completed after each videotaped social session.

A2 (Return to Baseline). Return to baseline conditions was identical to the initial baseline condition. The participant did not receive online module training during this phase, however he was given 15-min social opportunities as he did during the first baseline phase. Conversation partners were different during this phase. The participant was provided with the instruction that he was allowed to converse with the students if he wanted to.

B2 (Return to Intervention). Return to intervention conditions was identical to intervention conditions. Conversation partners were different during this phase. Conversation partner training was conducted in the same manner as the initial intervention phase. The participant was provided the directive that he could converse with the students if he wanted to. One prompt was allotted, if the participant did not initiate a conversation with peers within the first min.

Generalization

Generalization probes were presented throughout the study. Probes were provided in a similar fashion to baseline and intervention phases, however the location for opportunities to engage in a social session with same-aged peers was different. The location of the sessions was pre-determined by participant's parents prior to exposure. Procedures used during generalization probes were presented as a visual prompt for the participant (See Appendix H), which allowed the participant to self-monitor immediately following the interaction to assess acquisition of skills. The participant's parents were also provided the same task analysis (See Appendix I) to monitor acquisition of steps completed by the participant. The participant and parent were not allowed to share each other's scores on the task analysis to ensure Interobserver agreement and fidelity of treatment was not interrupted. The parent however was able to have a coaching opportunity with the participant to discuss presentation of skills. To collect the (IOA) the participant and participant's parents scored the task analysis with 'yes' if the step was completed by the participant and 'no' if the step was not completed by the participant. The primary investigator scored data provided by the participant and parents.

RESULTS

The purpose of this chapter is to present the results of the study by the participant and phase. For this study an ABAB Withdrawal design was used to assess the effectiveness of module training on the participant's social behaviors within a controlled setting with generalization probes outside of the controlled setting. The participant's results are presented via a graph across baseline (A1), intervention (B1), withdrawal or return to baseline (A2), and return to intervention (B2) which includes a sub-skill analysis of each identified target behavior. To assess self-monitoring, generalization probes were conducted for the participant. Results of BRIEF and generalization probes are discussed. Treatment fidelity results are also present.

Pre-Intervention

Christian was given the Behavior Rating Inventory of Executive Functioning (BRIEF) as a pre and post assessment. Christian and his parents completed the BRIEF prior to his exposure to the social skill module training. Christian completed the BRIEF once again when training ceased to assess whether or not an increase in his use of target behaviors was obtained. Christians' parent did not complete another assessment upon completion of the study. T-Scores represent dysfunction level. Higher T-scores suggest a higher level of dysfunction. Percentile rank is the percentage of scores that fall at or below a given score.

Parent Report- Pre BRIEF Results

Christian's parents completed the Parent-Report version of the Behavior Rating Inventory of Executive Function (BRIEF-PR) prior to Christians' exposure to the independent variable. Table 2 provides the results. The reported scores showed areas of strength and concern for Christian. Areas of Strength included: Working Memory (the ability to hold information in mind to complete a task, encode information, or generate goals, plans, and sequential steps to achieving goals). Although Christians' parents rated him at higher rates in the other eight domains, the scores yield areas of concern for Christian. Areas of concerns included: Inhibit (ability to resist impulses and the ability to stop one's own behavior at the appropriate time); Shift (the ability to move freely from one situation, activity, or aspect of a problem to another as the circumstances demand); Emotional Control (ability to modulate or control his or her emotional responses); Initiate; Plan/Organize (ability to manage current and future-oriented task demands); Organization of Materials (orderliness of work and storage spaces (e.g., desks, lockers, and backpacks); and Monitor(How child's behavior affects others). Due to Christians' parents not completing the post measure, it is difficult to note whether a noticeable change occurred.

Table 2. Pre BRIEF- PR (Parent Report Form) Results

	Pre[1]	
	T-Score	Percentile rank
Inhibit	69	85
Shift	54	73
Emotional Control	58	76
Initiate	69	96
Working Memory	87	99
Plan/Organize	66	93
Org. of Materials	69	96
Monitor	62	93

Student Report Pre/Post BRIEF Results

Christian completed the Self-Report version of the Behavior Rating Inventory of Executive Function (BRIEF-SR). Table 3 provides the results. Responses are reasonably consistent. Christian's ratings of his own self-regulation did not appear overly negative across both measures (pre and post). When completing the pre BRIEF-SR Christian's ratings of his everyday executive function yielded few areas that were considered problematic. His highest rating was in the area of Task Completion (T= 81, %ile = 99), which meant that Christian had no difficulties completing task in a timely manner. A T-score of 65 or higher suggested that Christian may have some difficulties with some

aspects of executive function.

Upon completion of the independent variable, Christian was provided a second BRIEF-SR report form to assess whether changes if any occurred within his executive functioning. Christians' ratings of his everyday executive functioning suggested some areas of concern. One or more of Christians BRIEF-SR scales were at least mildly elevated, which suggest that he reported difficulties with aspects of executive function. Concerns are noted with his ability to resist impulses and the ability to stop his own behavior at the appropriate time (Inhibit $T = 61$, %ile = 86); his ability to modulate or control his emotional responses (Emotional Control T = 57 %ile = 75); and monitor his own behavior (Monitor $T = 61$, %ile = 85). Christian described his ability to adjust to changes in routine or task demands (Shift $T = 73$, %ile = 98) finish tasks such as homework or projects (Task Completion $T = 81$, %ile = 99), sustain working memory (Working Memory $T = 75$, %ile = 98), plan and organize problem solving approaches (Plan/Organize $T = 78$, %ile = 99), and organize his environment and materials (Organization of Materials $T = 68$, %ile = 94), and as not problematic.

When comparing Christians Pre and Post BRIEF-SR report, it is important to note that Christian identified all areas of the assessment as "deficits". Christian was aware of his deficits and wanted to be as accurate as possible when providing responses to the post BRIEF-SR form. Significantly Christians ability to adjust to changes in routines or task demands T- scores were the same on both measures ((Task Completion $T = 81$, %ile = 99). This suggest that he has the ability to finish or complete tasks appropriately and/or in a timely manner, emphasizing difficulties with the production of work or performance output. Although he scored significantly higher on both measures, it is important to note

that task completion affects other executive difficulties which include working memory (Working Memory $T = 75$, %ile = 98), planning (Plan/Organize $T = 78$, %ile = 99), organization (Organization of Materials $T = 68$, %ile = 94), and inhibitory control (Inhibit $T = 61$, %ile = 86).

Table 3. Student Report Pre/Post BRIEF- SR (Student Report Form) Results

	Pre[1]		Post[1]	
	T-Score	Percentile rank	T-Score	Percentile rank
Inhibit	67	93	61	86
Shift	70	98	73	98
Emotional Control	62	85	57	75
Monitor	70	97	61	85
Working Memory	72	97	75	98
Plan/Organize	74	98	78	99
Org. of Materials	65	91	68	94
Task Completion	81	99	81	99

Online Module Training Pre/Post Test

Christian was given a pre and posttest for each target skill throughout the study. When training began, prior to learning the first target skill 'Starting a Conversation', Christian was given a pretest, which included a series of questions (e.g. "Greetings are a polite way

to?" or "You would use a formal greeting when?") pertaining to the skill. After completing the pretest, Christian began the training for the target skill. Upon completion of the training module, Christian was immediately given a posttest, which included questions in reference to the target skill for the session. If Christian scored 80% or above on the posttest he was not required to take another assessment, however he was still required to view each module during the regular scheduled session. Table 4 provides the mean average scores for each targeted skills pre and posttest. Christian was provided at least one pre-test and one posttest per skill.

Table 4. Mean pre/post scores across target behaviors

Participant	Starting		Maintaining		Ending	
	Pre	Post	Pre	Post	Pre	Post
Christian	90%	100%	85%	100%	100%	100%

Baseline (A1)

In the baseline (A1) condition, Christian exhibited target behaviors at a low rate. Christian initiated to gain peer attention almost never or once during baseline phases. One day in particular, Christian acknowledged conversation partners by eye contact but never actually initiated a conversation. He had an average mean of 8% across baseline data sessions. The initial baseline period showed a variable trend for the target behavior starting a conversation, with percentage of steps completed scores first increasing and then decreasing over the course of four data points. A stable baseline was achieved by the fourth data point with a percentage of steps completed score of 10% with a consecutive decrease in percentage to 10% by the last data session. A stable baseline was achieved

for target behaviors 'maintaining a conversation' and 'ending a conversation' respectively across all five sessions. Figure 1 represents the combined data across behaviors. Figures 2, 3, and 4 show a separation of target behaviors respectively.

Intervention (B1)

During the intervention (B1) condition, which included online instructional module training, a video-taped social session, and teacher mentoring, Christian increased to a mean of 98% across behaviors. In contrast, a significant increase in percentage of steps completed was recorded during the first treatment period with two consecutive data sessions of increasing percentages across two of the three behaviors (Starting 90; 78, Maintaining 100; 100). Ending a conversation however had a decrease in percentage on the second session with a percentage of steps complete score of 33%. It was noted that Christian did not acknowledge the other two peers when leaving the session due to maintaining a conversation with one of the three conversation partners at the end of the session. His percentage of steps completed rapidly increased to 100% on the third data session and remained stable across the next four data sessions. Following the first five treatment sessions, in order to obtain stable treatment conditions, the investigator extended the treatment measurement period for two additional sessions. During the two additional sessions, percentage of steps complete percentages remained stable with the following percentages: Starting 98 and 100, Maintaining 97 and 97, and Ending 100 and 100 respectively.

Return to Baseline (A2)

When the baseline condition (A2) was reintroduced, a drop in Christian's social initiations occurred. The mean for the withdrawal phase was 2.6% across all five data sessions. Following the second data session, a slight increase occurred for the target behavior of starting a conversation (See Sub Skill Analysis). Maintaining a conversation and ending a conversation remained stable at low rates of occurrences for percentage of steps complete.

Return to Intervention (B2)

The final phase (B2) return to intervention resulted in an increase in social conversations with a mean of 96% across all sessions. Due to Christian graduating from high school, resumption of treatment on the scheduled date did not occur. An additional four sessions was recorded upon his return. The four additional treatment sessions revealed a stable increase in percentage of steps complete with a final score of 100% across all three-target behaviors.

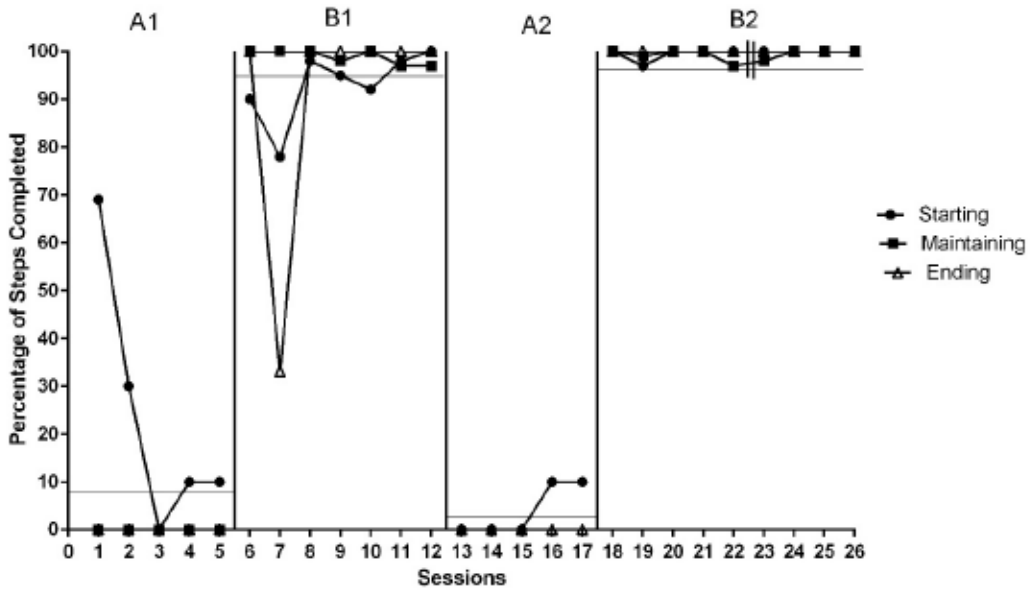

Figure 1. Combined data across phases

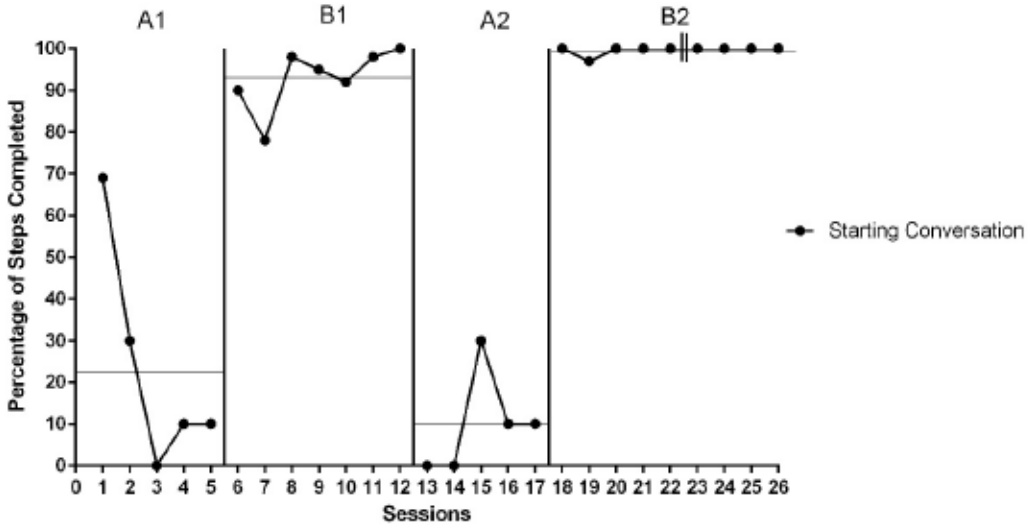

Figure 2. Starting a conversation

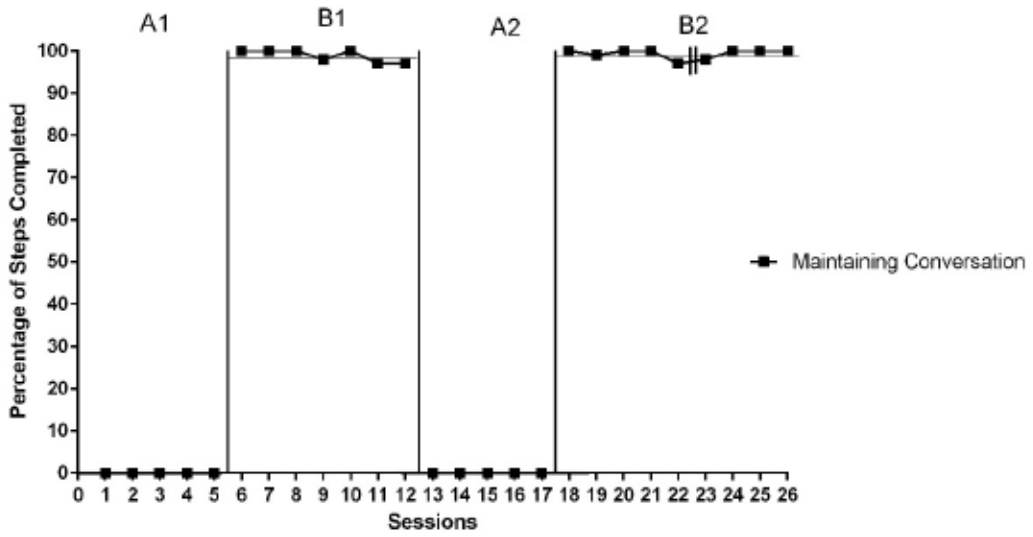

Figure 3. Maintaining a conversation

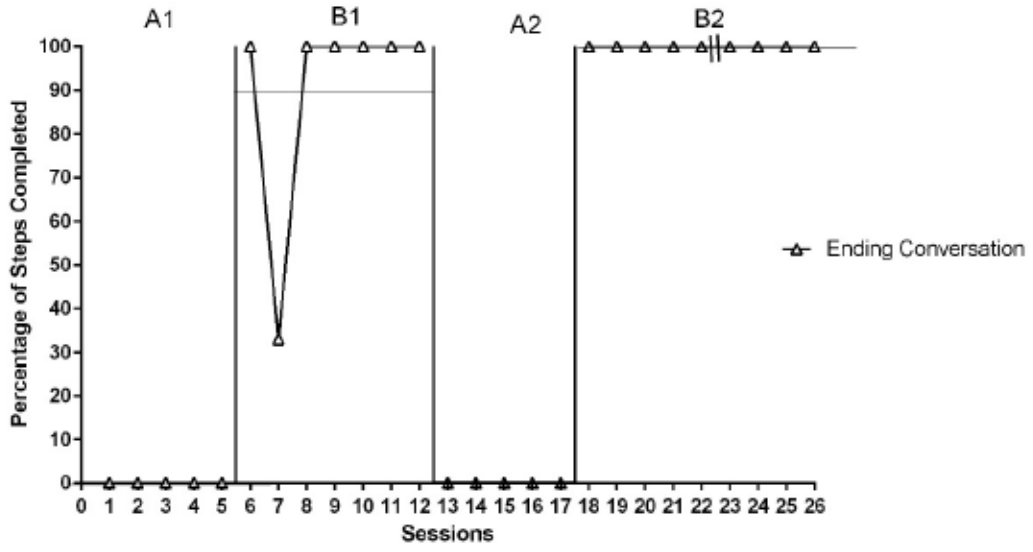

Figure 4. Ending a conversation

Sub-Skill Analysis

The starting a conversation module included three sub-skills: 'Greeting Others', 'Introducing Yourself', and 'Making Small Talk'. Figure 5 represents the results of each sub skill for the starting a conversation module during each phase of the study. During baseline conditions Christian exhibited little to no conversation skills. There was one

session in which Christian made eye contact with conversation partners, however he did not follow up with a conversation. Making eye contact was assessed in each sub-skill whether Christian made a vocalization or a signal that he wanted to converse.

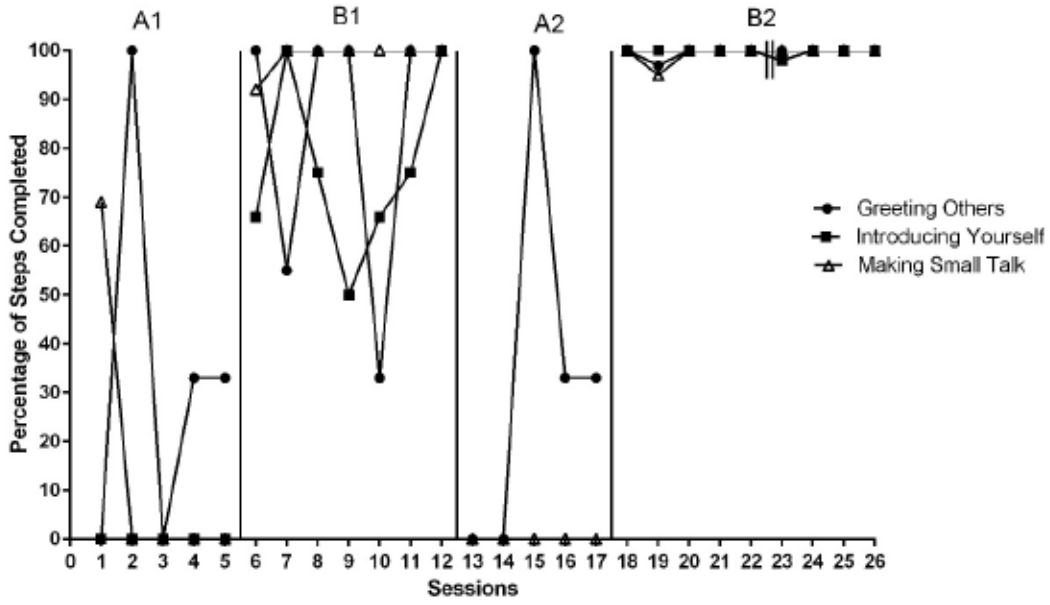

Figure 5. Starting a conversation sub-skill analysis

Figure 6 shows the results of the maintaining a conversation sub-skill analysis across phases. The sub-skills for the maintaining a conversation target behavior included: 'Listening Skills', 'Asking and Answering Questions', and Understanding Topics. For example, Christian would ask a peer "What are you studying in school? If the conversation partner responded and then asked Christian the same question or a question related to the topic, an opportunity to respond was assessed. If Christian responded appropriately, a tally was recorded on the observation sheet. During both baseline (A1, A2) conditions Christian exhibited no use of the targeted sub-skills. When the

intervention was introduced (B1) and reintroduced (B2) Christian's use of the skills increased significantly.

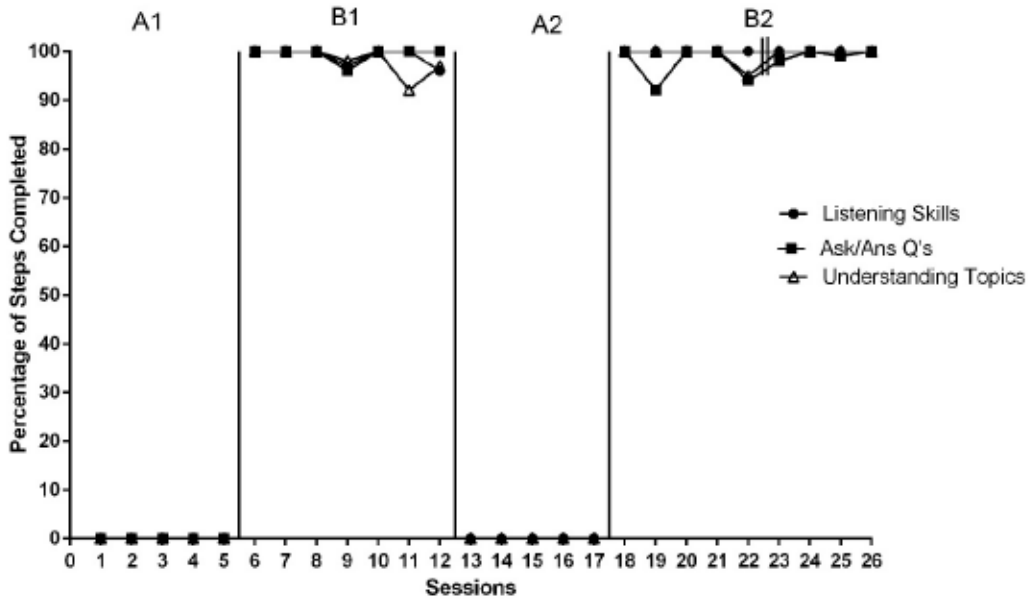

Figure 6. Maintaining a conversation sub-skill analysis

Ending a conversation data was consistent with starting and maintaining a conversation data. Ending a conversation data is represented in Figure 7. There was no sub-skill for ending a conversation. If Christian acknowledged the person's body language, which signaled the end of the conversation, he would end the conversation with an appropriate vocalization. For example, "It was nice talking to you!' or "I'll see you later." Christian exhibited use of the skills with a mean of 0% during both baseline phases and 90% during the first intervention phase with a slight increase to 100% during the second intervention phase.

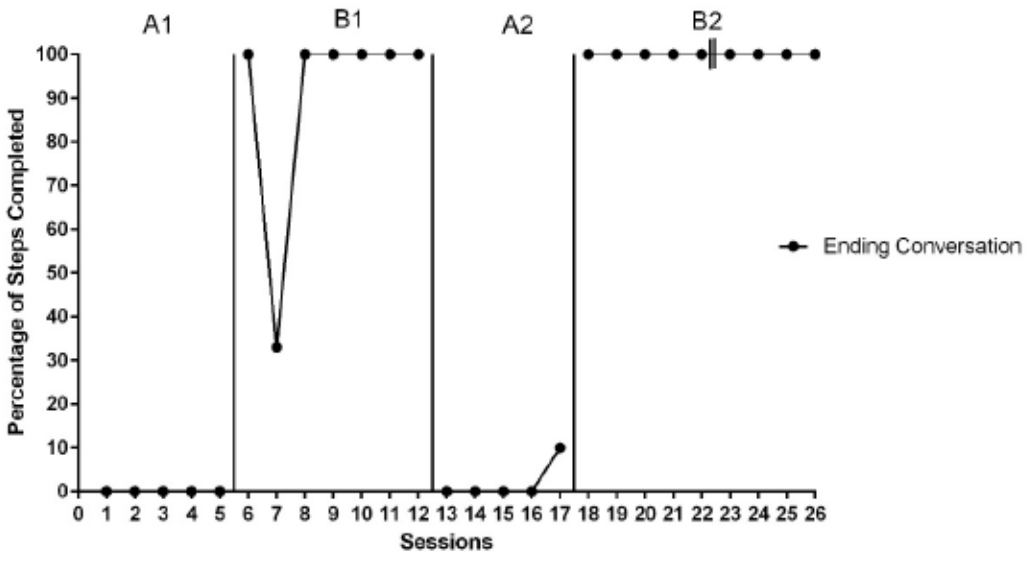

Figure 7. Ending a conversation sub-skill analysis

Social Skills Training Module Scale

Figure 8 shows the results of the social skills training module scale. During baseline, Christian had low rates of occurrence for all target behaviors assessed. There were noticeable positive trends throughout both baseline phases across behaviors. The increase in trends across both phases indicated that Christian made eye contact with conversation partners but never initiated a conversation. It was also noted that at one session, Christian included himself in a conversation, though he never greeted them, or introduced himself. He did not display the remainder of target behaviors during that session. IOA data was collected for 100%, 71%, 100%, and 55% of baseline and intervention phases, respectively across five data sessions per phase. Table 5 shows IOA across the social skills training module scale. The average baseline ratings for target behaviors were 26% during the first baseline phase and 25% during the second baseline phase. When the intervention was implemented improvement occurred during both phases. Visual analysis

between baseline and the training package intervention was assessed. For the three target behaviors a noticeable shift in the mean was observed during both intervention phases (B1: 92%, B2: 96%).

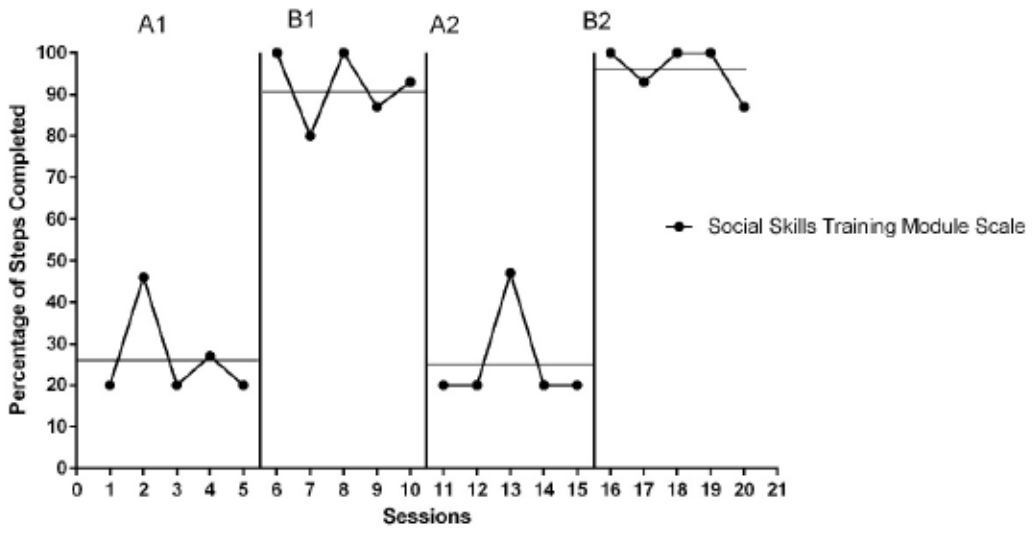

Figure 8. Social skills training module scale

Fidelity of Treatment

Fidelity of treatment was assessed on Christian. Appendix F provides a task analysis for fidelity of treatment for all four phases of this study. Fidelity of treatment was calculated by dividing the number of steps completed correctly by the total number of steps in the procedure then multiplying by 100. Fidelity of treatment was assessed for 100%, 71%, 100%, and 55% of baseline and intervention phases, respectively across five data sessions per phase. Table 5 shows IOA across the fidelity of treatment scale.

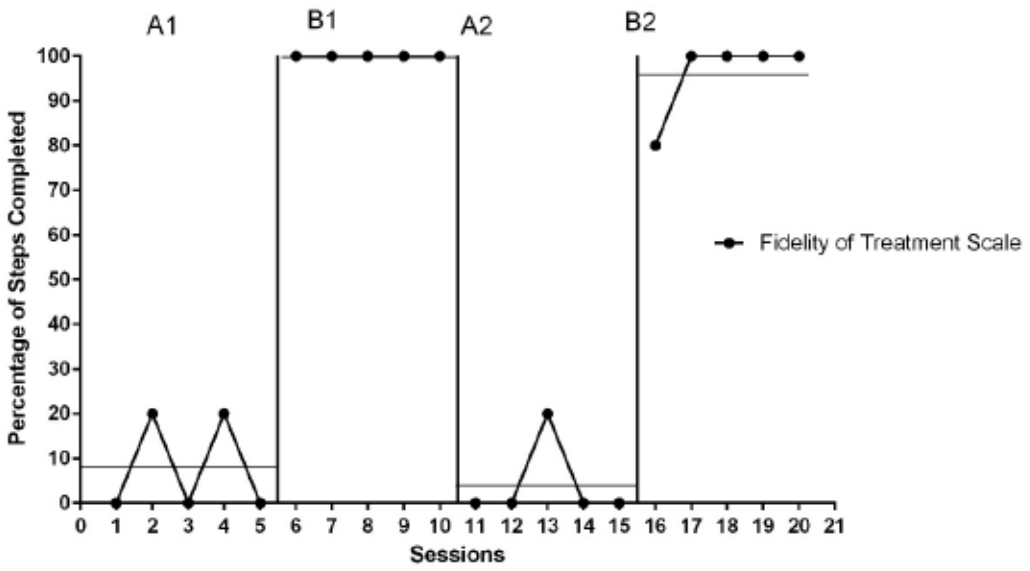

Figure 9. Fidelity of treatment scale

Interobserver Agreement (IOA)

Interobserver agreement (IOA) data was collected by trained master's students for this study. IOA measures included: each videotaped social session across behaviors, social skills training module scale, fidelity of treatment, and generalization. For IOA purposes for Christian, sessions were observed following a recorded social session at a later date. Immediately following IOA on target behaviors, IOA was completed for the social skills training module scale (See Social Skills Training Module Scale) and for fidelity of treatment (See Fidelity of Treatment). IOA was collected on generalization at the end of this study. IOA was collected in the same way for each measure in this study meaning the number of intervals with exact agreement (i.e., two observers recorded the same number of occurrences of response in a given 1- min interval) were divided by the total number of intervals and multiplied by 100 to obtain a percentage. Table 5 provides the summary of

IOA across phases of target behavior displayed by Christian. IOA for the social skills training module and fidelity of treatment are discussed in their corresponding section.

Table 5. Interobserver Agreement (IOA)

IOA	Baseline (A1)	Intervention (B1)	Withdrawal (A2)	Return to Intervention (B2)
Christian	100%	99%	100%	100%
Social Skills Module Training Scale	100%	100%	100%	100%
Fidelity of Treatment Scale	100%	100%	100%	100%

Consumer Satisfaction

The participant and the participant's parents were provided a consumer satisfaction survey upon completion of the final data day. The survey consisted of six questions that were directly related to the study. The surveys ratings ranged from one to five, with one strongly disagreeing and five strongly agreeing. There was a total of 30 points that would provide 100% satisfaction. Christian rated himself as 80% satisfied. Christian's mother's rankings corresponded to 80% satisfaction with acquisition of skills from the start of the study to the end while Christian's father's ratings corresponded to 86%.

Generalization

Generalization probes were conducted across Christian's parents and Christian during all phases of the intervention. Christian and his parents were provided a self-management probe as a visual to assess acquisition of the target behaviors in various social settings.

The participant's parents were asked to provide one social session a week following training and video recorded social sessions on the campus. Each target behavior was identified on the probe in the form of a task analysis. Results from the probes were calculated by dividing the number of steps completed correctly by the total number of steps in the procedure then multiplying by 100. A trained graduate student and the primary investigator completed IOA for the generalization probes. The trained graduate student assessed Christian's parents probe while the primary investigator assessed Christian's probe.

The results from the probes showed varying data. Figures 10, 11, and 12 show the percentages of steps completed by both the participant and the participant's parents. There were a total of six generalization social sessions provided to the participant throughout the study. Refer to Appendices D, and E for the Generalization probes.

The 'Starting a Conversation' generalization data showed a mean average of 86% across all sessions. Of the provided sessions, five of the six sessions occurred during both intervention phases. The first three sessions showed exact agreement on the occurrence or nonoccurrence of the targeted social skills. Anecdotal notes provided by the parent were useful in determining variability within the remaining three sessions. The information provided by the parents suggested that Christian may or may not have greeted peers, introduced himself to peers, and made small talk. The final session in which a task analysis was completed, results show the greatest variability. It was noted on Christian's completed task analysis that he greeted peers and made small talk though he never introduced himself. His parents stated that he did greet his peers, and that he did not complete all of the required steps for introducing yourself. He made eye contact, and used

a pleasant voice when he spoke to the peers, however he did not state his name or shake conversation partners hands, which were the final two steps to complete the task. Figure 10 represents the 'Starting a Conversation' generalization probe results for each social session that was provided to the participant.

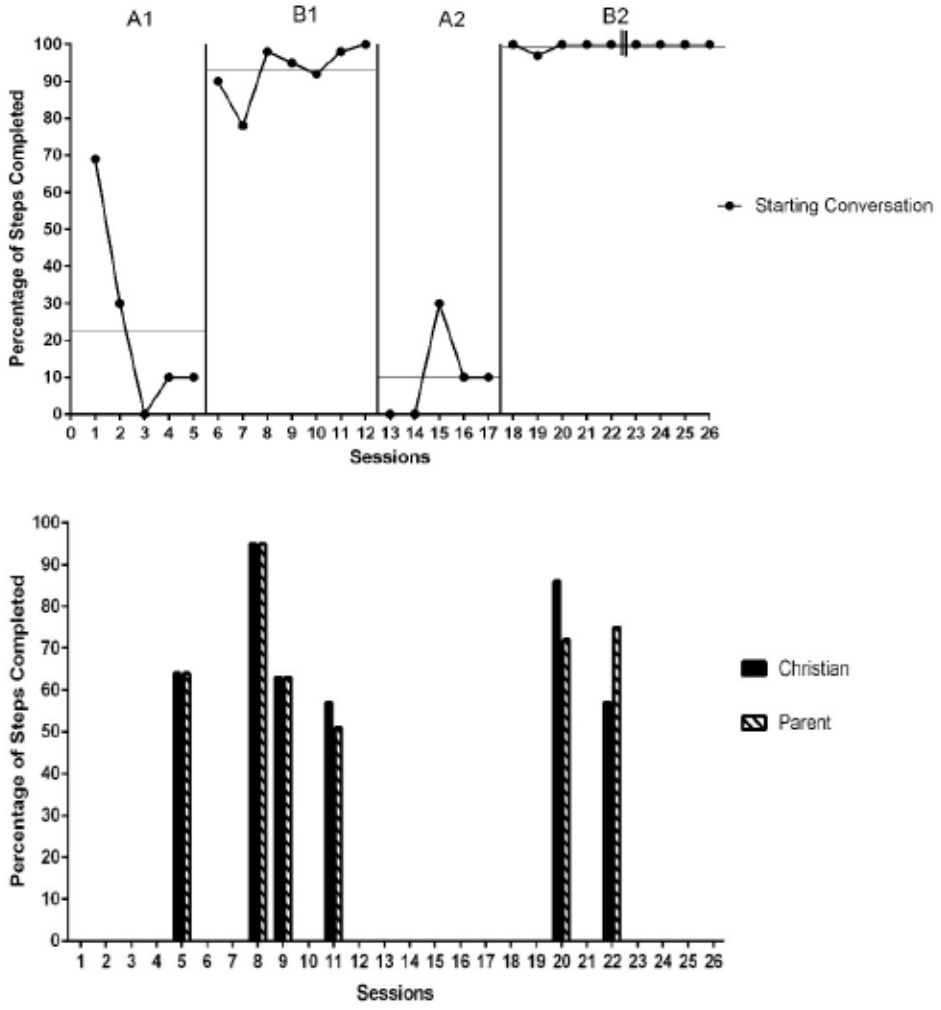

Figure 10. Starting a conversation generalization data

The 'Maintaining a Conversation Data' showed a mean average of 80% across all data sessions. 'Using Good Listening Skills'; 'Asking and Answering Questions'; and 'Understanding Topics' were the three targeted skills for 'Maintaining a Conversation'. During provided social sessions, Christians and his parents probe results varied across sessions. The first two sessions, Christian and his parents agreed on the occurrence or nonoccurrence of the steps within the task analysis Christian needed to complete with each conversation partner. During the third session Christian rated himself at 57% of the total task completed, whereas his parents rated him at 87%. In the provided notes for this session, Christian and his parents disagreed on at least one step per sub-skill in which Christian may or may not have completed the steps within the task as he was conversing with peers. The fourth session, IOA was at 100%. Again in the fifth session, Christian and his parents recorded varied results once the sessions were complete. The parents noted that Christian was maintaining conversations, however at times he was not looking at peers while conversing and there was no topic change because the conversation ended before Christian had the opportunity to change the subject. The final session, results varied yet again. There was discrepancy between Christian and his parent's results in relation to the third conversation partner. Christian recorded that he did use good listening skills with the third conversation partner. His parents recorded that he did not use good listening skills with the third conversation partner during that session. Figure 11 represents the 'Maintaining a Conversation' generalization probe results for each social session that was provided to the participant.

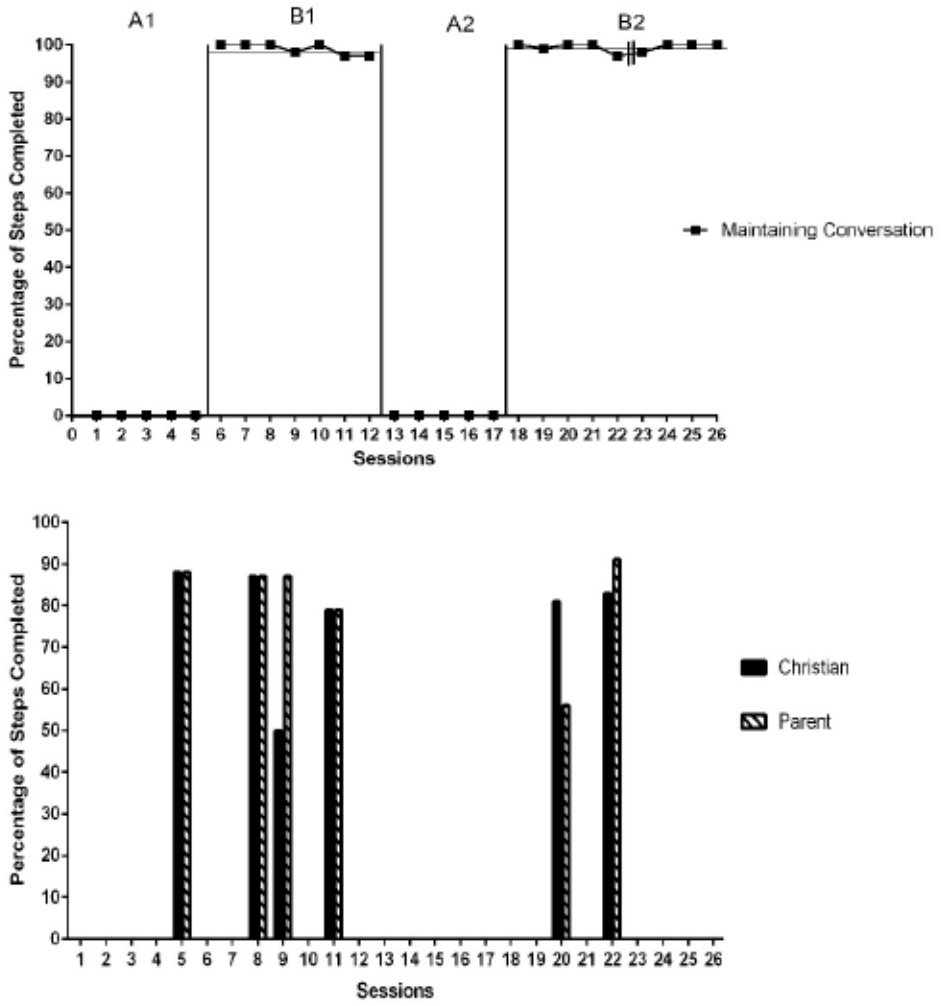

Figure 11. Maintaining a conversation generalization data

The 'Ending a Conversation' data showed a mean average of 83%. There were two skill steps Christian needed to complete in order to appropriately end a conversation with conversation partners. The probe results from both Christian and his parents showed variability within sessions. Within the total sessions provided, IOA data was at 100% for three of the six sessions. During the first session Christian stated that he did recognize cues that the conversation was ending whereas his parents recorded that he did not. Both did however agree that he ended the conversation with a phrase (e.g. "it was nice to meet

you!'). Similar results occurred during the fourth and sixth session. Figure 12 represents the 'Ending a Conversation' generalization probe results for each social session that was provided to the participant.

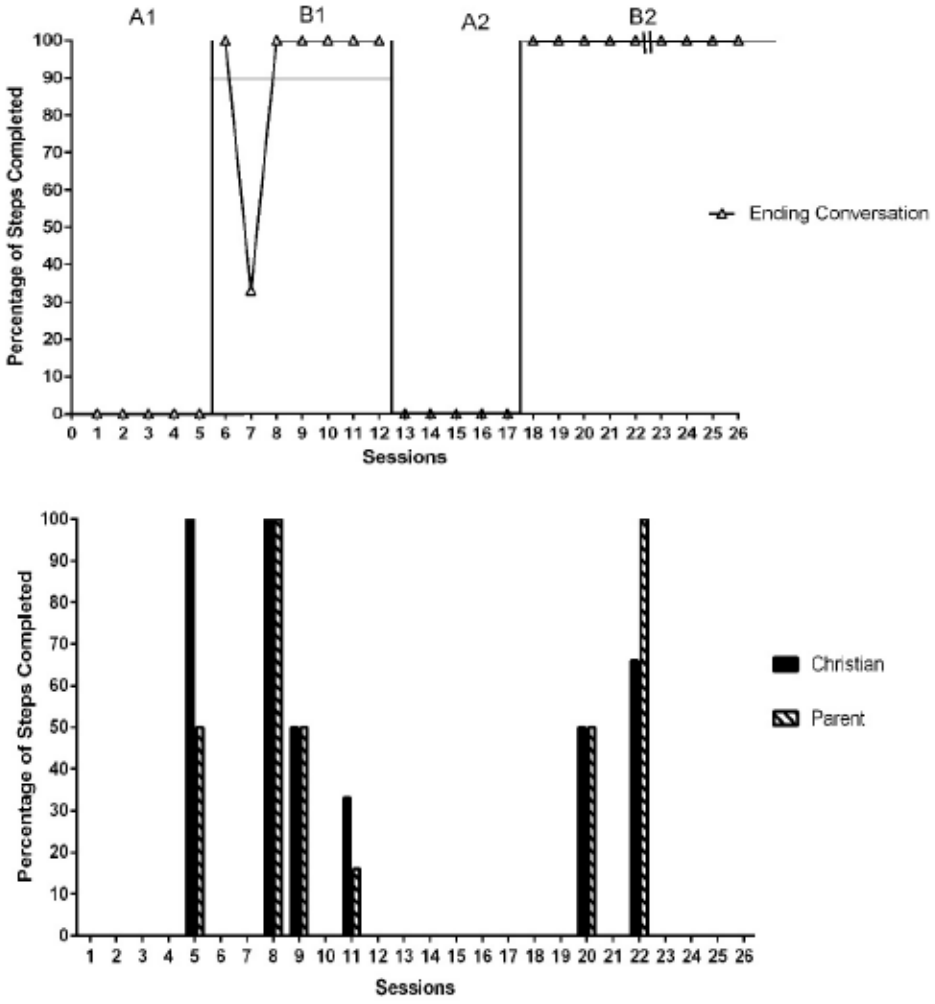

Figure 12. Ending a conversation generalization data

DISCUSSION

The purpose of this study was to evaluate the use of a video modeling intervention on social skills to teach three social behaviors to a graduating high school student diagnosed with autism spectrum disorder (ASD). Various skills were assessed utilizing an ABAB reversal design across behaviors with one participant with generalization probes throughout each phase.

This chapter will summarize the findings of the study with respect to the following research questions: (a) To what extent will social initiations increase after the online instructional module training? (b) To what extent does online instructional module training paired with self-monitoring increase the use of social skills to start, maintain, and end a conversation within a social setting? (c) To what extent will on-line video modules assist in the generalization of social interactions displayed by the student during social conversations? The remainder of this chapter will discuss implications of this study, future direction, and provide concluding comments.

Findings

The findings in this present study indicate a positive effect on socially appropriate behaviors when the social skills module training was introduced to Christian. Christian demonstrated an increase in starting, maintaining, and ending a conversation immediately, which showed a sizable difference in percentage of steps completed from baseline to intervention conditions.

Christian's data showed few to no communication patterns when presented with a social situation with conversation partners during baseline (as depicted in Figure 1). Immediately following training, Christian was presented with a social situation to demonstrate target behaviors. Social situations were used to evoke targeted behaviors that were captured using a video camera. Sessions were recorded and coded to determine the frequency of targeted behaviors during conversations with same aged peers.

Once the intervention was introduced, Christian's data showed a significant effect on all three targeted social skills. He initiated with each conversation partner upon entering the room, as well as introducing himself, and maintaining a conversation with peers. He recognized social cues that conversations were ending with conversation partners and made the appropriate vocalization to end conversations (Figures 4 and 7). There was one session (number 7) in which Christian did not recognize the cues of the other conversation partners exiting the room due to a continued conversation with a conversation partner in the room. The next session showed an immediate increase in the target skill ending a conversation to 100%; he ended a conversation with each conversation partner during the session. His data showed a significantly increased effect when the social skills module training intervention was provided which appeared to be effective for addressing his targeted social skill deficits.

According to Hume, et al. (2009), "prompt dependence impedes potential success in the independent performance of the skills during maintenance and generalization activities" (p.1331). In addition, prompt dependence reduces the student's level of participation increasing learned helplessness behaviors (Hume, et al., 2009). A prompt component was added as part of the treatment package for Christian. The prompt

component included two parts: (1) vocal prompt to initiate conversation and (2) written prompt from primary researcher. Christian required one written prompt during session 7, as he was focused on completing a task on his computer, which was provided as an idiosyncratic reinforcer. This is important to note in research literature since individuals with ASD can become prompt dependent. In any case continued adult prompts will decrease the likelihood of a child's display of target skills. In turn, these skills have the possibility of not generalizing or continuing over time. Christian did not require more than one prompt to converse with peers during the videotaped social sessions, however his parents who provided generalization sites noted Christian required prompting during some opportunities he was provided. This study proved that prompt dependency may still exist for some participants.

For generalization purposes the participant was provided a visual prompt (Appendix H) in the form of a task analysis to use on non-module training days to remind him to engage in the social behaviors in his home/community setting with potentially meeting one person a week (See baseline, intervention, and generalization procedures). There appeared to be generalization of the skills across partners in social settings that were provided to Christian. Christian acquired the target skills quickly as measured during the videotaped training sessions. He maintained at a high level of performance of skills for the duration of the study according to parent report and completion of generalization probes by Christian and his parents. An explanation for this rapid increase in social skills use and apparent generalization was the settings in which the conversations were provided (i.e., frequency of church groups, trips to places where his parents were frequently familiar with).

At the start of the next training session, the primary investigator to promote growth provided teacher mentoring and continued development of participant's use of skills during videotaped social sessions. Teacher mentoring consisted of a 2-3 min conversation with Christian to discuss several topics. Topics included: the training modules, steps required to use a skill appropriately (i.e., making small talk, understanding topics), becoming an adult, graduating from high school, etc. Teacher mentoring occurred throughout the study and generalized outside the training sessions. Teacher mentoring was also provided to Christian during generalization sessions once the session was completed and record of data was not present. Christian and his parents were not allowed to share information recorded on the generalization sheets. The information provided by both Christian and his parents was later recorded for IOA purposes by the primary investigator and a trained graduate student.

Implications

This study supports and extends previous findings on video modeling interventions for individuals with ASD, with the current study contributing to the literature in several ways. The results indicate a positive effect on various social skill deficits amongst college students diagnosed with ASD. These findings are similar to the current literature on video modeling and video self-monitoring for young children with ASD in school settings (Bellini, 2007; Charlop-Christy, Le, & Freeman, 2000; Charlop-Christy & Daneshvar, 2002; Deitchman et al., 2010; Nikkopoulus & Keenan, 2003; Scattone, 2007; Taylor, Levin, & Jasper, 1999). What withdraws this study from the current literature is (a), the complexity of the interventions used in this study to teach targeted skills, and (b)

college students with ASD. This study offers a promising avenue for addressing the unique needs of postsecondary students with ASD (Mason et al., 2012). Majority of studies utilizing video modeling (See Chapter 2) addressing social skills deficits by individuals with ASD in terms of play, daily living skills, and on-off task behavior. This study however surpasses the context of social skills training for higher functioning adults with ASD in the postsecondary setting.

There is only one previous study (Mason, Rsipoli, Ganz, Boles, & Orr, 2012) that utilizes video modeling for young adults with ASD in postsecondary settings. The evaluation component of this study provided a limitation, which did not include a direct evaluation of the socials skills, assessed. Mason et al. used a likert scale, which provided impressions of improvement. This current study extends the research conducted by Mason et al., by (a) teaching socially appropriate behaviors through an online module that included video modeling, (b) direct evaluation of social skills through teacher mentoring and (c) the use of a likert scale not being the only measure in this current study. This study provides additional empirical data for college students with ASD.

Limitations

There were a number of limitations in this study. First, there were several technical issues with the training modules. During the first baseline phase the module for 'starting a conversation' was not available to the participant via the online account so the participant viewed the power point presentation. This resulted in the pre and posttest for the skill being postponed and the participant wanting to fix issues within the Power Point he felt were necessary for the next person viewing the module. This had little effect on the

participant's behavior.

Secondly, a likert scale was used to measure two components of this study. Although likert scales are the most universal method of survey collection, they pose several limitations. First, the likert scale only gives 5-7 options to choose from. Secondly, the space between each choice cannot adequately be equidistant. Thirdly, it may not measure the true attitudes of the persons completing the scale. Lastly, it is unlikely that the responses rely heavily on previous questions. Although there were several other measurement components in this study, the likert scale was used to assess the acquisition of the social behaviors that were instructed during the module training, as well as consumer satisfaction. Both scales utilized a 5-pt Liker Scale. IOA data was collected for the social skills training module scale for all phases in the study (See Results).

Thirdly, although results show experimental control was obtained, it is difficult to determine the relative effects of the VM and the prompt with Christian during recorded social sessions. The prompt was part of the initial training package and was only to be used if Christian went a substantial amount of time (2 -3 min) before conversing with conversation partners during the recorded sessions.

Fourth, although results show experimental control was obtained, it is difficult to determine the relative effectiveness of the VM and the teacher-mentoring component. Teacher mentoring was provided to Christian throughout the study, which included a 2-3 min conversation of the skills he learned from the modules, follow-up questions taken directly from the training module, and review of the task analysis on target behavior. Teacher mentoring was also provided by Christian's parents during generalization sessions throughout the study.

Fifth, Deficits in socio-communicative skills may send unintended messages of disinterest to communicative partners; individuals with ASD often experience social exclusion (as cited in Mason et al., 2012). This study is unique in that Christian was aware of his social deficits and was adamant in learning social appropriate skills prior to attending college. For that reason, it is difficult to determine if the VM intervention was successful in Christians' development of the targeted social skills.

Sixth, Christian requested to view alternative pre and posttest during the module training after each target behavior was presented. He knew the answers to the questions on each modules pre and posttest and asked for more "difficult" questions. During one session, he answered all the questions before the primary researcher read the questions to him aloud. He became frustrated when the primary researcher read each posttest question for the maintaining a conversation-training module.

Seventh, this study is limited by having one participant. Future research should consist of the examination of this intervention in a multiple baseline across participants' design.

Eighthly, training of generalization procedures to the participants' parents was not adequately examined. The parents of the participant who provided social situations in the uncontrolled generalization setting aired frustrations with the primary researcher. The parents felt that the provided probe for the generalization setting was not presented in a manner in which they could follow during the social situations. While pleased with the study, and noticeable changes within the participant, the parents felt that more training was needed prior to presenting their child with social situations. Future research should consist of adequate training of all participants involved in a study.

Lastly, there was no maintenance data collected due to time restrictions: Christian

graduating from high school, and going on vacation. When Christian returned from vacation, additional four data sessions took place (See Results). Christian exceeded the four data sessions with 100% of the percentage of steps complete. While this was not a true measure of maintenance, the data proves Christian was able to generalize after a two week hiatus.

Future Research

This study provided valuable information of the effectiveness of VM for individuals with ASD attending postsecondary institutions. There are several directions for future research that should be considered. First, as evidenced by this study, VM of socially appropriate behaviors may be an effective intervention for college students diagnosed with ASD. However, even though Christian responded the same to the VM package, future research is needed to determine which component of the VM intervention exerted control over the behavior. Scattone (2008) constructed a VM intervention with a young boy with Asperger's syndrome that included social stories with titles identifying targeted behaviors as well as audio reinforcement at the end of the sessions.

Secondly, future research is needed to identify and explore other social behaviors applicable to college students that can be taught through VM.

These finding should be replicated and extended (i.e., more than one participant, settings, and other behaviors) with this college students diagnosed with ASD. This would include a more systematic analysis of targeted behaviors and maintenance of target behaviors across participants, settings, and other socially appropriate behaviors. This study provided positive results of three targeted social behaviors across one participant.

Replication is still warranted to provide better experimental control such as a multiple baseline across settings could provide better experimental control and generalization effects.

Thirdly, future direction should assess social skills in a more naturalistic setting. Contrived social situations were provided to the participant to determine the level of social interaction in both the controlled setting and generalization sites provided by the participant's parents. Even though the results across the controlled setting and generalization settings, future research should be evaluated in more naturalistic environments (i.e., library, cafeteria, and classroom).

Fourthly, future research is needed to determine how much involvement is required to assist college level students in learning socially appropriate behaviors. Teacher mentoring proved to be a needed asset with the participant in this study. Conversations with the primary investigator and the participant resulted in a lasting friendship that carried over the participants' first semester in college. The participant contacted the primary investigator for assistance in calendar set up, study times, as well setting up calendar and email on all technological devices. Future research should include anecdotal note taking to assess the relationship between participant and investigator. Research in this area may assist in how instructors are trained prior to training individuals with ASD in college settings.

Summary

The purpose of this study was to examine the effects of video modeling (VM) with an adolescent with ASD, in order to improve conversational skills using on-line

instructional modules, self-monitoring, modeling of socially appropriate skills, and provided coaching opportunities within a controlled setting. The results demonstrated increased social skills across each target behavior exhibited by Christian. VM was utilized to teach socially appropriate behaviors to a young student with ASD as part of a treatment package that included prompting, teacher mentoring, and generalization. These findings surpass the current literature on VM provided for young children to young adults who attend postsecondary institutions. This study also provides a basis where multiple lines of research can be addressed. Future research is needed to replicate the findings of this study and to more fully investigate VM as a practical intervention for adults with ASD attending college.

Follow-Up

Two months after the study concluded, I met with Christian to discuss the upcoming semester in college and for general conversation. He told me that his summer was extremely busy and he had not put much thought into what classes he would be taking since it was his first semester in college. He stated "I don't know what classes I am taking." "All I know is that I'm going". I then asked how he did on his ACT since I administered the test to him but had not seen him to discuss the results. He stated that he was pleased with his results and that he knew he was going to pass although he was "extremely nervous". Christian wants to become a graphic designer so that he could make video games that teach social skills to children with Autism. He stated that "everyone should be aware of their deficits, even if it makes them weird to others."

I met with Christian again shortly after he started college as a courtesy check and

ask him to be a part of a study that I was getting ready to start in a few weeks. After describing the study to Christian he immediately seemed interested and wanted to know how he could be a part of it. In exchange for being a part of the study, I agreed that I would meet with him weekly to check his calendar and hold him accountable in school. When describing his role for this new study in which he was going to be a part of, he described his role as the "son teaching the brother what his father (me) taught him. The new study included using Christian as the teacher mentor much like my role when I was working with him. Christian was so excited to work with the new student to teach him the skills he learned he immediately requested to view the modules again so that he could be prepared to meet the new participant for the study.

Once the study began Christian and the new participant became friends instantly. The conversations between Christian and the young man have been meaningful. The conversation are meaningful to the current study because an opportunity for both young men to build a lasting friendship much like the relationship Christian and I built was applied. During video recorded sessions, Christian would ask rich, meaningful questions as they were directly related to the module and provide positive feedback such as: "You should really pay attention" or "I know the videos are boring, but trust me they help".

To conclude the follow-up, Christian is doing well in college. He requires continued support and prompting and will most likely require assistance throughout his college career. The academic rigor got the best of Christian so he reduced his schedule form twelve credit hours to six credit hours for the fall term. The classes he decided to keep are directly related to the major he is planning to pursue. He knows he has to take all courses that are required and plans to take those courses one class at a time. He has

been a great asset to the current study in which he proved great positive feedback to the participant. He asks related questions, and relates his experiences to learning social skills often. I am sure we will continue to watch Christian mature as he goes through college and I wish nothing but the best for him.

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APPENDICES

Appendix A. Permission Forms

PARTICIPANT CONSENT

The Use of the Social Skills Module Training to Teach Appropriate Communication Skills to a Student with Autism

Dear Participant,

Missouri State University supports the practice of protection for human participants taking part in our research programs. The following information is provided for you to decide whether you wish to participate in the present study.

What is the purpose of the project?

The purpose of this project is to use a combination of on-line instruction, self-management to advance current knowledge and the state of practice related to teaching social communicative skills, problem solving, and organizational skills in community settings to adolescents and young adults with autism or other disabilities. These skills will allow the participants to improve participation in the community such as school, places of employment, and leisure activity settings (e.g. stores, malls, restaurants). In addition these skills could lead to establishing and maintaining gainful relationships with family members, friends, and members of the community. Specifically, this project will address the following research objectives:

1) Teach communicative skills, problem solving, and organization skills in an effort to allow the participants to lead more independent lives.

2) Establish and collect data on training procedures for home and community-based settings to increase independence and engagement in selected environments.

3) Implement individualized interventions targeting interpersonal skills and independence in community settings using instructional modules; monitor interventions, and provide consultation and feedback to participants.

What are the behavioral assessments?

Behavioral assessments in this study will include multiple measures: interviews, direct observation, and rating scales. All interviews and observations will be conducted by a project staff trained in the assessments. The planning interview will be conducted with you (and maybe your parent) in order to gather preliminary information regarding goals for social, communication, problem solving, and organizational skills in home and community settings. This interview will require approximately 1 hour of your time. Sample topics of the interview include: (1) your goals for home and community recreational activities, secondary schooling, job searches, volunteer activities; (2) strengths and weakness that may influence goal attainment; and (3) selection of specific interpersonal skills for improving conversations, participation in community activities, problem solving, etc.

In order to assess social competence you will be asked to complete the Behavior Rating Inventory of Executive Function (BRIEF), which will require approximately 1 hour of your time. You may be asked to complete these rating scales both before and after participation in the instructional modules and intervention. Your parent/caregiver may be asked to complete this rating scale as well.

In order to assess your levels of independence and interpersonal skills, sessions will be video-recorded in the community setting to measure levels of participation/engagement.

Social validity will be measured through (1) checklists about the instructional modules and ; and (2) weekly consultations about the implementation of the plan.

What are the study procedures in which you will be involved?

You will work with project staff for about 1 hour, 2- 3 times per week for approximately 6-8 weeks including the following activities:

- Complete pre-assessments and interviews to gather information to set goals for social communicative skills, problem solving, and organizational skills in community settings.

- Direct observation and video recordings of skill implementation will be completed by project staff and/or service provider/teacher one to two times per week in applicable community setting. Coaching and data collection will occur during interaction opportunities. Feedback will be given immediately following each social interaction.

- The use of a task analysis will be provided to you for self-monitoring to assess implementation of targeted skills.

- Completion of the checklists to measure your opinion of the intervention will require approximately 5 minutes.

- Attendance at sessions two times per week to complete instructional modules, participate in skill coaching sessions, and/or utilize self-monitoring of targeted skills with project staff and/or designated service provider/teacher in a community setting.

What are the behavioral interventions?

Behavioral intervention is based on recommended practices, and will include instructional modules. Targeted skills will be identified based on the information obtained through interviews and assessments, as well as your self-indicated goals.

Instructional Modules: You will be asked to complete instructional modules as determined by the pre-assessments, interviews, and your indicated goals which may include skills in some or all of the areas including social communication, problem solving, and organization/self-monitoring

(e.g. starting conversations, expressing interests in others, following instructions, requesting help, planning community activities, decision making with peers, navigating environments etc.). Lessons will be accessed on-line, via computers and/or mobile devices with internet capabilities and will be completed in a face-to-face session with project staff or designated service provider/teacher, or on your own in a location of your choice.

Lessons will include activities such as sample scripts, video models, task analysis, and pre/post assessments. The lessons will be interactive and include graphics, animations, and questions throughout. We anticipate that each lesson will take approximately 30 minutes to complete.

Self-Monitoring: For the self-monitoring stage of the project, you will be issued a task analysis probe. This data would then be communicated via text messaging/email to the service provider and/or project staff. This information then helps the service provider and/or project staffs monitor progress and provide you with feedback.

What are the benefits and risks of you participating in the project?

All persons may benefit from participation in online instructional training and intervention. We expect to see improvements in overall levels of independence, social communication, and organization as well as improved interactions with family, friends, and community members. We foresee minimal educational or psychological risks for you by participating. One risk is the limit to confidentiality relevant to mandated reporting should any concerns about potential harm to self or others be identified.

What are confidentiality procedures?

All information obtained from assessment and interventions pertaining to you will be kept confidential in a locked file cabinet in Dr. Garrison-Kane's office, including all video recordings. Digitally stored information will be stored on a secured, encrypted server that is password protected. You will be assigned a participant number and all information pertaining to you will be identified by this number only. Information from assessments or observations will be viewed only by project staff and service provider/teachers/teachers and will not be shared unless upon your request in verbal or written reports to agencies that assists you.

Limits to this confidentiality include situations where we learn that you are danger of hurting yourself or another person, if you are in danger of being hurt by someone else or if content indicates any illegal activity. If this occurs we will let you and appropriate community professionals know about the situation for your well-being and safety.

You should be aware that even if you agree to participate, you are free to withdraw from the study at any time. If you do withdraw from this study, it will not affect your relationship with Missouri State University.

If you cancel permission to use your information, the researchers will stop collecting additional information about you. However, the research team may use and disclose information that was

gathered before they received your cancellation, as described above. All information pertaining to you will be stored as described above for 5 years after project.

Should you desire any additional information or have questions, please contact us at the numbers listed.

Sincerely,

Dr. L. Garrison-Kane

Professor, Counseling, Leadership & Special Education

Missouri State University

LGKane@MissouriState.edu

Mark Simmonds

Graduate Student, Special Education

Missouri State University

mark88@live.MissouriState.edu

Title of Project: Instructional Modules, and Self-Monitoring

Adults with ASD using On-line Instruction, Coaching, and Accessible Self-Management: Instructional Modules, and Self-Monitoring Study (Usability)

PARTICIPANT CERTIFICATION:

If you agree to participate in this study please sign where indicated, then tear off this section and return it to the investigator. Keep the consent information for your records.

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study and the use and disclosure of

information about me for the study. I agree to take part in this study. By my signature I affirm that I am at least 18 years old and have received a copy of this Consent and Authorization form.

I understand this means I will participate in interviews, assessments, completion of instructional modules, and self-monitoring. I understand that I will be observed and that information will be used to help the facilitator and MSU staff support me to be independent and engaged in the community (which may include schools, stores, restaurants, job sites, etc.). Intervention will be provided for social communication, organization, and/or problem solving skills, in home and community settings. I may be audio-taped and/or video-taped in all sessions to monitor progress and I will be given progress on my performance.

☐ I give permission for videos involving me to be used for training purposes and for presentations of research outcomes.

I also understand that my permission allows for observation of my performance both live and remotely with Bluetooth video streaming.

If I am a person with Autism Spectrum Disorder, I will provide confirmation of the diagnosis of ASD from a prior clinical evaluation or educational diagnosis.

Jonathan Chole

Print first and last name

Jonathan Chole 3/9/15

Signature Date

Email: jbcJohn10v10@gmail.com Phone: (417) 833-7305

PARENT CONSENT

The Use of the Social Skills Module Training to Teach Appropriate Communication Skills to a Student with Autism

Dear Parent:

Missouri State University supports the practice of protection for human participants taking part in our research programs. The following information is provided for you to decide whether you want your child to participate in the present study.

What is the purpose of the project?

The purpose of this project is to use a combination of on-line instruction, and self-management to advance current knowledge and the state of practice related to teaching social communicative skills, problem solving, and organizational skills in community settings to adolescents and young adults with autism or other disabilities. These skills will allow the participants to improve participation in the community such as school, places of employment, and leisure activity settings (e.g. stores, malls, restaurants). In addition these skills could lead to establishing and maintaining gainful relationships with family members, friends, and members of the community. Specifically, this project will address the following research objectives:

1) Teach communicative skills, problem solving, and organization skills in an effort to allow the participants to lead more independent lives.

2) Establish and collect data on training procedures for home and community-based settings to increase independence and engagement in selected environments.

3) Implement individualized interventions targeting interpersonal skills and independence in community settings using instructional modules; monitor interventions, and provide consultation and feedback to participants.

What are the behavioral assessments?

Behavioral assessments in this study will include multiple measures: interviews, direct observation, and rating scales. All interviews and observations will be conducted by a project staff trained in the assessments. The planning interview will be conducted with you (and maybe your parent) in order to gather preliminary information regarding goals for social, communication, problem solving, and organizational skills in home and community settings. This interview will require approximately 1 hour of your time. Sample topics of the interview include: (1) your goals for home and community recreational activities, secondary schooling, job searches, volunteer activities; (2) strengths and weakness that may influence goal attainment; and (3) selection of specific interpersonal skills for improving conversations, participation in community activities, problem solving, etc.

In order to assess social competence you will be asked to complete the Behavior Rating Inventory of Executive Functioning (BRIEF) on your child, which will require approximately 1

hour of your time. You may be asked to complete these rating scales both before and after participation in the instructional modules intervention.

In order to assess your child's levels of independence and interpersonal skills, sessions may be video-recorded in the community setting to measure levels of participation/engagement.

Social validity will be measured through (1) checklists about the instructional modules; and (2) weekly consultations about the implementation of the plan.

What are the study procedures in which your child will be involved?

Your child will work with project staff for about 1 hour, two times per week for approximately 6-8 weeks including the following activities:

- Complete pre-assessments and interviews to gather information to set goals for social communicative skills, problem solving, and organizational skills in community settings.

- Direct observation and video recordings of skill implementation will be completed by project staff and/or service provider/teacher one to two times per week in applicable community setting. Coaching and data collection will occur during interaction opportunities. Feedback will be given immediately following each social interaction.

- The use of a task analysis will be provided to participant for self-monitoring to assess implementation of targeted skills.

- Completion of the checklists to measure your opinion of the intervention will require approximately 5 minutes.

- Attendance at sessions two times per week to complete instructional modules, participate in skill coaching sessions, and/or utilize self-monitoring of targeted skills with project staff and/or designated service provider/teacher in a community setting.

What are the behavioral interventions?

Behavioral intervention is based on recommended practices, and will include instructional modules. Targeted skills will be identified based on the information obtained through interviews and assessments, as well as your self-indicated goals.

Instructional Modules: Your child will be asked to complete instructional modules as determined by the pre-assessments, interviews, and indicated goals which may include skills in some or all of the areas including social communication, problem solving, and organization/self-monitoring (e.g. starting conversations, expressing interests in others, following instructions, requesting help, planning community activities, decision making with peers, navigating environments etc.). Lessons will be accessed on-line, via computers and/or mobile devices with internet capabilities and will be completed in a face-to-face session with project staff or designated service provider/teacher.

Lessons will include activities such as sample scripts, video models, task analysis, and pre/post assessments. The lessons will be interactive and include graphics, animations, and questions throughout. We anticipate that each lesson will take approximately 30 minutes to complete.

Self-Monitoring: For the self-monitoring stage of the project, your child would be issued task analysis probes. This data would then be communicated via text messaging/email to the service provider and/or project staff. This information then helps the service provider and/or project staff monitor progress and provide your child with feedback.

What are the benefits and risks of your child participating in the project?

All persons may benefit from participation in the online instructional modules training and intervention. We expect to see improvements in overall levels of independence, social communication, and organization as well as improved interactions with family, friends, and community members. We foresee minimal educational or psychological risks by participating. One risk is the limit to confidentiality relevant to mandated reporting should any concerns about potential harm to self or others be identified.

What are confidentiality procedures?

All information obtained from assessment and interventions pertaining to your child will be kept confidential in a locked file cabinet at Dr. Garrison-Kane's office. Digitally stored information will be stored on a secured, encrypted server that is password protected. Your child will be assigned a participant number and all information pertaining to him/her will be identified by this number only. Information from assessments or observations will be viewed only by project staff and service provider/teachers/teachers and will not be shared unless upon your request in verbal or written reports to agencies that assists you.

Limits to this confidentiality include situations where we learn that your child is in danger of hurting themselves or another person, if your child is in danger of being hurt by someone else or indicates any illegal activity. If this occurs we will let you and appropriate community professionals know about the situation for your child's well-being and safety.

You should be aware that even if you agree for your child to participate, you are free to withdraw him/her from the study at any time. If you do withdraw from this study, it will not affect your relationship with Missouri State University.

If you cancel permission to use your information, the researchers will stop collecting additional information about your child. However, the research team may use and disclose information that was gathered before they received your cancellation, as described above. All information pertaining to your child will be stored as described above for 5 years after project.

Should you desire any additional information or have questions, please contact us at the numbers listed.

Sincerely,

Dr. L. Garrison-Kane

Professor, Counseling, Leadership & Special Education

Missouri State University

LGKane@MissouriState.edu

Mark Simmonds

Graduate Student, Special Education

Missouri State University

mark88@live.missouristate.edu

Title of Project: Instructional Modules, and Self-Monitoring

PARTICIPANT CERTIFICATION:

If you agree for your child to participate in this study please sign where indicated, then tear off this section and return it to the investigator. Keep the consent information for your records.

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study and the use and disclosure of information about me for the study. I agree for my child to take part in this study. By my signature I affirm that I have received a copy of this Consent and Authorization form.

I understand this means my child will participate in interviews, assessments, completion of instructional modules, and self-monitoring. I understand that my child will be observed and that information will be used to help the facilitator and MSU staff support your child to be independent and engaged in the community (which may include schools, stores, restaurants, job sites, etc.). Intervention will be provided for social communication, organization, and/or problem solving skills, in home and community settings. Your child may be audio-taped and/or video-taped in all sessions to monitor progress and I will be given progress on his/her performance.

☒ I give permission for videos involving your child to be used for training purposes and for presentations of research outcomes.

I also understand that my permission allows for observation of my child's performance both live and remotely with Bluetooth video streaming.

If my child is a person with Autism Spectrum Disorder, I will provide confirmation of the diagnosis of ASD from a prior clinical evaluation or educational diagnosis.

Barry Chole, Alicia Chole

Print first and last name

Barry J. Chole, ABChole 3/9/15

Signature Date

Email: barry@landerstipii.com Phone: 417-767-2201

Appendix B. Research Approval

OFFICE OF RESEARCH COMPLIANCE

(417) 836-4132
Web site: http://orc.missouristate.edu
Federalwide Assurance (FWA) #4733

To: Linda Garrison-Kane
Counseling Ldrshp and Special Ed
HILL 438 901 S National Ave Springfield MO 65897-0027

From: MSU IRB

Date: 10/16/2015

RE: Notice of IRB Exemption
Exemption Category: 1.Educational setting
Study #: 15-0416

Study Title: The Use of the Social Skills Module Training to Teach Appropriate Communication Skills to a Student with Autism

This submission has been reviewed by the Missouri State University IRB and was determined to be exempt from further review according to the regulatory category cited above under 45 CFR 46.101(b).

Investigator's Responsibilities:

If your study protocol changes in such a way that exempt status would no longer apply, you should contact the above IRB before making the changes.

CC:
Megan Boyle, Counseling Ldrshp And Special Ed
David Goodwin, Reading Foundations And Tech
Mark Simmonds, Counseling Ldrshp And Special Ed
Rose Mason, University of Kansas

Appendix C. Modified Data Collection and Interobserver Agreement (IOA) across target behaviors sheet

Name: **Baseline/Intervention:** **Session #:** **IoA Partner:**

Starting a Conversation Partial Recording Data Form

Operational Definition: Verbal initiation that prompts a social response between a participant and peer. "Making small talk" accounts for 2 exchanges between persons.

	Skill	Steps to Complete Skill	Minutes						Total Sub-skill	Total Skill
			1			2				
			A	B	C	A	B	C		
Starting a Conversation	Greeting Others	Look at the person								
		Pleasant Voice								
		"Hi"								
	Introducing Yourself	Look at the person								
		Pleasant Voice								
		"Hi, my name is____."								
		Shake Hand								
	Making Small Talk	Look at the person								
		Pleasant Voice								
		Comment or question directed towards peer								

SUB SKILL STEPS COMPLETED
GREETING OTHERS _____/_____

INTRODUCING YOURSELF _____/_____

MAKING SMALL TALK _____/_____

TOTAL SKILL STEPS COMPLETED
STEPS COMPLETED _____/_____ %
OF STEPS COMPLETED ____
AGREEMENTS:

DISAGREEMENTS:

IOA PERCENTAGE:

Name: **Baseline/Intervention:** **Session #:** **IoA Partner:**

Maintaining a Conversation Partial Recording Data Form

Operational Definition: Continuation of a conversation by responding to a question or comment made by peer after two exchanges has taken place on the same topic.

	Skill	Steps to Complete Skill	Minutes						Total Sub-skill	Total Skill
			1			2				
			A	B	C	A	B	C		
Maintaining a Conversation	Listen Skills	Focus/Pay Attention (eyes on/body on)								
		Body Language (nod head, smile)								
	Ask/Ans ?'s	Balanced, polite sincere questions								
		Answer questions on topic								
	Und. Topics	Stay on-topic								
		Change topic if conv. Stops for 5 sec.								

SUB SKILL STEPS COMPLETED
LISTENING SKILLS _____/_____

ASKING/ANSWERING QUESTIONS _____/_____

UNDERSTANDING TOPICS_____/_____

TOTAL SKILL STEPS COMPLETED
STEPS COMPLETED _____/_____ %
OF STEPS COMPLETED ____
AGREEMENTS:

DISAGREEMENTS:

IOA PERCENTAGE:

Name: **Baseline/Intervention:** **Session #:** **IoA Partner:**

Ending a Conversation Partial Recording Data Form

Operational Definition: Participant waits until peer has finished speaking, then excusing self with an appropriate phrase to end the conversation.

	Skill	Steps to Complete Skill	Minutes						Total Sub-skill	Total Skill
			1			2				
			A	B	C	A	B	C		
Ending a Conversation	Ending a Conversation	Pay attention to peers body language								
		End conversation appropriately								

SUB SKILL STEPS COMPLETED
ENDING A CONVERSATION
_____/_____

TOTAL SKILL STEPS COMPLETED
STEPS COMPLETED _____/_____ %
OF STEPS COMPLETED ____
AGREEMENTS:
DISAGREEMENTS:
IOA PERCENTAGE:

Appendix D. Social Skills Training Module Scale

1= Participant almost never initiates Or approaches peer; waits for someone to introduce participant	2	3=Participant rarely initiates Or approaches peer; hesitates to initiate conversation Or excessive staring; anxiety build	4	5=Participant approaches peer with verbal initiation (Hi, Hello) without conversation continuing.

Note. Starting Conversation

1= Participant does not continue a conversation with peer after a 5 second verbal pause has been given.	2	3=Participant rarely continues conversation by responding to a question or comment; may head nod, smile within 5 seconds.	4	5=Participant continues conversation with meaningful responses or comments made by peer within 5 seconds of a verbal pause.

Note. Maintaining Conversation

1= Participant does not recognize social cues (i.e. peer on phone, picking up personal items, verbally announces they are leaving) that ends a conversation	2	3=Participant recognizes social cues that ends a conversation but continues to talk.	4	5=Participant recognizes social cues acknowledging the end of the conversation. Waits for a pause, then excuses self, or gives an appropriate ending (i.e. nice talking to you, see you later) for peers exit from conversation

Note. Ending Conversation

Baseline/Intervention	**Session #**
IOA Partner:	**Date:**
Agreements	**Disagreements**
IOA percentage:	

Appendix E. Consumer Satisfaction

	Strongly Disagree	Disagree	Mildly Agree	Agree	Strongly Agree
1. The online modules were useful in assisting the participant with starting conversations in social settings.	1	2	3	4	5
2. The online modules were useful in assisting the participant with maintaining conversations in social sessions.	1	2	3	4	5
3. The online modules were useful in assisting the participant with ending conversations appropriately in social settings.	1	2	3	4	5
4. Teacher mentoring resulted in a strong or beneficial increase in the participant's acquisition of the three targeted conversation skills.	1	2	3	4	5
5. The participant benefited in conversing with peers while using the self-monitoring sheets as a reference in generalized settings.	1	2	3	4	5
6. I am very likely to recommend social skills training via online modules and self-monitoring to other persons with ASD.	1	2	3	4	5

Appendix F. Treatment Fidelity

Social Session Protocol	Implemented Y/N
1. Video shows student engaging in	

conversations with peers	
2. Peers are actively engaged in conversation (i.e., making comments, asking questions)	
3. Participant actively engaged in conversation; responds to peers (i.e., making comments, asking questions)	
4. Participant changes the subject appropriately (after a 5' pause)	
5. Participant ends conversation appropriately (i.e., recognizing he has to leave, recognizing peers have to leave)	
Total	/
Baseline/Intervention	Session #
IOA Partner:	Date:

Appendix G. Sample Conversation Topics and Questions

1. What are you studying at Missouri State?

2. Did you take an ACT before going to college? What were your scores?
3. How many classes are you enrolled in?
4. Have you ever heard of homeschool before?
5. How many times did you take your driver's license test?
6. Did you catch the game the other day?
7. That was a bad storm last night. Did you think it was?
8. Have you heard of a computer software program called Binder?
9. Are the dorm rooms a great place to live?
10. What are you involved in on campus?
11. Have you heard of Super Mario Wii?
12. How are you doing today?
13. What are some of your hobbies?
14. Any plans for the weekend?
15. What are you majoring in?

Appendix H. Generalization Scale of the Social Skills Training Module Participant Report Form

Starting a Conversation Participant Form

Directions: After a social interaction between you and a peer, tally 'yes' or 'no' on the following data sheet if you completed the step during interactions.

'Making Small Talk': I must respond to a question or comment made by my peer on the same topic two times.

Greeting Others ***Does not matter if I have met peer before***	**Peer 1**		**Peer 2**		**Peer 3**	
	YES	**NO**	**YES**	**NO**	**YES**	**NO**
1. Did I look at the person?						
2. Did I use a pleasant voice?						
3. Did I say, 'Hi' or 'Hello' ?						

Introducing Yourself ***Only if I have not met peer before***	**Peer 1**		**Peer 2**		**Peer 3**	
	YES	**NO**	**YES**	**NO**	**YES**	**NO**
1. Did I look at the person?						
2. Did I use a pleasant voice?						
3. Did I offer a greeting? Say, my name is…"						
4. Did I shake the person's hand?						

Making Small Talk	**1**		**2**		**3**	
	YES	**NO**	**YES**	**NO**	**YES**	**NO**
1. Did I look at the person?						
2. Did I use a pleasant voice						
3. Did I listen to what the other person was saying? (eye contact, body language)						
4. Did I wait for a break in the conversation and ask a question, or share my own thoughts on a topic?						

Maintaining a Conversation

Directions: After a social interaction between you and a peer, tally 'yes' or 'no' on the following data sheet if you completed the step during interactions.

Using Good Listening Skills	1		2		3	
	YES	NO	YES	NO	YES	NO
5. Did I focus and pay attention to what the other person was saying? (looking at the person, turning body/head towards the person)						
6. Did I use body language for understanding (nod head, smile, brief phrases)						

Asking and Answering Questions	1		2		3	
	YES	NO	YES	NO	YES	NO
1. Did I ask questions that were balanced, polite, and sincere? Avoid sarcasm or questions you know the answer to						
2. Did I answer questions by staying on topic? (Simply answer the question)						

Understanding Topics	1		2		3	
	YES	NO	YES	NO	YES	NO
1. Did I stay on topic? (make comments, ask questions, provide relevant answers)						
2. Did I change the topic if there was a break in the conversation (within 5 seconds) ******In order for the skill 'Understanding Topics' to count I must exhibit behaviors from 10a and 10b.******						
a. Did I choose a topic that is appropriate for time and place?						
b. Did I choose a topic that I am comfortable with?						

Ending a Conversation

Directions: After a social interaction between you and a peer, tally 'yes' or 'no' on the following data sheet if you completed the step during interactions.

Ending a Conversation	Peer 1		Peer 2		Peer 3	
	YES	NO	YES	NO	YES	NO
4. Did I pay attention to the body language of my speaking partner? (Signs they are done talking)						
5. Did I say an appropriate phrase to end the conversation for the environment? ("It was nice talking to you!" "Well, I've got to get to class." "Well I need to finish my work.")						

Appendix I. Generalization Scale of the Social Skills Training Module Parent Report Form

Starting a Conversation

Directions: Watch a social interaction between your child and a peer. Tally 'yes' or 'no' on the following data sheet if your child completed the step during interactions.
Definition for Conversation: Starting: A verbal initiation that prompts a social response between participant (your child) and peer. *'Making Small Talk'* accounts for two exchanges of words between participant and peer.

Greeting Others ***Does not matter if participant has met peer before***	**Peer 1**		**Peer 2**		**Peer 3**	
	YES	**NO**	**YES**	**NO**	**YES**	**NO**
6. Did he/she look at the person?						
7. Did he/she use a pleasant voice?						
8. Dis he/she say, 'Hi' or 'Hello' ?						

Introducing Yourself ***Only if he/she has not met peer before***	**Peer 1**		**Peer 2**		**Peer 3**	
	YES	**NO**	**YES**	**NO**	**YES**	**NO**
5. Did he/she look at the person?						
6. Did he/she use a pleasant voice?						
7. Did he/she offer a greeting. Say, my name is…?"						
8. Did he/she shake the person's hand?						

Making Small Talk	**1**		**2**		**3**	
	YES	**NO**	**YES**	**NO**	**YES**	**NO**
7. Did he/she look at the person?						
8. Did he/she use a pleasant voice						
9. Did he/she listen to what the other person was saying? (eye contact, body language)						
10. Did he/she wait for a break in the conversation and ask a question, or share own thoughts on a topic?						

Maintaining a Conversation

Directions: Watch a social interaction between your child and a peer. Tally 'yes' or 'no' on the following data sheet if your child completed the step during interactions.
Definition for Conversation:**Maintaining:** Continuation of a conversation by responding to a question or comment made by peer after two exchanges (making small talk) has taken place on the same topic. If conversation does not continue after two exchanges, only count steps towards making small talk. Topic must be the same to apply to 'Maintaining a Conversation'.

Using Good Listening Skills	**1**		**2**		**3**	
	YES	**NO**	**YES**	**NO**	**YES**	**NO**
11. Did he/she focus and pay attention to what the other person was saying? (looking at the person, turning body/head towards the person)						
12. Did he/she use body language for understanding (nod head, smile, brief phrases)						

Asking and Answering Questions	**1**		**2**		**3**	
	YES	**NO**	**YES**	**NO**	**YES**	**NO**
3. Did he/she ask questions that were balanced, polite, and sincere? Avoid sarcasm? Questions he/she knew the answer to?						
4. Did he/she answer questions by staying on topic? (Simply answer the question)						

Understanding Topics	**1**		**2**		**3**	
	YES	**NO**	**YES**	**NO**	**YES**	**NO**
3. Did he/she stay on topic? (make comments, ask questions, provide relevant answers)						
4. Did he/she change the topic if there was a break in the conversation (within 5 seconds) ******In order for the skill 'Understanding Topics' to count he/she must exhibit behaviors from 10a and 10b.******						
a. Did he/she choose a topic that was appropriate for time and place?						
b. Did he/she choose a topic that they were comfortable with?						

Ending a Conversation

Directions: Watch a social interaction between your child and a peer. Tally 'yes' or 'no' on the following data sheet if your child completed the step during interactions.

Definition for Conversation:
Ending: Participant waits until peer has finished speaking, then excuses self with an appropriate phrase to end conversation.

Ending a Conversation	Peer 1		Peer 2		Peer 3	
	YES	NO	YES	NO	YES	NO
9. Did he/she pay attention to the body language of their speaking partner? (Signs they are done talking)						
10. Did he/she say an appropriate phrase to end the conversation for the environment? ("It was nice talking to you!" "Well, I've got to get to class." "Well I need to finish my work.")						