

Social Skills Instruction for Students with Autism Spectrum Disorders:
Examining the Impacts of Social Skills Instruction Delivered Through a Peer Network

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Dedication

I would like to dedicate this dissertation to Dr. Joe Hatcher. Joe, I'm confident I wouldn't be where I am today if it wasn't for your mentoring and guidance. You taught me, challenged me, and inspired me. Most of all, you believed in me when I didn't believe in myself. Thank you for always pushing me to abandon my comfort zone to reach my potential. I will consider my career a success if I inspire someone half as much as you've inspired me.

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Abstract

Although there is a push to include students with autism spectrum disorders in the general academic context, students with autism are often not fully included in the social environment of schools. Even when students with autism are in the same settings as their typically developing peers, they often have few social interactions with their peers (e.g., Carter, Hughes, Guth, & Copeland, 2005). One reason for the dearth of social interactions that students with autism have during the school day may be related to deficits in social skills which can interfere with interactions with peers. Peer networks, a type of peer-mediated intervention, have been shown to be effective in increasing the social contacts and relationships of students with disabilities. In peer networks, gains in social interactions are accomplished by providing training to general education peers who comprise a social network for the student with a disability (SWD) outside of the classroom setting. However, the literature on peer networks varies as to if specific social skills training for the SWD is included and often does not fully examine specific or even general social skills deficits of the SWD. This study examined the effectiveness of a peer network plus intervention which incorporated an explicit social skills training component within a peer network framework. Four participants with an educational diagnosis of autism participated in a 10 week peer network intervention. A social skills training component was added to the peer network systematically. The purpose of this study was to examine the effectiveness of the peer network plus intervention for (a) enhancing targeted social skills of the students with autism, (b) enhancing broader social skills as measured by multiple social skill and adaptive questionnaires, and (c) increasing the number of social contacts, friendships, and interactions students with autism have in high schools. In addition, the social validity of this intervention was measured in order to determine the feasibility and acceptability for use in schools and by school personnel.

Finally, the study examined the sensitivity of the Autism Social Skills Profile (ASSP, Bellini & Hopf, 2007) for use as a progress monitoring tool with these interventions.

Using a multiple baseline across participants design, this study demonstrated that the social skills component of the peer network plus intervention was effective at improving the targeted social skills of all four participants. Two independent coders found *Strong Overall Evidence* for improvements in social skills when the social skills component was added for each participant. There was *Moderate Overall Evidence* for the impact of the social skills training component on the number of interactions students with autism had with their peers during the network meetings. Students with autism, peers without disabilities, and school staff interventionists all rated the intervention favorably. The ASSP was not consistently sensitive enough to detect improvements in social skills for all participants. Implications of the study, as well as limitations and directions for future research, are discussed.

Chapter 1

Introduction

In recent years, increased attention and research focused on children and adolescents with autism spectrum disorders (ASD) has been pronounced. We now know that autism affects many more children than was previously believed. According to the Centers for Disease Control, 1 in 68 children in the United States have an ASD (Centers for Disease Control and Prevention, 2014). Autism spectrum disorders impact many areas of functioning including social communication and restricted and repetitive interests and behaviors (American Psychiatric Association, 2013; Wilczynski, Menousek, Hunter, & Mudgal, 2007). One of the core deficits associated with ASD is difficulty with social interactions with peers (American Psychiatric Association, 2013; Bellini, Peters, Benner, & Hopf, 2007). Difficulties with social interactions may account for the limited number of students with ASD that are fully included in the general school population (Bellini et al., 2007). Research has shown that students with disabilities, in general, and students with ASD, in particular, have fewer interactions at school with their peers than do their typically developing counterparts (Carter, Hughes, Guth, & Copeland, 2005; Chung et al., 2007; Elliott & Gresham, 1993; Hauck, Fein, Waterhouse, & Feinstein, 1995).

One potential solution for increasing the number and quality of social interactions that students with autism spectrum disorders have in schools is to target social skills for improvement. In general, there is still a dearth of research on effective social skills instruction for students with autism spectrum disorders, especially students who are in secondary schools. There are approaches that have been shown to be more effective including the use of applied behavior analysis techniques, antecedent procedures, self-management strategies, video modeling, and peer-mediated interventions (Reichow & Volkmar, 2010). Peer-mediated

interventions are especially suitable for improving the social relationships of children with ASD because they allow the student with ASD to practice social skills in a natural environment, with a reduced need for adult involvement (Harrower & Dunlap, 2001). This is especially important in middle and high school, where it is less socially appropriate for students to be with adults throughout the day. One type of peer-mediated intervention that has shown positive effects is peer networks (Carter et al., 2013; Garrison-Harrell, Kamps, & Kravits, 1997; Haring & Breen, 1992; Harrower & Dunlap, 2001; Kamps et al., 1992; Kohler et al., 1995). Peer networks involve finding a group of typically developing peers to form a social group around a student with a disability (Carter & Asmus, 2009). Peer network interventions involve weekly meetings of the peer network in which students participate in social activities (e.g., play a game, eat lunch and chat) and discuss direct social contacts and interactions they have had with the SWD outside of the meetings during the week (Carter et al., 2013). These interventions have been shown to increase the SWD's number of social contacts and friendships, as reported by teachers (Carter, Brock, Cooney, & Weir, 2012). One limitation of peer networks studied to date is that social skills for the SWD are not explicitly targeted as part of the intervention. While outcomes and gains in social interactions have been documented, it is possible that additional gains could be seen if a social skill training component was included as part of the peer network.

The current study added to the field by evaluating the peer network plus intervention, which is a peer network (Carter et al., 2013; Carter & Asmus, 2009) with the inclusion of a targeted social skills training component. Four high school students with an educational diagnosis of autism participated in the study. School staff members were identified and trained to lead the peer networks and facilitate a social skills training component after this phase was implemented. Skill training was based on the Skillstreaming model (Goldstein & McGinnis,

2011) and social skills training steps used in previous research (Ogilvie, 2011; Sansosti, 2010). For each targeted skill, explicit steps were explained, a discussion about the skill was facilitated by the adult interventionist, and the peer network members modeled appropriately using the skill. Skills targeted varied by participant and were chosen based on perceived need. Specifically, both case managers and parents completed the Autism Social Skills Profile (ASSP; Bellini & Hopf, 2007). Items that were rated as *Never* or *Sometimes* by both raters were considered for intervention. Each participant had three targeted social skills.

The effectiveness of the peer network plus intervention on these three social skills was evaluated using a multiple baseline across participants design (Kazdin, 2011). Researchers rated the participants on each of their three targeted skills during ten minute periods of peer network meetings. The social skills training component was added to the first participant's network when he showed a stable baseline on all three skills. The social skills training component was added in a staggered fashion across all participants. Changes in broad social skills between pre-intervention (wave one) and post-intervention (wave two) were examined through changes in the ASSP, Vineland, Social Skills Improvement System (SSIS), and case manager and parent questionnaires. Additionally, teachers and parents reported the number of social contacts and friendships that the students with ASD had at wave one and wave two. Changes in the numbers of social contacts and friendships were examined. Fidelity of implementation was reported in order to further evaluate results. All involved participants (e.g., students with ASD, peers, interventionists) completed social validity questionnaires in order to understand the acceptability and feasibility of the peer network plus intervention. Finally, this study aimed to examine whether or not the ASSP (Bellini & Hopf, 2007) was sensitive enough to detect changes in social skills based on this level of intervention. This was done by comparing changes seen on the ASSP

with changes shown on the other measures used (SSIS and Vineland), which have a longer history of use with this population.

The study advances research and understanding in the field by examining an intervention for high school students with ASD. High school students with ASD are an under-researched population in comparison to early childhood and elementary-aged students with autism. It was also the first study to examine a peer network intervention for high school students with autism spectrum disorders that included targeted social skills instruction. A variety of measures were used, including the newer Autism Social Skills Profile (Bellini & Hopf, 2007). The social validity of the peer network plus intervention was evaluated to see if these interventions are feasible for use in schools to improve not only the social skills of students with autism but their social relationships and inclusion within the school setting.

Chapter 2

Literature Review

The purpose of this chapter is to provide a review of the literature regarding social skills interventions for children and adolescents with autism spectrum disorders. The chapter begins with an introduction to autism spectrum disorders (ASDs). Then, the inclusion of students with disabilities in school settings, in general, and students with autism, in particular, is discussed. Next, the importance of developing social skills is reviewed followed by a discussion of the essential components of effective social skills interventions. The majority of this chapter is dedicated to examining evidence-based social skills assessment techniques and interventions. Social skills interventions utilizing peers are examined in greater depth. Finally, the purpose of and research questions for the proposed study are specified.

Autism Spectrum Disorders

Autism spectrum disorder (ASD) is a neurodevelopmental disorder impacting many areas of functioning (American Psychiatric Association, 2013). As its name implies, individuals with an ASD have symptoms along a continuum of severity (APA, 2013). There is renewed interest in addressing this disorder, because what used to be seen as a rare developmental disorder affecting only a few children in every thousand is now seen much more commonly. The most recent Centers for Disease Control (CDC) report stated that in 2010, 1 in 68 8-year-old children were diagnosed with an ASD (2014). This is a dramatic increase from the 2012 report which stated that in 2008, 1 in 88 children were diagnosed with ASD (CDC, 2012) and from the 2009 report which stated that, just two years earlier in 2006, 1 in 110 children were diagnosed with an ASD (CDC, 2009). Autism spectrum disorders are much more common in boys than girls (CDC,

2014). In the most recent CDC (2014) report, autism was seen in 1 of every 42 boys and 1 of every 189 girls which makes ASD almost 5 times more common in males than females.

Most of the literature presented in this chapter utilized the criteria for Pervasive Developmental Disorders found in the previous version of the Diagnostic and Statistical Manual (DSM-IV-TR; American Psychiatric Association, 2000). In the DSM-IV-TR, five separate disorders were defined under the category Pervasive Developmental Disorders. These included Autistic Disorder, Rett's Disorder, Childhood Disintegrative Disorder, Asperger's Disorder, and Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS; American Psychiatric Association, 2000). In the DSM-IV-TR, Pervasive Developmental Disorders could be diagnosed when an individual was affected in a variety of life areas, including core impairments in (1) social interactions, (2) communication, and (3) restricted, repetitive, and stereotyped interests and behaviors (APA, 2000; Wilczynski et al., 2007). All three of these core deficits can impact the child's ability to function successfully in school settings (Wilczynski et al., 2007).

The fifth edition of the Diagnostic and Statistical Manual (DSM-5) was released in May, 2013, with significant changes to this category (American Psychiatric Association, 2013). In the newest version of the manual, a single diagnostic category of Autism Spectrum Disorder subsumes these diagnoses (APA, 2013). This means that there is no longer a DSM diagnosis of Asperger's disorder. Instead, clinicians are asked to specify a level of severity in the areas of social communication and interaction and restricted, repetitive patterns of behavior, interests, or activities (APA, 2013). In addition, clinicians specify whether or not there is an accompanying intellectual impairment or language impairment (APA, 2013). This change was made due to research illustrating that individuals receiving these diagnoses have more or less severe cases of

the same diagnostic category and that differentiation between categories was invalid (APA, 2012).

Diagnostic Assessment of Autism Spectrum Disorders

Although a diagnosis of ASD can be given at a later age, to be diagnosed individuals must have shown symptoms in early childhood (APA, 2013). There is a push to identify children with ASD as young as possible as early intervention improves outcomes for children (e.g., Eaves, Wingert, Ho, & Mickelson, 2006; Harris & Handlemann, 2000; Robins & Dumont-Mathieu, 2006; Rogers, 1996).

There are a variety of tools for diagnosing ASD. Included in these tools are a number of rating scales and interviews such as the Autism Diagnostic Observation Schedule (Lord et al., 2012), the Social Communication Questionnaire (Rutter, Bailey, & Lord, 2003), and the Autism Diagnostic Interview-Revised (Le Couteur, Lord, & Rutter, 2003). One measure that has been used widely for assessing autism spectrum disorders is the Childhood Autism Rating Scale (CARS; Schopler, Reichler, & Renner, 1986). This tool is useful because it can be completed relatively quickly and can include information from a variety of individuals; the CARS has been recently revised in a second edition (CARS2; Schopler, Van Bourgondien, Wellman, & Love, 2010). On the CARS2, Clinicians and researchers use observations, interviews, and educational records to rate individuals on 15 different domains (Schopler et al., 2010). On the standard version of the CARS2, these domains include Relating to People; Imitation; Emotional Response; Body Use; Object Use; Adaption to Change; Visual Response; Listening Response; Taste, Smell, and Touch Response and Use; Fear or Nervousness; Verbal Communication; Activity Level; Level and Consistency of Intellectual Response; and General Impressions (Schopler et al., 2010). In each domain, ratings are made on a four-point scale based on the

frequency, intensity, peculiarity, and duration of behaviors in the domain. Rating values for each domain are summed to produce a total raw score. This score is then converted to a standard score or percentile rank and can be used to place the student into one of three severity groups (Minimal-to-No Symptoms of Autism Spectrum Disorder, Mild-to-Moderate Symptoms of Autism Spectrum Disorder, or Severe Symptoms of Autism Spectrum Disorder; Schopler et al., 2010). Psychometric properties are strong (Schopler et al., 2010) and will be described in the following chapter.

Inclusion of Students with Autism Spectrum Disorders

In the past three decades, there has been a great deal of interest in the inclusion of students with disabilities in general education classrooms (Harrower, 1999; Harrower & Dunlap, 2001; McDonnell, 1998; McLeskey, J., Landers, E., Williamson, P., & Hoppey, D., 2012). Previously, students with disabilities were generally segregated from typically developing peers, with few or no opportunities for interactions with peers during a typical day (Harrower & Dunlap, 2001). Research has demonstrated the benefits of inclusion for students with autism and other disabilities (Fryxell & Kennedy, 1995; Harrower & Dunlap, 2001; Hunt, Farron-Davis, Beckstead, Curtis, & Goetz, 1994). Students with disabilities who are fully included have been observed to have higher levels of engagement and social interaction, give and receive greater levels of social support, have a greater number of friends, and even have more advanced Individualized Education Program goals (Fryxell & Kennedy, 1995; Harrower & Dunlap, 2001; Hunt et al., 1994). Although these results have been shown with students with various disabilities, research focusing on the effects of inclusion for students with ASD alone has been more mixed (Harrower & Dunlap, 2001; Hunt et al., 1994). In general, there is a great deal of variability in what occurs in classrooms that are considered to be inclusion classes; many times

students with disabilities are present in the classroom but not fully included. In addition, a large percentage of the research on the inclusion of students with disabilities, especially students with autism, has been conducted with children in elementary school, indicating a real need for research on inclusion at the middle and high school levels (Harrower & Dunlap, 2001).

The research we do have from the high school level indicates that even when students are present in general education settings, few interactions naturally occur between students with disabilities and typically developing peers (Carter et al., 2005; Hochman, J. M., Carter, E. W., Bottema-Beutel, K., Harvey, M. N., & Gustafson, J. R., in press; Hughes, Carter, Hughes, Bradford, & Copeland, 2002). Unfortunately, this trend is seen both inside the classroom and in other areas of the school (e.g., gymnasium, cafeteria, hallways; Carter et al., 2005, Hochman et al., in press). In one study, the researchers observed students with disabilities who were included in a general education culinary arts class (Mu, Siegel, & Allinder, 2000). When students worked in small groups, students with disabilities participated in significantly fewer interactions than did their typically developing peers (Mu et al., 2000). In fact, students with disabilities interacted more frequently with adults than with other children and when peer interactions did occur, students with disabilities were more frequently on the receiving than giving end (Mu et al., 2000). In a recent study, two high school students with autism were found to interact with typically developing peers in an advisory class infrequently at baseline (ranging from 3% of intervals to 16% of intervals) even though numerous opportunities for social interaction existed (Gardner et al., in press).

Outside of the classroom, Hughes and colleagues (1999) observed students with disabilities during the lunch period. In this study, students with intellectual disabilities were observed interacting with typically developing peers on less than ten occasions during 68 hours

of observation. This is only 0.02% of the observed time during the lunch hour, which is a very social time for typically developing students (Hughes et al., 1999). These results were replicated in a multiple case design study, which found that students with disabilities interacted very infrequently with typically developing peers (Dore, Dion, Wagner, & Brunet, 2002). In another single case design study, Cutts and Sigafoos (2001) found that students with disabilities had variable amounts of interaction with peers during the lunch period and for one student with higher numbers, it was still lower than typically developing peers. Carter and colleagues (2005) examined the social interactions of students with intellectual disabilities and their typically developing peers across a variety of settings including general education classrooms, the lunchroom, the gymnasium, and special education classrooms. Similar to the other studies mentioned, this research group found that students with moderate to severe intellectual disabilities interacted with peers only a moderate amount, and much less than individuals without disabilities (Carter et al., 2005). More recently, Hochman et al. (in press) found that, despite being in the cafeteria with typically developing peers, four high school students with autism had interactions with typically developing peers in only 0% to 14% of baseline intervals.

All of these findings suggest that students with disabilities are unlikely to interact with their typically developing peers just because they are in the same location as these peers (Carter et al., 2005; Chung et al., 2007; Elliott & Gresham, 1993; Hauck et al., 1995; Hughes et al., 2002). Thus, just placing a student with disabilities in a general education classroom or setting is unlikely to produce desired results if the desired outcome is full inclusion of the student. Students with ASD are at an even greater disadvantage than students with other disabilities. Children with ASD initiate fewer interactions with peers than typically developing peers **and** children with intellectual disabilities (Hauck et al., 1995). In fact, in one study, children with

ASD initiated interactions with peers only one-third as often as children with intellectual disabilities (Hauck et al., 1995). It was reported that it was especially difficult for students with ASD to initiate interactions in unstructured settings (Hauck et al., 1995).

Importance of Social Skills

One reason that students with ASD, in particular, may show low levels of interactions with their typically developing peers is that students with ASD often lack or do not reliably use the social skills necessary to initiate interactions with peers or may display undesirable behaviors that keep peers from interacting with them (Bellini et al., 2007). Social communication and interaction is one of the two core impairment areas displayed in individuals with autism (with the other being restricted and repetitive behaviors, interests, and activities; APA, 2013). Therefore, since social skills deficits are a central feature of ASD (Bellini et al., 2007), specific social skill difficulties such as communicating with other individuals, integrating information from other people and the environment, initiating and maintaining conversations, sharing enjoyment, perspective taking, and inferring the emotions and thoughts of others are quite common (Rogers, 2000). Clearly, these impairments may hinder the interactions of students with autism who are included in high schools.

Research has shown how important these social skills are for the social and emotional development of children with ASD (Bellini & Hopf, 2007; Bellini et al., 2007; Welsh, Park, Wildman, & O'Neil, 2001). Not only can a lack of social skills lead to children with ASD having fewer interactions with typically developing peers, but social skills deficits can also lead to other poor outcomes such as poor academic achievement and isolation (Hume, Bellini, & Pratt, 2005). In the long run, students with ASD who do not receive adequate social skills training are at a higher risk for anxiety, depression, substance abuse, and other forms of psychopathology

(Bellini, 2006c; Hume et al., 2005; Tatum, 2000). Social skills deficits that are not addressed will interfere with an individual's ability to make meaningful friendships in high school and after high school, often leading the individuals with ASD to withdraw from social situations and lead lives of social isolation (Welsh et al., 2001). On the other hand, having higher levels of social skills has been correlated with increased odds of employment after high school for young adults with autism and other disabilities (Carter, Austin, & Trainor, 2011).

Social Skills Assessment and Training

With the importance of social skills for the short and long-term development of students with ASD, it is an unfortunate fact that few children with autism receive high-quality social skills treatment in schools (Hume et al., 2005). According to leaders in the field, data-driven, effective social skills programming should be an integral component of every student with autism's educational plan (Bellini et al., 2007; Hume et al., 2005).

There is evidence that suggests that *strong* social skills training can be effective for students with disabilities (Hwang & Hughes, 2000). However, it is essential that these social skills programs are developed using effective techniques and implemented with integrity (Bellini, 2006a; Bellini, 2006b). There have been a number of quantitative meta-analyses examining the literature on social skills interventions involving children and adolescents with disabilities *other* than ASD. In general, these studies have demonstrated that typical social skills training programming is only minimally effective (Gresham, Cook, Crews, & Kern, 2004; Gresham, Sugai, & Horner, 2001). Gresham and colleagues indicated that these weak treatment effects may *not* be because social skills training is ineffective but rather because the social skills training utilized did not match the needs of the individual students (Gresham et al., 2001; Gresham et al., 2004). However, not all literature on social skills programming is so bleak.

Hwang and Hughes (2000) reviewed 16 studies that examined social skills programming for children *with* ASD. They concluded that social skills programming shows “considerable promise for increasing social and communicative skills” of children with autism (Hwang & Hughes, 2000).

As mentioned, one reason for the mixed results on the effectiveness of social skills programming is that traditional social skills training may not fit the needs of the individual student (Gresham et al., 2001; Gresham et al., 2004). Students with disabilities in general, and especially students with ASD, are a highly heterogeneous group (APA, 2013; Gillberg, 1999; Harrower & Dunlap, 2001). This means that the social skills deficits experienced vary greatly across individual students. Thus, it is essential for effective social skills training to first identify the specific social skills deficits that need attention for each individual (Gresham et al., 2001). These identified deficits should be the target of intervention (Bellini & Hopf, 2007).

There is often a distinction made between skill acquisition deficits (i.e., the absence of particular skills) and performance deficits (i.e., skills that are present but not demonstrated or performed). Generally, if a child has a skill acquisition deficit, the intervention is to teach the child the skill. If a child has a performance deficit, the intervention is to enhance performance of an existing skill by removing barriers that impede performance (Bellini, 2006a). However, especially when working with children with ASD, it can be difficult to determine whether a skill deficit is an acquisition or performance deficit. In children with ASD, skills can look like performance deficits but actually be skill acquisition deficits (Bellini, 2006a). In addition, skills are not truly either present or not present but rather exist on a continuum. Skills can be present at a novice level and still require intervention to be used with mastery (Bellini, 2006a).

Interventions should then focus on both teaching skills and eliminating the barriers that impede progress.

What is needed, then, is an assessment tool that provides a comprehensive profile of the social skills strengths and deficits for a student with ASD so that interventions can be matched to the individual. Ideally, this tool should aid in the identification of social skills deficits as well as provide a means of progress monitoring as interventions occur (Bellini, 2006a). There are presently a variety of tools available for assessing social skills, each with inherent strengths and drawbacks.

Social skills rating scales. One common way to identify social skills deficits is to use rating scales, which are quick and convenient for teachers, parents, children, and other professionals (Gresham et al., 2001). Gresham and colleagues (2001) demonstrated that when adult participants completed rating scales and the results were used to design interventions, the social validity of treatments was increased. However, many rating scales frequently used, such as the Social Skills Rating System (SSIS; Gresham & Elliott, 1990), are not sensitive enough for multiple uses with children with ASD (Elliot, Malecki, & Demaray, 2001; Gresham et al., 2001). Rating scales are often normed with a large population of children, few of whom have autism or other developmental disabilities (Gresham et al., 2001). Because of this, students with ASD who exhibit substantial deficits in social functioning will have low standard scores on these rating scales, regardless of any changes due to social skills training (Bellini & Hopf, 2007; Gresham et al., 2001). In other words, they are not sensitive enough to be used for progress monitoring for most children with ASD.

Autism Social Skills Profile. One rating scale developed to address these concerns is the Autism Social Skills Profile or ASSP (Bellini & Hopf, 2007). This rating scale was normed only

with children with ASD and is more sensitive to change than most rating scales (Bellini & Hopf, 2007; Bellini et al., 2007). The ASSP is especially useful for intervention planning and progress monitoring as these were the original purposes of the assessment, as opposed to use as a diagnostic scale (Bellini & Hopf, 2007). Items were designed specifically to match the broad range of social skills deficits often seen in this population. The social behaviors examined include initiation skills, social reciprocity, perspective-taking, and non-verbal communication skills (Bellini & Hopf, 2007). Any adult who is familiar with the child's social behavior can complete the ASSP; it is most commonly completed by parents or teachers (Bellini & Hopf, 2007). It was designed for use with children with autism between the ages of 6 and 17 and is quick, taking only 15 to 20 min to complete (Bellini & Hopf, 2007). The ASSP contains 49 items that are rated on a 4-point Likert scale, with a rating of 1 indicating that the behavior never occurs, 2 meaning that it sometimes occurs, 3 indicating that it often occurs, and 4 signifying that the behavior occurs very often (Bellini & Hopf, 2007). Higher scores correspond to higher levels of positive social behaviors. To aid intervention planning, the ASSP also contains a column for descriptive comments regarding each of the items (Bellini & Hopf, 2007). Completion of the ASSP results in a total social functioning score and scores for three subscales (shown in Table 1; Bellini & Hopf, 2007).

Table 1

Autism Social Skills Profile (ASSP) Subscale Descriptions

Subscale	Description
Social Reciprocity	Contains items related to the active maintenance of social interactions and demonstration of perspective-taking skills
Social Participation/ Avoidance	Contains items related to social engagement or withdrawal from social participation

Detrimental Social Behaviors	Contains items representing socially inappropriate behaviors that could lead directly to negative peer interactions
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Many of the advantages of the ASSP have already been delineated (e.g., it's a sensitive measure, useful for treatment planning and progress monitoring). An additional advantage is that it provides a large quantity of information about social behavior quickly and efficiently and can be given to multiple sources (Bellini & Hopf, 2007). As mentioned, skill deficits identified by the ASSP can be the direct target of intervention; items are also phrased so that they can be easily adapted for goals on Individualized Education Plans (Bellini & Hopf, 2007). The ASSP was shown in initial testing to have strong psychometric properties (Bellini & Hopf, 2007).

The ASSP seems to be a useful tool for measuring the social skills functioning of children and adolescents with ASD. One concern regarding the ASSP is that there are only a few published research studies that have utilized the ASSP to inform interventions. In a study examining the impact of a video self-modeling intervention for college students on the spectrum, the ASSP was used to identify target skills for the intervention (Mason, Rispoli, Ganz, Boles, & Orr, 2012). It was also used to identify target skills and to monitor progress in another study on video modeling use in peer groups (Ogilvie & Dieker, 2010). Specifically, the authors in this study had teachers and parents complete the ASSP. Items that were rated as needing the most assistance were identified as potential targets for intervention (C. Ogilvie, personal communication, May 8, 2013). This list was used in conjunction with the skills addressed in the Skillstreaming the Adolescent curriculum (Goldstein & McGinnis, 2011) as well as parent and teacher interviews to determine the skills to be targeted in the study (C. Ogilvie, personal communication, May 8, 2013). The ASSP is also mentioned as a commonly used or suggested tool in other research articles (Ogilvie, 2011; Sansosti, 2010). It's possible that the tool is used

more often clinically but that research using the tool is lagging behind. Therefore, while there are many strengths to the ASSP, a major drawback is the relative lack of research utilizing the tool to inform interventions as well as limited information regarding its psychometric properties and progress monitoring abilities.

Social Skills Improvement System. The Social Skills Improvement System (SSIS; Gresham & Elliot, 2008) is another social skills rating scale that can be utilized to assess social behaviors. The SSIS has forms for parents, educators, and students meaning that multiple informants' perspectives can be obtained and compared (Gresham & Elliot, 2008). Each form takes approximately 10 to 25 min to complete (Haggerty, Elgin, & Woolley, 2011). The SSIS is a revised version of the Social Skills Rating Scale (SSRS; Gresham & Elliott, 1990), which was often used in schools and in research studies (Haggerty et al., 2011). These rating scales measure a child's social skill levels (in the areas of communication, cooperation, assertion, responsibility, empathy, engagement, and self-control; Gresham & Elliott, 2008). The SSIS also measures competing problem behaviors on a variety of subscales: externalizing, bullying, hyperactivity/inattention, and internalizing (Gresham & Elliott, 2008). There is also an Autism Spectrum subscale in the problem behavior index. Academic competence can also be examined using the SSIS. Parents and teachers indicate the frequency with which the student displays the skills or problem behaviors on a four-point scale (Gresham & Elliot, 2008). Choices include Never (0), Seldom (1), Often (2), and Almost Always (3). One additional benefit of the SSIS is that parents and teachers can rate how important each of these behaviors are to them on a 3-point scale (Not Important, Important, and Critical; Gresham & Elliot, 2008). Because the SSIS rating scales provide such detailed information in a variety of skill areas as well as the importance of these items to the raters, they are useful assessment tools for developing interventions. According to

the authors, the SSIS can also be used as a progress monitoring tool every three months (Gresham & Elliot, 2008). However, as mentioned, the SSIS may lack the sensitivity needed for effective progress monitoring, especially for students with significant disabilities (Bellini & Hopf, 2007). As will be discussed in the methods section, psychometric properties of the SSIS fall within the acceptable ranges for all scales and subscales (Gresham & Elliot, 2008; Haggerty et al., 2011). Therefore, strengths of the SSIS include its relatively common use, ease of use, and strong psychometric properties. Limitations include sensitivity to change for progress monitoring purposes, especially with students with ASD (Bellini & Hopf, 2007).

Vineland Adaptive Behavior Scales, Second Edition Another useful and widely-used rating scale for measuring prosocial behaviors is the Vineland-II Teacher Rating Form, part of the Vineland-II Adaptive Behavior family of assessments (Sparrow, Cicchetti, & Balla, 2006). The Vineland-II Teacher Rating Form assesses functioning in a range of activities and is appropriate for students aged 3 through 21 (Sparrow et al., 2006). It can be completed independently by a teacher in approximately 20 min (Sparrow et al., 2006). For younger students (ages 3 through 6), there are four broad domains including Communication, Daily Living Skills, Socialization, and Motor Skills (Sparrow et al., 2006). For older students (ages 7-21), the Motor Skills domain, which examines gross and fine motor skills, is not included (Sparrow et al., 2006). The Communication domain measures how a student listens and pays attention (receptive), shares ideas through speech (expressive), and reads and writes (written; Sparrow et al., 2006). Daily Living Skills describe the students daily habits and hygiene (personal), the student's understanding of concepts such as time, money, and math (academic), and the student's ability to follow rules and routines in the school environment (school community; Sparrow et al., 2006). Finally, the Socialization domain measures how a student interacts with others (interpersonal

relationships), engages during play and leisure time (play and leisure time), and demonstrates responsibility and sensitivity to others (coping skills; Sparrow et al., 2006). For students age 7-21, an adaptive behavior composite score can be found based on all three domains. According to the authors, the Vineland-II teacher form can be used as an assessment for intervention planning as well as for progress monitoring around social and emotional skills, basic academic functioning skills, and school behaviors (Sparrow et al., 2006). Psychometric properties of the Vineland are very strong (Sparrow et al., 2006). The Vineland is especially useful for providing information regarding the broad adaptive behaviors of students with disabilities but is less sensitive for use as a progress monitoring tool and does not address specific social skills as well as other tools (e.g., the ASSP).

Direct observations. In addition to information from rating scales, social skills can be assessed through direct observations. Observing behavior directly has multiple benefits. For one, observations of specific social skills can be more sensitive than rating scales such as the SSIS and Vineland (Bellini & Peters, 2008). Observations can also remove the inherent bias from the individual raters completing the rating scale (Yoder & Symons, 2010). Systematic observations can be especially powerful; however, a number of decisions must be made before an observation occurs. First, the key behaviors that will be observed need to be operationalized in a coding manual (Yoder & Symons, 2010). Second, the context (procedure and setting) must be determined (Yoder & Symons, 2010). Third, it must be decided whether the session will be observed live or from a video recording (Yoder & Symons, 2010). Fourth, the method of sampling the behavior, as well as a method of recording the behavior must be determined (Yoder & Symons, 2010). Finally, the metric used to represent the behavior must be decided; most commonly, these are frequency or duration measures (Yoder & Symons, 2010).

Direct observations are frequently used as measures in studies looking to improve social skills. For example, in one study, five social skills were operationally defined and participants were rated on each of these skills before, during, and after the intervention (Ogilvie & Dieker, 2010). In this study, the researchers created a 3-point Likert scale for each of the five social skills ranging from a score of 1, which represented a low-level demonstration of the skill, to a score of 3, which represented a high level demonstration of the skill (Ogilvie & Dieker, 2010). A score of 0 was given if the skill was not observed at all during the 15-minute observation (Ogilvie & Dieker, 2010). The researchers observed each participant three times per week in an inclusive classroom (Ogilvie & Dieker, 2010). In another study on video modeling, direct observations were used to measure social skills during meetings of students with ASD and peers (Mason, et al., 2012). Researchers rated each participant on four targeted social skills during 5-minute intervals (Mason et al., 2012). Each skill was rated on a 9-point Likert scale; the anchors for the Likert scale were created separately for each skill (Mason et al., 2012). A score of 1 generally referred to the absence of the skill whereas a score of 9 referred to the appropriate demonstration of all aspects of the skill throughout the interval (Mason et al., 2012).

Social questionnaires. Finally, additional information regarding social skills, social relationships and contacts, and social activities can also be gathered through structured interviews or questionnaires given to individuals who are very familiar with the student with autism (e.g., parents, case managers, special education teachers, paraprofessionals). For example, a large-scale randomized control trial examining the impacts of peer-mediated interventions involves administering assessment packets to special education case managers and parents in order to gather information about the students with disabilities in a variety of areas (Carter & Asmus, 2009). For example, case managers and parents are asked to list all of the peers known to

be social contacts and/or friends of the student (Carter & Asmus, 2009). A social contact is defined by this research team as a peer who has had at least a 15-minute interaction with the student in the last 2 weeks (Carter & Asmus., 2013). A friend is defined as someone whom the parents or case managers feel is a friend of their child but who has not had contact with the student in the past 2 weeks. For both social contacts and friends, parents and case managers list the peers' first names and check boxes reporting how long the student has known the peer, whether or not the peer has a disability, whether or not the peer would be considered a friend, and the importance of this relationship (Carter & Asmus, 2009). These social questionnaires provide additional information regarding the nature of and quantity of students with whom the student with a disability has social interactions.

Successful Social Skills Intervention Components

Once specific social skill deficits are identified, students with ASD need high quality social skills interventions. Research has identified specific empirically supported elements of effective social skills programs. As mentioned previously, the interventionist must take into consideration the individual characteristics of the child with disabilities, including age, cognitive level, behavioral concerns, and social interaction skills (Chung et al., 2007; Elliott & Gresham, 1993). Children benefit most when given a structured training strategy utilizing systematic procedures from a trained facilitator (Chung et al., 2007). As children with ASD often display challenging behaviors, it is important that an effective behavior management system is in place before social skills training begins if behavior is an issue (Chung et al., 2007). In addition, the teaching modality of the social skills is a critical factor. Children with autism often benefit from visual aids, such as social stories, picture cards, video modeling, and video feedback (Charlop-

Christy, Le, & Freeman, 2000; Chung et al., 2007; Thiemann & Goldstein, 2001). These visual aids can lead to increased understanding and generalization of targeted social skills.

Dosage of social skills required. An obvious question regarding social skills training is what dosage of social skills training is required to make a substantial difference. Gresham et al. (2001) recommended that social skills interventions need to be implemented more intensely and frequently than they were being delivered in the studies the team reviewed. Although they did not recommend a specific dosage, they stated that 30 hours of instruction, spread across 10-12 weeks was **not enough** (Gresham et al., 2001). Gresham and colleagues (2001) suggested that one reason for the low intervention effects found in the reviewed studies was that the students' were not receiving enough social skills training. However, Bellini's team did not find any significant relationship between duration of intervention and intervention outcomes, although it should be noted that many studies in this meta-analysis did not provide adequate descriptive information on the intervention length, intensity, and duration (Bellini et al., 2007). As of now, there is no set agreed upon dosage level required for social skills training which speaks not only to the heterogeneous nature of ASDs and other disabilities but also to the need for more research in this area. What is recommended is that, whenever possible, social skills should be taught and reinforced as frequently as possible throughout the school day (Bellini et al., 2007).

Intervention setting. Historically, social skills training for students with disabilities was conducted in segregated (pull-out) classrooms at a specific time during the day. Gresham et al. (2001) noted that some of the weak outcomes of social skills interventions could be attributed to the fact that these interventions occurred in "contrived, restricted, and decontextualized" (p. 340) settings such as resource rooms and pull-out sessions. Conducting social skills training in these environments limits generalization opportunities and maintenance of these skills (Gresham et al.,

2001). For students with autism, research has shown that “autism-only” settings are “developmentally toxic when social behavior is considered” (Strain, 2001, p. 31). When students with autism are surrounded only by other students with autism, they are not given the chance to practice interacting socially with typically developing peers (Strain, 2001; Strain, McGee, & Kohler, 2001). This can stunt social growth. The more naturalistic the setting in which social skills training occurs, the better. Bellini et al. (2007) found that interventions implemented in the student’s typical classroom produced higher generalization and maintenance effects. Based on the meta-analysis results, Bellini’s team recommended that “teachers and other school personnel should place a premium on selecting social skills interventions that can be reasonably implemented in multiple naturalistic settings” (2007, p. 160).

Intervention match. In addition to being implemented in a natural setting with enough frequency and intensity, it is essential that the social skills interventions match with the skill deficit of the individual student(s) (Gresham et al., 2001). This was supported by Quinn and colleagues who concluded that the failure of many social skills interventions results from the mismatch between the intervention strategy and skill deficits (Quinn, Kavale, Mathur, Rutherford, & Forness, 1999). Quinn et al. (1999) asserted that interventions should be designed to address the specific needs of the student rather than forcing the student to fit a selected strategy. It is difficult to know how well intervention strategies reported in the research literature generally matched with skill deficits as specific skill profiles are often not reported in published studies. In fact, only 1 of the 55 studies in one meta-analysis listed the type of skill deficit exhibited by the participants (Bellini et al., 2007). Bellini and colleagues have suggested that “school personnel should make an intensive effort to systematically match the intervention strategy to the type of skill deficit exhibited by the child” (Bellini et al., 2007, p. 161).

Fidelity. Even the best social skills intervention will have little impact if it is not implemented with fidelity. Fidelity refers to the degree with which an intervention is implemented as intended or prescribed (Kendall, & Beidas, 2007). Unfortunately, many studies of specific social skills interventions have not included fidelity measures, making it unclear whether negative results for social skills interventions are due to a failure of the intervention or a failure of implementation (Gresham et al., 2001). In Bellini and colleagues' 2007 meta-analysis, only 14 of the 44 studies reported measures of whether or not the intervention was implemented with fidelity.

Social validity. Another essential intervention component is social validity. Social validity evaluates the acceptability and viability of interventions (Schwartz & Baer, 1991). If an intervention has high social validity, people view it as worthwhile and socially important. Social validity is important for outcomes as intervention fidelity is unlikely if those who implement the intervention do not believe the intervention has social importance (Bellini et al., 2007; Schwartz & Baer, 1991). In the school setting, facilitators and students are not likely to put forth sufficient effort if they do not believe in the intervention's merit. Social validity can be measured through interviews, focus groups, individualized questionnaires and rating scales, or published feedback surveys (e.g., Chafouleas, Briesch, Riley-Tillman, & McCoach, 2009; Reimers & Wacker, 1988; Witt & Elliott, 1985).

Types of Social Skills Interventions

There are a large variety of social skills interventions; however, some strategies are used more frequently, and more successfully, than others. Reichow and Volkmar (2010) conducted a meta-analysis looking at the social skills interventions most frequently used with school-aged children with autism. The study included 28 studies with participants who were mostly school-

aged (Reichow & Volkmar, 2010). Most participants were male and the interventions were generally delivered, at least in part, by non-parental adults (Reichow & Volkmar, 2010). For younger students (aged 4-13), the most frequently used intervention strategies relied on applied behavior analysis (ABA) techniques with a good number of studies including peer training and/or visual techniques and visual modeling (Reichow & Volkmar, 2010). The session duration of the interventions was short, with six studies reporting session duration of less than 15 min and 12 studies reporting session duration of equal to or more than 15 min (Reichow & Volkmar, 2010). Of the studies with younger students, most (14) included multiple sessions each week, with four studies involving one or fewer sessions, on average, each week. The most frequently targeted improvements for this group included increases in general social skills and social interaction (Reichow & Volkmar, 2010).

Highlighting the lack of research on social skills interventions for adolescents, only three studies in the meta-analysis contained all adolescents or adult participants. In the studies that contained adolescents, there were 36 participants, most of whom were male (Reichow & Volkmar, 2010). The adolescents and adults (older than 20-years-old) in the studies had medium or higher cognitive functioning levels. All of the interventions for this group were delivered by non-parental adults or through technology (Reichow & Volkmar, 2010). Two of the studies utilized ABA techniques whereas one of the studies used a video modeling strategy (Reichow & Volkmar, 2010). All three of the studies reported session durations of at least 15 min and multiple sessions each week for at least 10 weeks (Reichow & Volkmar, 2010).

Applied behavior analysis (ABA). Applied behavior analysis or ABA uses behavioral techniques to impact human actions (Baer, Wolf, & Risley, 1968). The goal of ABA is to understand the principles that underlie behaviors and to use strategies to increase the likelihood

of desired behaviors and decrease the likelihood of undesired behaviors. Baer, Wolf, and Risley's (1968) seminal article defined seven characteristics that are still widely considered the foundations of ABA. The first of these is that ABA must be *applied*, meaning that ABA researchers and practitioners are concerned with promoting socially significant change (Baer, Wolf, & Risley, 1968). The second major characteristic of ABA is that it is *behavioral*, meaning in this sense that applied behavior analysts study and measure the behavior in need of change objectively and systematically (Baer, Wolf, & Risley, 1968). The field also focuses on being *analytic*, meaning that behavior analysts seek to demonstrate functional relationships between stimuli and responses; in other words, ABA seeks to control situations in order to determine causal relationships (Baer, Wolf, & Risley, 1968). Researchers and practitioners of ABA focus on being *technological*, objectively describing procedures and behaviors in enough detail that they can be replicated by others (Baer, Wolf, & Risley, 1968). According to Baer, Wolf, and Risley (1968), it is also essential that ABA be *conceptually systematic*, meaning that procedures and outcomes are described in terms of the basic principles of behavior. The sixth characteristic of ABA is *effectiveness*; ABA seeks to improve behaviors to a clinically significant degree (Baer, Wolf, & Risley, 1968). Finally, applied behavior analysts and researchers are concerned with the *generality* of behavior change, seeking to ensure that adaptive behaviors generalize across time, participants, and settings.

As mentioned, ABA techniques were the most frequently cited intervention strategy used in Reichow and Volkmar's 2010 meta-analysis and there is a great deal of support for ABA techniques in social skills interventions (Reichow & Volkmar, 2010). The ABA techniques that were most frequently used included prompting and reinforcement arrangements (Jung, Sainato, & Davis, 2008; Owen-DeSchryver, Carr, Cale, & Blakeley-Smith, 2008; Schertz & Odom,

2007); imitation and modeling paradigms (Garfinkle & Schwartz, 2002; Jones, Carr, & Feeley, 2006); and self-monitoring (Loftin, Odom, & Lantz, 2008; Morrison, Kamps, Garcia, & Parker, 2001). ABA techniques were frequently used in conjunction with other social skills intervention types (e.g., video modeling, peer training; Reichow & Volkmar, 2010). As applied behavior analysis strategies are so prevalent and are utilized frequently with other intervention techniques, they will be addressed in subsequent sections below.

Antecedent procedures. One class of ABA procedures includes antecedent manipulations. Antecedent procedures work by modifying the environment to decrease the likelihood of challenging behaviors and increase the likelihood of desired behaviors; they are named ‘antecedent’ procedures because these strategies occur *before* the behavior takes place (Harrower & Dunlap, 2001). One advantage of utilizing antecedent procedures is that they are proactive. If antecedent strategies are successful, the challenging behaviors do not occur and the environment supports more desired behaviors (Harrower & Dunlap, 2001). A variety of antecedent procedures have been used specifically for students with autism in general education classes. One such evidence-based strategy is priming, or prepractice, which involves allowing students to ‘preview’ activities and expectations before an activity begins (Harrower & Dunlap, 2001). Some research has focused on using priming to improve the number and quality of social interactions between children with autism and typically developing peers in regular educational classrooms (Harrower & Dunlap, 2001). One study used priming techniques to teach preschool age children with autism to make social interactions toward peers (Zanolli, Daggett, & Adams, 1996). In this study, preschoolers were prompted by a teacher to conduct various social initiation strategies including smiling at a peer, looking at a peer’s face, touching a peer’s hand, saying a peer’s name, showing a peer something, and asking a peer to do something. Results showed that

priming led to increases in the number of social initiations children with autism made toward their typically developing peers (Zanolli et al., 1996).

An additional evidence-based antecedent strategy is the delivery of prompts (Harrower & Dunlap, 2001). Prompts can be useful in increasing the number and quality of social interactions students with autism make during the day (DiSalvo & Oswald, 2002). These prompts are especially useful at the beginning of a comprehensive social skills training to remind the individual when to use practiced skills (DiSalvo & Oswald, 2002; Harrower & Dunlap, 2001). Prompts to elicit responses can be verbal or nonverbal and should be faded as the student becomes more independent. One nonverbal tool that can be used as a prompt is a picture schedule, which alerts students of upcoming activities (Harrower & Dunlap, 2001). For students with autism, picture schedules can aid in transitioning, which can be an especially difficult time for these individuals (Harrower & Dunlap, 2001). When students are more comfortable within their environment, they are more able to participate in social interactions.

Contingency management. Contingency management is one of the hallmarks of ABA. Whereas antecedent procedures work on the environment *before* behaviors occur, contingency management refers to the reinforcement that occurs *after* a behavior occurs. If a behavior, whether desired or undesired, is reinforced, it has a greater likelihood of occurring again in the future. Use of contingency management is, arguably, a component of every social skills intervention, whether labeled as such or not. Contingency management as part of social skills training attempts to differentially reinforce prosocial behaviors, leading individuals to be more likely to use these desired skills in the future. Research shows that varying contingencies may be an important component of social skills training (Harrower & Dunlap, 2001). There is often a regression in skills when adult facilitators fade their involvement. One possible reason given for

this regression is that students lose the reinforcement they had frequently received from adults for their social behaviors; without this reinforcement, the social behaviors quickly extinguish (Harrower & Dunlap, 2001). However, if contingencies are delayed or unpredictable (i.e., intermittent), these social behaviors should be less sensitive to the removal of adults (and their reinforcement) and more generalizable (Harrower & Dunlap, 2001). Similarly, involving peers in social skills training may transfer reinforcement from adults to reinforcement from peers, a more naturally occurring and sustainable form of reinforcement.

Self-management strategies. Self-management strategies can be useful in addressing a variety of target behaviors, including social skills. When a student is using self-management, he or she is independently (with various amounts of support from others) tracking his or her performance on a certain target behavior. These strategies shift responsibility from the adults to the student, which promotes inclusion in general education settings (Harrower & Dunlap, 2001). When the child is able to self-manage behaviors, they gain independence from relying on teachers and one-on-one aides (Koegel, Harrower, & Koegel, 1999). This independence can lead to decreased proximity to adults, which is more natural in a classroom setting and can facilitate increased socialization opportunities (Harrower & Dunlap, 2001; Koegel et al., 1999).

There are a variety of steps required before implementing successful self-management strategies (Harrower & Dunlap, 2001). First, the student needs to be taught to discriminate between behaviors (Harrower & Dunlap, 2001). If the child is unable to recognize when they are performing desired and undesired behaviors, self-management will be useless. One way to check this is to initially have the student record his or her behavior while an adult also records his or her behavior. The two records can then be compared for consistency. After the student can discriminate between behaviors, he or she needs to be able to evaluate his or her behavior in the

moment (Harrower & Dunlap, 2001). This can be a challenge at first, especially if negative behavior occurs when the student is emotional or upset. Third, the student must be able to accurately and honestly record his or her behavior (Harrower & Dunlap, 2001). If the student fails to record negative behavior in an effort to show himself in the best positive light, self-management is likely to fail. Finally, some system of reinforcement must be in place (Harrower & Dunlap, 2001). At first, the student can be rewarded just for ‘matching’ with the adult who is monitoring his or her behavior. This can be faded with the student then being rewarded for meeting a set criterion. This criterion can be increased as the student’s behavior improves. Eventually, the student can be in charge of rewarding him or herself when behavior meets a specified criterion.

Video modeling. Video modeling procedures are based on observational learning, an integral part of Albert Bandura’s social learning theory (Bandura, 1974). Bandura showed that children can acquire skills by watching other people perform the skills, as in his famous Bobo doll experiment (Bandura, Ross, & Ross, 1961). Social skills can be taught to children with autism through watching peers model social behaviors on a video (video modeling) or watching themselves perform social behaviors on a recording (video self-modeling). Interventions generally involve having the individual watch the video demonstration and then imitate the behavior of the model with reinforcement often given for successful imitation (Bellini & Akullian, 2007). Bellini and Akullian (2007) conducted a meta-analysis of video modeling and video self-modeling interventions for children and adolescents with ASDs. They concluded that both video modeling and video-self modeling are effective intervention strategies for many purposes, but especially for teaching social-communication skills (Bellini & Akullian, 2007). In

addition, the skills acquired through video modeling and video self-modeling seem to maintain over time and generalize across people and settings (Bellini & Akullian, 2007).

For any modeling interventions, it is essential that the child is motivated and attending to the video model (Bellini & Akullian, 2007). Children are most likely to attend to a model that they perceive as competent and who is similar to themselves in some way (e.g., physical appearance, age, ethnicity, gender, etc.; Bellini & Akullian, 2007). Common models are the child's peers, siblings, familiar adults, or the individual him or herself (Bellini & Akullian, 2007). Video self-modeling, where the individual is his or her own model, has additional benefits to video modeling with another model. When a child is his or her own model, he or she is able to see him or herself successfully completing a behavior, which theoretically would increase a child's self-efficacy (Dowrick, 2000). In addition, using the individual as the model satisfies all of the requirements Bellini and Akullian (2007) listed for a good model- the individual is obviously *similar* to the child (as the model *is* the child) and the child should be most likely to attend to watching him or herself perform behaviors (Dowrick, 2000).

In a video modeling study using a multiple baseline across behaviors design, Tetreault and Lerman (2010) used video models to teach three children with autism to initiate and maintain conversations. The three scripts for the three behaviors examined were getting attention, requesting assistance, and sharing a toy (Tetreault & Lerman, 2010). After watching the video model for each skill, the participants were reinforced for using the target behaviors (Tetreault & Lerman, 2010). Only once a participant reached mastery (defined as eight out of 10 demonstrations of the targeted verbal or nonverbal behavior) on the first skill, was the participant shown the next video model (Tetreault & Lerman, 2010). This intervention was successful for two of the three participants; the other participant required additional prompts in order to reach

mastery (Tetreault & Lerman, 2010). The methodology in this study proved to be a useful procedure for teaching specific social skills. However, it is important to note that this study focused on young children (aged 4 through 8) which potentially limits the generalizability to older students.

Mason and colleagues (2012) looked at the effects of video modeling on specific social skills in two college students with ASD using a multiple baseline single-case design across behaviors. The ASSP was used to determine skill needs for the video modeling intervention (Mason et al., 2012). Videos were created using peer models and included explicit instructions for each skill and examples of peers using these skills during a conversation (Mason et al., 2012). These videos were shown to the participants while they had social meetings with peers (Mason et al., 2012). The study was conducted over a course of five weeks with two 50-minute meetings each week (Mason et al., 2012). The 1-to-2 minute video clip was shown multiple times throughout each meeting. After each showing, a 5-minute data collection interval took place where the researchers rated the participants on the four targeted social skills (using a 9-point Likert scale; Mason et al., 2012). This intervention was effective for both participants; one participant saw robust increases across all four behaviors while the other participant saw stable increases across two of the four behaviors (Mason et al., 2012).

Social stories. School-based practitioners frequently use social stories when teaching social skills. Social stories were developed by Carol Gray and are intended to help individuals with autism learn the social information they are missing in order to help them act appropriately in social situations (Ali & Frederickson, 2006; Gray, 1994; Gray & Garand, 1993). Social stories are short, personalized pieces of directions that explicitly explain expectations in social situations. In schools, social stories are generally written and used by teachers, speech

pathologists, or parents (Ali & Frederickson, 2006). While social stories are often seen as socially valid interventions by school staff, the evidence base for their use is questionable (Ali & Frederickson, 2006). Ali and Frederickson (2006) looked at published research on social stories; while the authors found that all results were positive, most of the changes in targeted behaviors were modest and it was difficult to pinpoint the mechanism of change to the use of social stories. Ali and Frederickson (2006) concluded that there is a sufficient evidence base to suggest that social stories may hold promise but that future research is warranted. Sansosti, Powell-Smith, & Kincaid (2004) were even more cautious, concluding that the empirical foundation for the use of social stories to teach social skills is *very limited*. According to this team, there are many design issues (e.g., lack of experimental concern, weak treatment effects, confounding variables) in the studies that have shown positive effects for the use of social stories (Sansosti et al., 2004). In conclusion, although social stories are well-liked by school practitioners, there is *not* a strong evidence base for the effectiveness of social stories in teaching social skills to students with ASD. Therefore, social stories were not used as a treatment component in the current study.

Peer-mediated interventions. Involving typically developing peers in social skills training has been shown to be effective; this group of interventions is commonly referred to as peer-mediated interventions (Gonzalez-Lopez & Kamps, 1997). Typically developing peers have been found to be influential in teaching social skills, with the benefit of teaching these skills through observational learning (Gonzalez-Lopez & Kamps, 1997; Kamps et al., 1998). The meta-analysis completed by Reichow and Volkmar (2010) concluded that interventions utilizing peers have a great deal of support and are a recommended practice for teaching social skills. Some advantages of peer-mediated interventions are that they are more natural in a school setting and they minimize the need for adults (Harrower & Dunlap, 2001; Putnam, 1998). More

specifically, for students with ASD, peer-mediated interventions reduce the need for continuous one-on-one adult attention, making students with autism more able to function with increased autonomy in a way that more closely resembles that of their typically developing peers (Harrower & Dunlap, 2001; Putnam, 1998). Typically developing peers involved in these interventions often benefit both socially and academically themselves and enjoy participating (Carter et al., 2005; Cushing & Kennedy, 1997; Harrower & Dunlap, 2001; Kamps et al., 1998; Shalev, 2012). Thus, these interventions are socially valid and cost and resource effective (Ferreri & Plavnick, 2012). There are a variety of peer-mediated intervention strategies including peer supports, peer tutoring, and peer network interventions. Each of these is described below in greater detail.

Peer tutoring. Most of the research on peer-mediated interventions has included a student with disabilities working one-on-one with a typical peer. One of these variations is often called peer tutoring, which traditionally consists of pairing two students together to work on academic work, with one student (generally the typically developing peer) providing assistance, instruction, and feedback to the other (DuPaul & Eckert, 1998; Harrower & Dunlap, 2001). Peer tutoring has been shown to increase on-task behavior, academic performance, and frequency of social interactions for children with disabilities in inclusive classrooms (DuPaul & Eckert, 1998; Harrower & Dunlap, 2001; Locke & Fuchs, 1995). One criticism of traditional peer tutoring is that it can be stigmatizing for the student with disabilities to be paired with another student in a tutoring arrangement. One possible solution to this is class-wide peer tutoring, in which every student is paired with a partner (Harrower & Dunlap, 2001). Class-wide peer tutoring can lead to increased time-on-task for all students and allows all students to benefit from pacing, feedback,

immediate error correction, and increased content coverage (Fuchs, Fuchs, Mathes, & Simmons, 1997).

Although peer tutoring arrangements have been shown to be effective for improving outcomes for students with disabilities, these outcomes are generally academic (e.g., on-task behavior, academic performance). Increases in social interactions during tutoring are often restricted to task-related content. While useful, peer tutoring does not often promote the inclusion of students with disabilities in *both* the social and academic realm of the classroom.

Peer support arrangements. Peer support arrangements (Carter & Asmus, 2009; Carter, Cushing, Clark, & Kennedy, 2005; Carter & Kennedy, 2006; Carter, Sisco, Melekoglu, & Kurkowski, 2007; Odom & Strain, 1986) are similar to, but more encompassing than, peer tutoring. Peer support arrangements involve training one or more peers to support a student with disabilities both academically and socially within the classroom (Carter & Asmus, 2009). According to Carter and Kennedy (2006), peer support arrangements involve four core intervention components: student selection, peer training, peer-delivered support, and adult monitoring. When selecting students, Carter and Kennedy (2006) suggest selecting one or two peers from within the same classroom to serve as peer supports; however, other numbers of peer supports have also been successfully used. School staff can utilize a variety of selection strategies including having teachers invite specific students, asking for peer volunteers, or making a general announcement to the classroom (Carter & Kennedy, 2006). When choosing participants, school staff should consider the preferences and educational and support needs of the student with disabilities, the activities the group will be engaging in, and the interest and academic and social needs of the potential peer supports (Carter & Kennedy, 2006). Once

students are selected, they should be moved so that they sit next to the student with disabilities and remain in close proximity with the student during instruction (Carter & Kennedy, 2006).

Once peers are selected, they must be trained. Peers first need to be provided with the rationale behind the peer supports strategy and information on the student with disabilities (e.g., preferences, expected behaviors, communication modes, challenges; Carter and Kennedy, 2006). Peers must then be trained in strategies for supporting their classmate with disabilities. These strategies may include ideas for modifying and adapting class activities; supporting behavior intervention plans, if necessary; providing frequent, positive feedback; modeling appropriate communication skills; and facilitating interactions with other students in the class (Carter & Kennedy, 2006). Training and strategies taught are tailored to the individual needs of the student with disabilities and the typically developing peer supports involved in the intervention. Carter and Kennedy recommend that this initial training should occur for two to four class periods, depending upon the needs of all involved (Carter & Kennedy, 2006).

The third component of peer support arrangements is the actual peer-delivered support. At first, the paraprofessional or other one-on-one adult support may model the support strategies used with the student as the peer supports begin to work with the student with disabilities (Carter & Kennedy, 2006). As the peer supports learn how to best support the student and become more comfortable, more and more of the support comes from the peers rather than from the adult. Peer supports eventually assume the primary role for supporting the student both academically and socially. This support can involve paraphrasing lectures, clarifying instructions, providing reinforcement, and facilitating interactions with others (Carter & Kennedy, 2006).

The final essential component of peer support arrangements is adult monitoring. Peer supports benefit from ongoing monitoring and feedback from adult facilitators (Carter &

Kennedy, 2006). These adults can be paraprofessionals, special educators, and/or general education teachers. Carter and Kennedy (2006) suggest that peer supports receive adult feedback every 10 to 15 min and at the end of each class period.

Peer support arrangements have been shown to be effective in engaging students with severe disabilities in both academic and social aspects of inclusion classrooms (Carter & Kennedy, 2006). Academically, peer support arrangements have been shown to either maintain or enhance students' academic engagement within the general curriculum (Carter & Kennedy, 2006). Shukla and colleagues conducted two studies examining the impact of peer support arrangements on the academic engagement of middle school students with severe disabilities enrolled in general education classrooms (Shukla, Kennedy, & Cushing, 1998; Shukla, Kennedy, & Cushing, 1999). For half of the peer support arrangements in these two studies, students with severe disabilities showed substantially higher levels of active engagement when working with peer supports than when they were working exclusively with one-on-one adult support. For the other half of students with disabilities, students displayed comparable levels of academic engagement in the peer support condition as they did with one-on-one paraprofessional support (Shukla et al., 1998; Shukla et al., 1999). Similarly, Carter et al. (2005) demonstrated that middle and high school students with severe disabilities maintained higher levels of engagement in instructional activities when working with one or two peer supports in core academic classrooms. These findings suggest that paraprofessionals do not always need to act as direct, one-on-one support for students with severe disabilities (Carter & Kennedy, 2006).

Educators and parents are sometimes concerned about typically developing peers involvement in these interventions, fearing that there may be some detrimental impact on students' academic performance due to being involved in these peer support arrangements.

However, research suggests that peers' academic performance is not only *not* hampered by involvement in these programs but that many students' academic performance actually improves when they assume responsibility for assisting a classmate with a disability (Carter & Kennedy, 2006; Cushing & Kennedy, 1997, Shalev, 2012). For example, Cushing and Kennedy (1997) followed three typically developing middle school students who served as peer supports. Before becoming involved in a peer supports intervention, all three of these students were identified by teachers as struggling academically. After being trained as peer supports for a student with disabilities, the academic engagement of these typically developing students increased significantly (Cushing & Kennedy, 1997). These peers were engaged in instruction more frequently, completed significantly more homework than they had previously, and participated in classroom activities more than they had before the intervention. These benefits were shown again in two studies by Shukla and colleagues (Shukla et al., 1998; Shukla et al., 1999). In these two studies, students who already showed high levels of academic engagement showed no changes when they assumed their roles as peer supports while students who were struggling academically increased their academic engagement after becoming peer supports.

Why do peers seem to benefit academically from serving as peer supports? One reason may be that peer supports are in contact with educators and paraprofessionals more than most students which may be helpful academically (Carter & Kennedy, 2006; Shukla et al., 1998). In addition, by being peer supports, students are required to learn material more carefully in order to teach this material or support the student with a disability in acquiring the information. In other words, the general education students must attend closely to the material in order to support the student who they are paired with (Carter & Kennedy, 2006). Finally, peers may be getting

more instructional support while acting as a peer support and may be benefiting from more immediate corrective feedback and positive reinforcement (Carter & Kennedy, 2006).

There may be non-academic benefits for typically developing peers exposed to peer support arrangements as well. Shalev (2012) looked at the impacts of peer support arrangements on peers' attitudes toward students with disabilities. Shalev (2012) administered the *National Survey of Youth Attitudes* (Siperstein, Parker, Bardon, & Widaman, 2007) to high school students who did and did not participate in peer support arrangements. Although sample size constraints kept results from being statistically significant, group trends displayed increases in positive attitudes towards students with disabilities for peers who participated in peer supports **and** for peers who did not participate in the study but were in classes where peer supports were implemented (Shalev, 2012). These trends were not seen for peers who were not involved in classes with peer support arrangements. This suggests that simply having these interventions in place in a classroom can positively impact all typically developing students' views of individuals with disabilities, not just those who participate as peer supports (Shalev, 2012).

Peer network interventions. Although the dyads common in peer tutoring and some peer support strategies can be effective, these interventions do not always match well with the natural social interactions that occur in schools. Most adolescent social interactions occur in group contexts, so it makes sense that the most socially valid social skills interventions would include a group of peers rather than a single typically developing peer (Haring & Breen, 1992). Peer networks are interventions well suited for this purpose and have a growing evidence base. A number of studies have demonstrated that cooperative groups which include typically developing students and students with disabilities lead to increased levels of social interactions (Harrower & Dunlap, 2001; Kamps et al., 1992; Kohler et al., 1995). Much of this research has focused on

young children. For instance, Kamps et al. (1992) used a peer group for three boys with autism who were in an integrated first-grade classroom. In this study, all group members were taught specific social skills including how to initiate, respond, and continue conversations; how to greet others; how to ask for assistance; how to take turns; and how to give and accept compliments (Kamps et al., 1992). These skills were selected and taught based on the Skillstreaming Curriculum (McGinnis & Goldstein, 2011). Social skills training was conducted during the first 10 min of the 20 minute sessions (Kamps et al., 1992). Results of these groupings demonstrated that the students with autism were more fully included in the classroom following the intervention (Kamps et al., 1992). One limitation of the study is that the selection of the skills that were ultimately taught was not based on direct assessment of the needs of the students, but instead was based on what the researchers saw as key skills required in social situations. These types of generalizations, as opposed to focused assessment and intervention linked to specific needs, were highlighted as a deficit in the social skills training literature by Gresham et al. (2001). It is possible that the students would show greater gains if the social skills taught were better matched to their individual needs.

Similar interventions were utilized with other researchers (Chung et al., 2007; Gonzalez-Lopez & Kamps, 1997; Thiemann & Goldstein, 2001). For instance, Garrison-Harrell and colleagues examined the effects of a peer network strategy on the quantity and quality of social interactions for three students age 6 and 7 with autism (Garrison-Harrell et al., 1997). Each network consisted of five typically developing students, an adult facilitator, and the student with autism. The five peer network members were trained to use the student with autism's augmentative communication device and to model appropriate social skills to interact with the student and maintain conversations (Garrison-Harrell et al., 1997). Peers were trained in 30-

minute sessions 4 days a week for 2 weeks without the student with autism present (Garrison-Harrell et al., 1997). The selected skills were chosen by the primary investigator and classroom teacher as critical skills and through a review of the literature; social skills that the peers were trained in included initiating and responding, conversing, sharing, and saying nice things, among others (Garrison-Harrell et al., 1997). Peers were taught these skills using the published curriculum *Social Skills Tutoring and Games: A Program to Teach Social Skills to Primary Grade Students* (Walker, Hops, & Greenwood, 1988). The students with autism were included in the training during the final two training sessions. The networks themselves, including the five peers and the student with autism, met and engaged in 20-minute cooperative and academic group activities one to three times per day, for 3 to 4 days per week across three settings (Garrison-Harrell et al., 1997). Peers in the network were asked to engage in the activities and to interact with the student with autism via the augmentative communication device (Garrison-Harrell et al., 1997). The investigators were primarily interested in whether implementing peer networks increased the frequency and duration of peer interactions for the students with autism in three different settings. Results indicated that holding the peer networks in multiple settings led to increased frequency and duration of peer interactions in each of these settings for all three target students (Garrison-Harrell et al., 1997). Importantly, there did not seem to be generalization between the settings. In other words, there were not increases in the number of social interactions seen in each setting until the peer networks were implemented in that setting.

While this study shows the promise of peer networks, there are some limitations. First, there was a very small sample size (i.e., three students with autism), which limits the generalizability of the findings. Second, the students were young and it is unclear whether these procedures would work with older students. Third, the social skills targeted were chosen based

on staff consensus with the researchers rather than through a systematic process to match the needs of the targeted students. Fourth, the students with autism were only included in the social skills training component for the last two training sessions. It is possible that greater benefits would be found if the students with autism were directly included in more of the social skills training or if the social skill targets had been more individualized through an initial assessment. Finally, these researchers did not examine any changes in the target students' social skills.

The peer network intervention utilized in the current study is most closely aligned to the social network intervention used by Haring and colleagues (Haring & Breen, 1992). This study examined the use of a social network intervention for two junior high students with moderate to severe disabilities (one with an intellectual disability and one with autism). The researchers worked with the children's school to identify two groups of typically developing peers and adult integration facilitators to make up the peer network for each focus student (Haring & Breen, 1992). The peer networks met each week to discuss their social interactions and communication techniques. In addition, the peer network members picked out times in their days when they would cross paths with the student with disabilities and would plan interactions. Social skills that were taught were reinforced by peers between classes and at lunch and by the adult facilitator twice a week for 15 min in a special education classroom.

Although the adult facilitator was an important component of the peer network intervention, the typically developing peers were expected to control much of the meeting, in terms of scheduling, coming up with interaction strategies, and problem solving (Haring & Breen, 1992). The goal of this design was to minimize the input of adults and increase the naturalness of the group. Thus, the adult facilitator would prompt interactions, support all students, and reinforce interactions and positive social communication, but would not lead the

group in a traditional sense. The groups varied depending upon the week and the members of the group. However, the meetings always involved discussing the previous week's interactions, reviewing the self-monitoring data peers completed, making any necessary changes to the interaction schedule, working on social skills strategies, role-playing and modeling these strategies, problem solving, and participant reinforcement (Haring & Breen, 1992). The social skills that were addressed by peers and/or the adult facilitator were determined by the peer network during weekly network meetings (Haring & Breen, 1992). The social skills addressed were related to responding appropriately to peers; it is unclear if other social skills were targeted. During the week, peers followed an interaction schedule, finding the focus student at certain times of the day to engage in social interactions. The typically developing peer network members monitored the number and quality of interactions throughout the week (Haring & Breen, 1992).

Results of this study showed that the peer network intervention successfully increased the quantity and quality of the social interactions between both the students with disabilities and typically developing peers (Haring & Breen, 1992). The targeted locations for increasing unprompted social interactions included the 5-minute transition times between classes and the 30-minute lunch period. During and after the intervention, interactions between the target students and network members occurred in hallways, in locker rooms, in the cafeteria, and on the outdoor school field (Haring & Breen, 1992). For this study, a social interaction was defined as any class of behavior that included at least one initiation followed by a response; these social behaviors could be verbal or nonverbal (Haring & Breen, 1992). For one of the students, observed unprompted interactions improved from a mean of 1.2 interactions per day at baseline to a mean of 7.44 interactions during the peer network intervention. After one month of maintenance, the mean was 9.0 interactions per day; after two months, the mean was 7.0

interactions per day. In addition, interactions changed from only single-turn interactions at baseline to only multiple-turn interactions during and after intervention. For the second student, the frequency of interactions increased from a mean of 2.6 interactions daily at baseline to 8.03 interactions daily during the peer network intervention. The frequency of multiple-turn interactions increased from a baseline rate of 0.89 interactions per day to a mean of 7.25 interactions per day (Haring & Breen, 1992).

Although there were clear improvements seen for each of the middle school students, there are limitations to this study. One limitation is that the targeted social skills were not identified through any structured assessments but rather informally through peer comments (Haring & Breen, 1992). In addition, it does not appear that there was any formal process for addressing these social skills other than discussing them, modeling them, and role-playing (Haring & Breen, 1992). In other words, a published curriculum was not used or referenced. It is also unclear how much time was devoted to social skills training during each network meeting. Therefore it does not appear that this initial study on peer networks had as its focus a targeted and specific plan to address social skill deficits for the student with disabilities. Therefore, adding in this component in a structured and systematic way would be an addition to the current literature.

As with the other social skills training techniques, the majority of research on peer networks has focused on young children. The research literature is only beginning to examine the impacts of peer networks for high school students with disabilities. Hochman and colleagues (in press) set up peer networks held at lunch in the cafeteria for four students with autism. Peer network meetings for these students lasted 30 min and involved the student with autism eating with his or her peer partners, a shared activity (e.g., a game), conversation, reflection on the

network, and reporting of interactions occurring outside of the group (Hochman et al., in press). The authors report that peer network members without disabilities modeled appropriate social skills, however, no direct social skills training was incorporated into the networks. All four participants with autism increased in social interaction with peers during the lunch period from baseline to intervention. Baseline percentages of intervals engaged in social interaction ranged from 0% to 14% (Hochman et al., in press). Percentages of intervals engaged in social interaction during the peer network intervention ranged from 32% to 57% (Hochman et al., in press).

This study demonstrated that peer network interventions can be effective for increasing the amount of time high school students with autism engage in peer interactions during lunch, a time and place that is a very social setting for typically developing students. Additionally, this study demonstrated that social interactions can increase without introducing explicit social skills instruction (Hochman et al., in press). However, it is not clear if adding an explicit social skills training component to the peer network would have led to greater gains in either the frequency or quality of social interactions for the students with autism. One limitation of this study is that the authors did not examine the quality of the interactions, instead focusing on the percentage of intervals that students displayed peer interactions. This focus on quantity of interactions is an important next step in the literature.

A peer network intervention for high school students with ASD was also examined in a recent study by Gardner and colleagues (in press). This study implemented peer networks for two students with ASD in an advisory class. In addition to recording the quantity of social interactions, the authors asked teachers to identify a social-related goal to work on during the peer network group (i.e., refraining from interrupting and maintaining engagement with peers). Although a social goal was chosen for each student and peers were either directly or indirectly

informed of the goal, social skills instruction was not explicitly implemented and peers were not asked to teach specific social skills to improve the targeted social goal. Results indicated that both students with ASD and peers engaged in more intervals with social interactions during the peer network intervention than at baseline (an increase from 3% of intervals to 54% of intervals for one student and an increase from 16% of intervals to 65% of intervals for the second student). This data suggests that peer networks are effective interventions for increasing the quantity of social interactions high school students with ASD have with their peers during advisory classes. The researchers also recorded the percentage of intervals that the social goal was observed for each student. For one student, the target social skill (refraining from interrupting) was demonstrated on average during 1% of the initial intervention phase but this increased to 23% of the second intervention phase after the peer network was withdrawn and re-introduced. For the second student, the target social skill (maintaining engagement with peers) was demonstrated during 37% of intervals within the intervention phase and only during 1% of intervals when the peer network intervention was withdrawn. Although this data suggests that the peer networks were effective in improving the two students target social skills, there are some limitations. First, there are often quality aspects to social behaviors such as interrupting and maintaining engagement that are missed with simple interval recording of behaviors. This may make improvements in these social skills appear better or worse than they actually were. Additionally, since the social skills training component was part of the peer network from the beginning, it is unclear whether the social skills goals led to the positive outcomes in the study or if the network meetings themselves led to the changes (or a combination of the two components). Additional research should examine the potential additive effects of social skills training during peer networks.

Carter and colleagues (2013) published steps to implementing effective peer networks for high school students with disabilities. After securing support for the program from various stakeholders and identifying students with disabilities who would benefit from a peer network, Carter et al. (2013) suggests finding a strong network facilitator. Many school staff members can serve as effective peer network facilitators. It is important that the staff member is interested and motivated to serve in the role, has some familiarity or is willing to gain familiarity with the student with a disability, and has access to peers without disabilities to recruit for the peer network (Carter et al., 2013). Selecting and inviting peers without disabilities to serve as peer partners can be the most daunting task for network facilitators, especially facilitators who are special educators and may not have relationships with many typically developing students. Some tips for selecting peers include observing who the student with a disability already interacts with, looking for peers with similar interests to the student with a disability, and inviting peers who are part of social groups that may have additional peers interested in the network (Carter et al., 2013). Facilitators also must determine the logistics of the network meetings, including figuring out where and when the network will meet (Carter et al., 2013). Before starting regular network meetings, Carter and colleagues (2013) recommend holding a meeting to orient peers to the peer network. During this meeting, peers should be given a general overview of the student with a disability and the peer network intervention, be encouraged to suggest ideas for the network and to ask questions at any time. It is important that peers be familiarized with the student with a disability's means of communication and be informed of effective ways to interact with the student. Regular weekly meetings of the peer network allow students to develop and strengthen relationships with one another (Carter et al., 2013). Network meetings look different depending upon the facilitator, student with a disability, and peer partners. However, most network

meetings include some sort of conversation or interaction, engagement in a shared activity, and discussion about social interactions that occurred outside of the meeting (Carter et al., 2013). During network meetings, facilitators encourage peers and the student with a disability to find each other and connect socially outside of meetings (e.g., between classes, before and after school, during lunch; Carter et al., 2013). These interactions are essential and differentiate peer networks from other social groups. Facilitators can check in with students both within and outside of meetings to ensure that these connections are happening and troubleshoot any problems. Finally, facilitators should be continuously reflecting about the peer network and working with students to improve the network. When it comes time for the network to end (because of the end of a semester or school year), the facilitator and network members can determine if and how they would like the network to continue (Carter et al., 2013). The facilitator may assist by supporting students in sharing contact information or arranging out of school meetings.

One of the limitations of peer networks (and peer support arrangements, as well) are that these interventions emphasize naturalistic social interactions with limited peer training and limited inclusion of social skills training for the student with disabilities. In other words, there is generally little focus placed on teaching the student with disabilities new social skills. Yet, what we know from the literature is that students with autism demonstrate improvements in social skills when they are directly, and systematically, taught these skills (Chung et al., 2007). It is possible that if specific social skills were taught and practiced as part of a peer network, even greater improvements in skills for the students with disabilities would be seen. Peer networks lend themselves to direct teaching of social skills as the group, with several peer models, meets weekly outside of the classroom, with the time and the opportunity to work on brief social skills

training. In addition, as mentioned most of the research on peer networks has been with elementary aged children, with some studies being conducted with middle school students. Peer networks have only started to be examined with high school students with disabilities.

Published curricula. Once a medium (e.g., peer networks) for social skills training is determined, the method of teaching the social skills must be decided. One way to teach social skills is to use, either in full or in parts, a published curriculum. The advantage of a published curriculum is that these curriculums provide a structured, explicit way to teach social skills and we know that systematic and explicit instruction is essential (Chung et al., 2007). In addition, published curriculums often break social skills down into multiple steps which can be helpful for teaching the skills. There are a number of social skills curricula that have been utilized in the research literature (e.g., Elias & Clabby, 1992; Elliott & Gresham, 1993; Walker, et al., 1988; Walker, McConnell, Holmes, Todis, Walker, & Golden, 1983). Although most social skills curricula began with students with high incidence disabilities and emotional behavioral disabilities, curricula are now being developed specific to students with autism (e.g., Bellini, 2006a; Winner, 2005). Although these curricula are helpful in that they specifically target students with ASD, they often have less direction regarding teaching specific skill deficits than some other curricula.

One popular set of curricula that contains explicit steps for specific social skills is Skillstreaming (Goldstein & McGinnis, 2011; McGinnis, 2005; McGinnis & Goldstein, 2011). There are three programs in the Skillstreaming series used in the schools. These programs are *Skillstreaming in Early Childhood* (McGinnis, 2011), *Skillstreaming the Elementary School Child* (McGinnis & Goldstein, 2011), and *Skillstreaming the Adolescent* (Goldstein & McGinnis, 2011). The Skillstreaming system was originally introduced in 1973 and was first focused on

working with adults with a variety of concerns. It is now in its third edition for use in schools. The Skillstreaming curriculum is based on structured learning theory, which involves many behavioral components (McGinnis & Goldstein, 2011). The authors mention that it is separate from a pure behavioral approach because it does not rely solely on operant procedures and the behaviors do not have to already be in the person's repertoire. Instead, the Skillstreaming model assumes the learner is weak in or lacks behavioral skills that can be explicitly taught (McGinnis & Goldstein, 2011). The four principles of learning that the curriculum is based on are modeling, role-playing, performance feedback, and generalization training (McGinnis & Goldstein, 2011).

The adolescent book is most appropriate for use in high schools; it includes strategies and a program for teaching adolescents 50 social skills divided into six categories (Beginning Social Skills, Advanced Social Skills, Skills for Dealing with Feelings, Skill Alternatives to Aggression, Skills for Dealing with Stress, and Planning Skills; Goldstein & McGinnis, 2011). Most often, school staff members select (often independent of assessment data) which of these 50 skills are most needed by the specific student(s) being served. Each skill is broken down into explicit steps. For example, the skill of apologizing is broken down into four steps: (1) decide if it would be best for you to apologize for something you did, (2) think of the different ways you could apologize, (3) choose the best time and place to apologize, and (4) make your apology (Goldstein & McGinnis, 2011, p. 149).

The authors state that the Skillstreaming curriculum is evidence-based with over 30 years of research behind it (McGinnis & Goldstein, 2011). However, one should be cautious in accepting this statement blindly. The behavioral components the system is based on certainly do have a great deal of evidence behind them. Although there is a good deal of research on the program and the research that is there is mostly positive, it is often unclear what parts of the

program were implemented and there were sometimes other components added to the Skillstreaming process. In addition, Skillstreaming is not listed specifically in What Works Clearinghouse.

Lopata et al. (2012) examined the use of Skillstreaming with groups in schools for 6-9 year olds with high functioning Autism Spectrum Disorders. The intervention consisted of Skillstreaming lessons with other components (i.e., parent training and face and voice emotion computer training; Lopata, et al., 2012). At the end of the study, students showed large effect sizes in knowledge of the social skills and medium effect sizes for behavioral change in both targeted social skills and broader social skills based on both parent and teacher ratings (Lopata et al., 2012). However, because there were additional components included in the intervention phase, it is impossible to know to what extent the effects seen can be attributed to the Skillstreaming lessons. In another study, Sheridan et al. (2011) looked at the effects of the Skillstreaming curriculum on four specific targeted skills. For 647 children in third grade, the Skillstreaming lessons led to improvements in all four of the targeted skills (Sheridan et al., 2011). On both teacher and mental health practitioner ratings, there were moderate to strong effect sizes for each skill (Sheridan et al., 2011). However, there are limitations with this study. Only 4 of the 40 skills in the *Skillstreaming in Early Childhood* (McGinnis & Goldstein, 2003) curriculum were examined. Another major concern is that there was also no comparison group used in the study as well as no individualization of the targeted skills with all 647 students taught the same 4 skills.

Finally, the *Skillstreaming the Adolescent* curriculum was used in a video modeling study with middle school students on the autism spectrum to both identify skill areas to target and to provide instruction in these areas (Ogilvie & Dieker, 2010). As mentioned previously, the

authors used the assessments provided in the Skillstreaming curriculum to narrow down the list of potential social skills to target in conjunction with the ASSP (Ogilvie & Dieker, 2010). The steps of each targeted skill were used within a five-step treatment procedure. Specifically, the intervention involved (1) introducing the skill to the student and peer mentor, (2) defining the steps of the skill, (3) showing the video model to the student and peer mentor, (4) having the student practice with his/her peer mentor, and (5) reviewing the steps of the skill (Ogilvie & Dieker, 2010). The Skillstreaming steps listed in the curriculum for the targeted skills were utilized in steps two and five; in addition, steps one and four are part of the recommended Skillstreaming intervention process (Goldstein & McGinnis, 2011). Video modeling (step three) was the specific intervention component Ogilvie and Dieker (2010) was most interested in and the videos made were used to model appropriate social skills taught in the Skillstreaming curriculum. However, video modeling is not a common or required practice with the Skillstreaming curriculum. Results of the study indicated that all three participants demonstrated growth in the five social skills, although this growth varied in degree across participants and days.

One limitation of this study is that, although individual assessment input was used in determining the most important social skills goals overall, the same five social skills were chosen across the three participants in order to compare across participants (Ogilvie & Dieker, 2010). It is possible that greater outcomes would have been found had each participant received instruction in the skills that were most needed for him or her individually rather than in the skills that were most needed by the three together. In addition, the social skills were measured using a 4-point Likert scale with 0 being no demonstration of the skill, 1 being a low-level demonstration, 2 being a mid-level demonstration, and 3 being a high-level demonstration. It is

possible that more change would be evident using a more sensitive Likert scale or a different measurement system.

In sum, the Skillstreaming curriculum provides school staff members with explicit steps to teach a variety of social skills. The research base for the use of Skillstreaming is not complete, with few peer-reviewed studies investigating the impact of the curriculum. However, there are a number of studies supporting the use of this curriculum or modification of this curriculum with children and adolescents. It is flexible enough to allow practitioners to choose skills to target and the method in which to target them (i.e., in small groups, one-on-one). This flexibility along with explicit steps makes Skillstreaming a good resource for incorporating social skills training into peer networks.

Purpose of the Proposed Study

A goal of current educational practice is to include students with disabilities in general education settings. While this is a positive step for students with autism, research shows that just putting students with disabilities in the same location as typically developing peers often fails to lead to significant improvements in social interactions (e.g., Carter, et al., 2005). One reason for this lack of true inclusion may be that students with autism lack the social skills necessary to interact successfully in these settings (Bellini, et al., 2007). There are a wide variety of social skills interventions for use with students with autism, all with their own pros and cons. We know that direct instruction with peers as models is an ideal way for students with autism to learn and generalize the use of social skills (Gonzalez-Lopez & Kamps, 1997; Reichow & Volkmar, 2010). One way in which the inclusion of students with autism in the general education setting has been demonstrated to be successful is through the use of peer network interventions. Peer network interventions are socially valid and match the natural context in which typically developing

students interact with their peers (Haring & Breen, 1992). These peer networks seem to be a perfect setting for social skills instruction, which is best when it is part of the natural context and reinforced by peers (Harrower & Dunlap, 2001). However, most peer network research studies to date lack a social skills instruction component, and those that include social skills goals often do not incorporate explicit training. Incorporating explicit social skills training within a peer network for high school students with autism has not been examined within the literature. With the lack of research on effective social skills instruction for students with autism, in general, and especially for students at the secondary level, the field would benefit from an examination of a peer network intervention with an explicit social skills training component at the high school level. In this peer network plus intervention, high school students with autism engage in a peer network intervention and explicit social skills instruction is introduced systematically to this intervention to examine its impact on outcomes.

Research Questions

1. Is the peer network plus intervention useful for (a) increasing targeted social skills as measured through direct observations and the ASSP, (b) increasing the number of social initiations and responses between the target student and peers during network meetings, (c) increasing students' broader social skills and adaptive behaviors as measured by changes on the Vineland, SSIS, and case manager and parent packets, and (d) increasing the number of social contacts and interactions students have in and out of school, as measured by case manager and parent ratings?
2. Are peer networks with an added social skills training component (i.e., peer network plus) socially valid interventions that can be implemented in high schools?

- a. Do the students with autism, school interventionists, and peers view this intervention positively, as rated on social validity forms?
 - b. Do paraprofessionals or special educators feel that they can implement these interventions in the future, as indicated by their responses on the social validity forms?
3. Is the Autism Social Skills Profile (ASSP) sensitive enough to detect improvements in social skills as indicated by changes in pre-to-post scores on the ASSP and is it as sensitive when compared to changes demonstrated on other measures (SSIS, Vineland, observations)?

Chapter 3

Methods

The purpose of this chapter is to describe the methods utilized in the current study. The chapter contains information regarding participants, setting, measures, research design and methodology, design of the intervention, and a description of data analysis procedures.

Participants

Inclusion criteria. High school students with autism were targeted for inclusion in this study. In order to participate, students were required to have a primary or secondary educational label of autism according to their Individualized Education Program (IEP), be eligible for the state's alternate assessment or have a moderate to severe cognitive impairment, and provide student assent and parental consent to participate. It was stressed to school staff that individuals who were high functioning and performing close to grade level were not appropriate for this study. In addition, students were only able to participate if a school staff member agreed to serve as the network facilitator.

Recruitment procedures. To identify potential participants, the primary investigator contacted eight districts in one county in the state of Wisconsin. At each district, the superintendent, special education director, or student services director was contacted by email and/or phone regarding the research study. Each district was provided with an overview of the project and invited to ask for additional information. Of the eight districts contacted, four agreed to participate in the research project. Figure 1 outlines the recruitment process for this study.

After receiving conditional approval from the University of Wisconsin-Madison Education/Social and Behavioral Science Institutional Review Board (IRB; Appendix A) and district approval from each of the four districts (see Appendix B for a blank district approval letter), the primary researcher met with staff at each of the districts' high schools to identify

potential participants. School staff members sent consent forms to the homes of eligible students with autism (see Appendix C). A total of 12 students with autism were invited to participate in the study across four high schools. After an initially low return rate, eight of the students received a second consent form. Five families returned consent forms across the four high schools, making the return rate 41.7%. After receiving parental consent for the students with ASD to participate, the primary researcher contacted the students' case manager to obtain their consent to participate in the study and fill out measures for the student (see Appendix D). All case managers agreed to participate and fill out measures. The case managers were also asked for ideas on staff members to invite to participate as the peer network facilitator for the student. At schools A and B, case managers for three of the students were interested in serving as the network facilitator for their student(s) and signed the facilitator consent form (see Appendix E). At school C, the case manager helped identify a general education teacher who was interested in serving as the network facilitator. At school D, a facilitator was not able to be identified. Discussions occurred with the student's case manager, staff members suggested by the case manager and special education director, as well as various previous contacts at the school in an attempt to find someone interested in serving as the network facilitator. Since a facilitator was not able to be identified this fifth student was unable to participate in the study. Therefore, four students with autism participated in the study. Three of the students provided signed assent on the initial consent form sent to parents; a fourth student, who could not sign assent, provided verbal assent (see Appendix F).

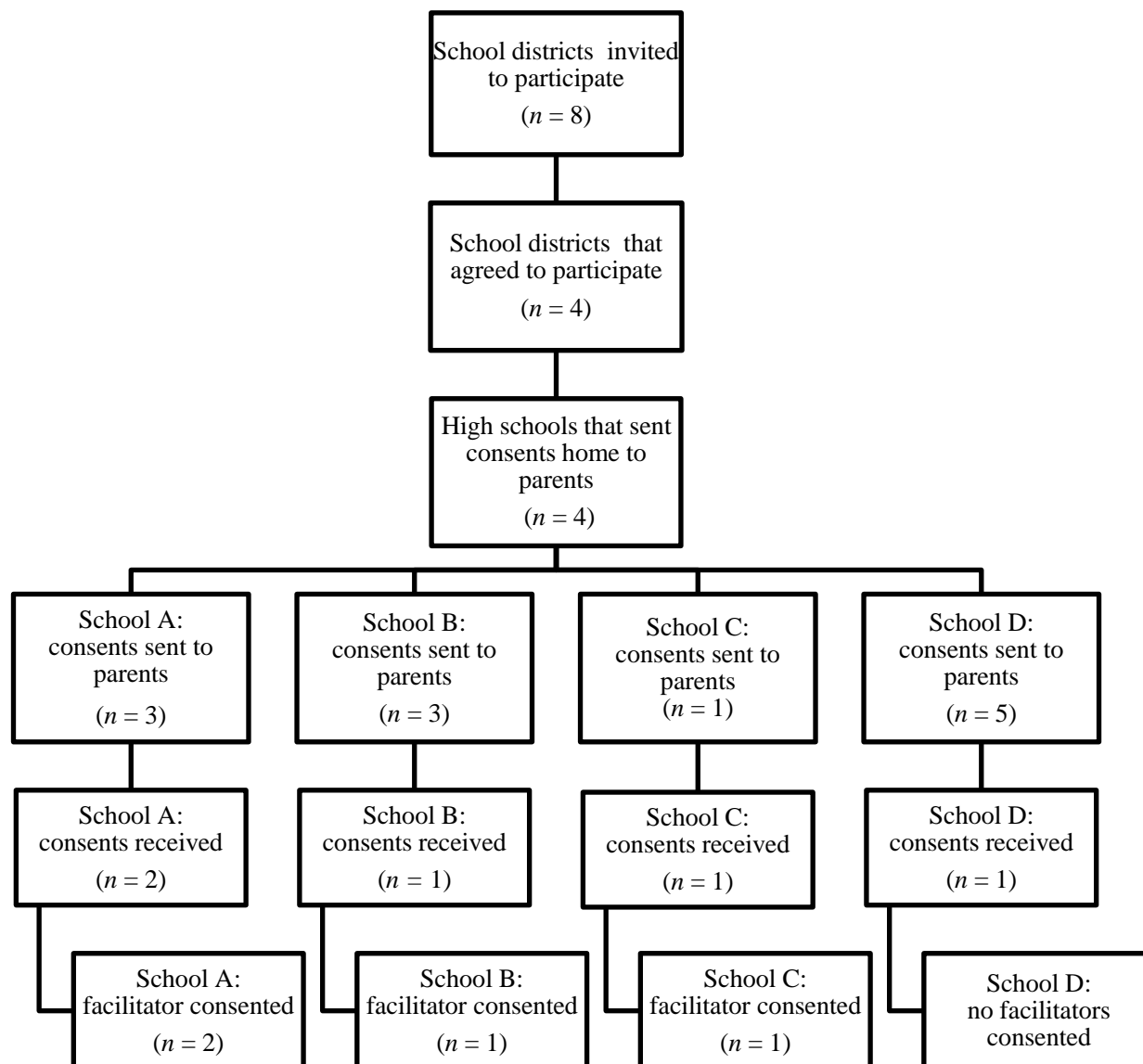


Figure 1. Recruitment Process

Participants with ASD. Four students with ASD participated in this study.

Demographic information for these participants is found in Table 2. Applicable SSIS (Table 3) and Vineland (Table 4) baseline scores are also presented to describe participants. The CARS2 (Schopler et al., 2010) was also used to describe participants in terms of their autism symptoms. This information can be found in Table 5.

Participant one, Isaiah, was an 18-year-old male student in twelfth grade. Isaiah attended School C, which was located in a suburban district. Isaiah had an educational diagnosis of autism and spent 66.7% of class periods in general education classrooms. His CARS2 score, 49, indicated severe symptoms of ASD, consistent with his stated IEP diagnosis. Although Isaiah was eligible for the state's alternate assessment, he did participate in the state's assessment with accommodations based on his IEP team's recommendation. Isaiah was a verbal communicator. Isaiah's case manager rated him on the SSIS as having more characteristics of autism than the general population, below average social skills, and more problem behaviors than the general population. The scores on his case manager's Vineland showed that Isaiah had a moderately low adaptive behavior composite, as well as moderately low levels in socialization and communication. Isaiah's parents did not return the initial questionnaires at wave one; therefore, scores are not available for comparison to the case manager. The primary investigator called Isaiah's family three times and asked the case manager to check in with the family twice regarding the first wave of information. The case manager gave Isaiah's parents a second copy of the wave one documents. However, the wave one materials were never returned.

Table 2

Participant Demographic Information

Student	Participant Number	Age	Grade	Gender	School	Percent of School Day Included	Eligible for Free/Reduced Lunch
Isaiah	1	18	12	M	C	66%	No
Maddie	2	16	11	F	B	0%	No
Ryder	3	17	12	M	A	50%	No
Aiden	4	17	12	M	A	50%	No

Participant two, Maddie, was a 16-year-old female student in eleventh grade. Maddie attended School B, which was located in a suburban district. Maddie had a primary educational

diagnosis of autism and a secondary speech and language impairment. Maddie had a CARS2 score of 49 (severe symptoms of ASD). Maddie was academically capable of attending some general education classes (e.g., elective courses) with paraprofessional support. However, according to her case manager, Maddie's high levels of social anxiety kept her from attending any general education classes and she was in special education classes throughout the entirety of her day. Maddie was eligible for the state's alternate assessment, but did participate in the state's assessment with accommodations based on her IEP team's recommendation. Maddie was a verbal communicator but rarely spoke in the presence of individuals she did not know well. Maddie had a significant speech impairment which made it difficult for others to understand her when she spoke. Maddie's parent and case manager rated her on the SSIS as having more characteristics of autism than the general population. Maddie's parent rated her social skills as well below average on the SSIS whereas her case manager rated them as average. Maddie's parent rated her level of problem behaviors as average while her case manager rated her level of problem behaviors as above average. Finally, on the Vineland case manager report, Maddie was rated as having a moderately low adaptive behavior composite and level of socialization. Maddie was also rated as having low levels of communication.

Table 3

Participant SSIS Parent and Case Manager Ratings at Baseline

Student	Social Skills Scale			Problem Behaviors Scale			Autism Subscale	
	SS	Percentile	Level	SS	Percentile	Level	Raw	Level
	Parent							
Isaiah	--	--	--	--	--		--	--
Maddie	68	3	Well- below Average	125	93	Above Average	20	Above Average
Ryder	79	10	Below Average	107	75	Average	21	Above Average
Aiden	75	8	Below Average	109	78	Average	21	Above Average
	Case Manager							
Isaiah	83	13	Below Average	124	92	Above Average	20	Above Average
Maddie	88	25	Average	128	93	Above Average	18	Above Average
Ryder	69	3	Well- below Average	128	94	Above Average	24	Above Average
Aiden	76	8	Below Average	122	88	Above Average	23	Above Average

Note. Isaiah's parents did not return the pre-intervention packet, which included the SSIS.

Participant three, Ryder, was a 17-year-old male student in twelfth grade. Ryder attended School A, located in a suburban district. His CARS2 score, 50, indicated severe symptoms of ASD. Ryder had a primary educational diagnosis of autism and a secondary speech and language impairment diagnosis. Ryder spent 50% of his day in general education classes, supported through paraprofessionals and special education teachers. Ryder participated in the state's alternate assessment. He was a verbal communicator but did not speak often in classes or among his peers. Ryder's parent and case manager rated him on the SSIS as having more characteristics of autism than the general population. On the SSIS, Ryder was rated as having social skills well-below average by his case manager and below average by his parent. He was also rated as having above average problem behaviors by his case manager and average problem behaviors by his

parent. On the Vineland, Ryder's case manager rated Ryder's adaptive behavior composite as low, with both his communication and socialization scales at low levels.

Table 4

Participant Vineland-II Case Manager Ratings at Baseline

Student	Communication			Socialization			Adaptive Behavior Comp.		
	SS	Percentile	Level	SS	Percentile	Level	SS	Percentile	Level
Isaiah	82	12	Mod Low	77	6	Mod Low	79	8	Mod Low
Maddie	70	2	Low	78	7	Mod Low	71	3	Mod Low
Ryder	60	<1	Low	59	<1	Low	63	1	Low
Aiden	67	1	Low	68	2	Low	67	1	Low

Finally, participant four, Aiden, was a 17-year-old male student in twelfth grade. Aiden also attended School One. Aiden had a primary educational diagnosis of autism and a secondary speech and language impairment diagnosis. Aiden's CARS2 score of 52 indicated severe symptoms of ASD. He spent 50% of his day in general education classes, supported by paraprofessionals and special education teachers. Aiden participated in the state's alternate assessment. He was a verbal communicator but it was reported that he did not speak often in classes or among his peers. Aiden's parent and case manager rated him on the SSIS as having more characteristics of autism than the general population. On the SSIS, Aiden was rated as having social skills below average by both his case manager and parent. His case manager rated his level of problem behaviors as above average while his parent rated his problem behaviors in the average level. Ryder's adaptive behavior composite on the Vineland was at the low level, as was his functioning on the communication and socialization scales.

Table 5

Participants' CARS2 Profiles

Participant	T-score	Percentile	
		Ranking	Severity Group
Isaiah	49	46	Severe Symptoms of Autism Spectrum Disorder
Maddie	49	46	Severe Symptoms of Autism Spectrum Disorder
Ryder	50	50	Severe Symptoms of Autism Spectrum Disorder
Aiden	52	58	Severe Symptoms of Autism Spectrum Disorder

Case Managers and Facilitators. Each of the four students' case managers agreed to participate in the study and complete a packet of information before and after the intervention occurred. Ryder and Aiden had the same case manager. Ryder's, Aiden's, and Maddie's case managers also agreed to serve as the peer network plus facilitators. Isaiah's facilitator was a general education teacher who was recommended by the special education director and Isaiah's case manager. Isaiah's case manager and facilitator worked together during the course of the semester relative to planning and implementing the peer network plus intervention. For instance, the case manager, facilitator, and primary investigator collaborated to make intervention decisions and to incorporate the social skills training portion of the peer network plus intervention. Table 6 lists demographic information about the case managers and facilitators.

Table 6

Case Manager and Facilitator Demographics

Participant	Case Manager or Facilitator	Role within School	Years as Educator	Years in School	Gender	Ethnicity	Highest Degree
Isaiah	Case Manager	Special Education Teacher	13	10	Female	Caucasian	Master's
Isaiah	Facilitator	General Education Teacher	13	13	Female	Caucasian	Master's
Maddie	Both	Special Education Teacher	4	4	Female	Caucasian	Bachelor's
Ryder & Aiden	Both	Special Education Teacher	29	24	Female	Caucasian	Bachelor's

Peer Network Members without Disabilities. Facilitators invited peers without disabilities to be peer network members for the students with autism. Peers under the age of 18 were asked to return a parental consent form before participating (see Appendix G). All participating peers without disabilities also signed an assent form for participation (see Appendix H). Demographic information about the peers without disabilities involved in this study can be found in Tables 7 and 8. Isaiah had the most peer network members, with seven students without disabilities serving in this role. Isaiah's network had a large number of peers, in part, because the network facilitator was well-connected with typically developing students. As a general education teacher, she had many students she wanted to invite for the network. Isaiah was also extremely social and shared with his case manager that he wanted to make more friends. One of Isaiah's peer network members was male and African American while the other six were Caucasian females. All were upperclassman, with three being in the eleventh grade and four being in twelfth grade. Each of Isaiah's peer network members reported being involved in

community activities outside of school and 5 out of 7 reported being involved in other school activities. Maddie had three peers in her peer network. They were all Caucasian females. Two of the peers were in the twelfth grade and one was in eleventh grade. Each of Maddie’s peers reported being involved in both school and community activities. Ryder also had three peers in his peer network plus intervention. They were all Caucasian, senior females who were involved in both school and community activities. Finally, Aiden’s network consisted of three females in eleventh grade. All three girls were Caucasian and reported being involved in school and community activities.

Table 7

Summary of Peer Characteristics at Baseline

Participant	<i>n</i>	Mean # of School Activities	Mean # of Community Activities in Past Year	% in 11 th Grade	% in 12 th Grade	% Female	% Caucasian	% African American
Isaiah	7	2.3	11.9	42.9%	57.1%	85.7%	85.7%	14.3%
Maddie	3	3.7	12.7	33.3%	66.7%	100.0%	100.0%	0.0%
Ryder	3	2.0	9.7	0.0%	100.0%	100.0%	100.0%	0.0%
Aiden	3	4.7	12.3	100.0%	0.0%	100.0%	100.0%	0.0%
Overall	16	2.9	11.7	43.7%	56.3%	93.8%	93.8%	6.2%

Table 8

Individual Peer Characteristics at Baseline

Peer Network Member	Why Involved?	# of School Activities	# of Community Activities in Past Year	Grade	Gender	Ethnicity
		Isaiah				
PN1	Because I really want to be a special education teacher.	3	14	11	F	Caucasian
PN2	I feel like it would be beneficial to Isaiah and myself. To learn how to communicate and interact better with students with disabilities.	2	14	12	M	African American
PN3	I'm really interested in psychology and really like helping people.	3	10	12	F	Caucasian
PN4	It sounded fun and I would like to be able to talk to all people.	3	12	11	F	Caucasian
PN5	Because I'm really interested in helping kids with disabilities	0	13	11	F	Caucasian
PN6	I have known Isaiah for a while and this sounded like a fun group.	5	7	12	F	Caucasian
PN7	To try something new	0	13	12	F	Caucasian
		Maddie				
PN1	I like being able to be involved in different activities with all of these students.	4	13	12	F	Caucasian
PN2	I chose to be a part of this project because I've done it before and it was really fun and I enjoy getting to know the special education students.	4	13	12	F	Caucasian

PN3	To get to know Maddie more and help her be more comfortable with other people outside the class room!	3	12	11	F	Caucasian
		Ryder				
PN1	I'm interested in psychology and thought it sounded interesting!	2	9	12	F	Caucasian
PN2	I chose to be part of this project because I felt like this would be a good experience.	2	9	12	F	Caucasian
PN3	I wanted to be part of this project to create better and stronger relations with the students I work with and it's a great opportunity.	2	11	12	F	Caucasian
		Aiden				
PN1	I have been a part of Club Unify for almost 3 years now	4	14	11	F	Caucasian
PN2	I chose to participate because I think it will be a great....	4	11	11	F	Caucasian
PN3	I like getting to know people and I don't know Aiden all that well. It's a great opportunity!	6	12	11	F	Caucasian

Setting

The peer network plus interventions occurred in the three participating high schools, all located in suburban areas, and all during the participants' lunch periods. Table 9 includes demographic information about each high school. Isaiah's peer network plus meetings occurred in an empty general education classroom during his lunch period. His lunch period was 60 minutes but, with getting food and getting settled, his meetings generally lasted between 40 and 50 minutes. Maddie's peer network plus meetings occurred in her case manager's office and were also held during the lunch period, which was 30 minutes. Ryder's and Aiden's peer

network plus meetings were held in an empty activity room in the high school also during their lunch hours. However, both Ryder’s and Aiden’s networks often participated in activities out of the room (e.g., playing games in the hallway, taking a walk outside, creating chalk drawings on the sidewalks outside of the high school). Ryder’s peer network typically met for approximately 40 minutes. Aiden’s peer network typically met for 30 minutes, though there were times it met longer. For all participants, facilitator training occurred in the same setting as the peer network meetings were held.

Table 9

School Information

School	Participants	Location	Enrollment	% with Disability	% Caucasian	% Economically Disadvantaged
A	Ryder & Aiden	Suburban	500-999	11-15%	91-95%	11-15%
B	Maddie	Suburban	500-999	6-10%	86-90%	16-20%
C	Isaiah	Suburban	1,000-1,499	11-15%	86-90%	11-15%

Note. Percentages refer to the proportion of enrolled students in given categories.

Measures

A number of measures were utilized to gain information about the participants in this study and intervention effectiveness before, during, and after the peer network plus intervention. These measures are listed by timing in Figure 2 below. After the figure, each measure is described in depth.

Pre-Intervention (Wave One)		
Parents <ul style="list-style-type: none"> • Parent Packet- Wave One • SSIS Parent Rating Form • ASSP 	Case Managers <ul style="list-style-type: none"> • Case Manager Packet- Wave One • SSIS Teacher Rating Form • ASSP • Vineland-II Teacher Rating Form 	Peer Network Members <ul style="list-style-type: none"> • Peer Partner Questionnaire- Wave One

During Intervention				
Direct Observations at Each Peer Network Meeting				
<ul style="list-style-type: none"> • Observations of social interactions (initiations and responses) in each 10-minute period • Ratings of three targeted social skills in each 10-minute period • Peer Network Plus Meeting Intervention Checklist • CARS 				
Post-Intervention (Wave Two)				
Parents	Case Managers	Peer Network Members	Facilitators	Student with ASD
<ul style="list-style-type: none"> • Parent Packet- Wave Two • SSIS Parent Rating Form • ASSP 	<ul style="list-style-type: none"> • Case Manager Packet- Wave Two • SSIS Teacher Rating Form • ASSP • Vineland-II Teacher Rating Form • Case Manager Social Validity Form 	<ul style="list-style-type: none"> • Peer Partner Questionnaire - Wave Two • Peer Partner Social Validity Form 	<ul style="list-style-type: none"> • Facilitator Social Validity Form 	<ul style="list-style-type: none"> • Student Social Validity Form

Figure 2. Measures used at study time points.

Autism Social Skills Profile. The Autism Social Skills Profile (ASSP; Bellini & Hopf, 2007) was given to parents and case managers before and after the intervention. A blank ASSP is included in Appendix I. The ASSP was used for two purposes. The first purpose was to identify social skills to target during the intervention. For everyone except Isaiah, items that both parents and case managers rated as “Never” or “Sometimes” were considered for intervention targets. Isaiah’s parents did not return the ASSP before the intervention so only the case manager’s input was used to select intervention targets. The complete procedure for selecting target skills is described in a subsequent section. The second purpose for using the ASSP was as an additional measure to compare the students’ social skills before the intervention and after the intervention. Items on the ASSP were used to attain a total score as well as scores on three subscales: social reciprocity, social participation, and detrimental social behaviors (Bellini & Hopf, 2007).

As mentioned previously, the ASSP seems to have strong psychometric properties. In a sample of 254 students, internal reliability was found to be high ($\alpha = 0.926$) for the whole sample as well as for the 176 students in the high-functioning group ($\alpha = 0.940$; Bellini & Hopf, 2007). When the ASSP was given to participants twice within a three-week time period, test-retest reliability was 0.904 for the total sample, 0.902 for the high-functioning group, and 0.878 for the intellectual disability or severe language deficits group (Bellini & Hopf, 2007).

Social Skills Improvement System. Two Social Skills Improvement System (SSIS) forms were used during both waves of the study. Parents of the participants were sent the SSIS Parent Rating Form before the intervention began (wave one) and at the end of the semester (wave two). The participants' case managers were also asked to complete the SSIS Teacher Form at both wave one and two as well. The main use of the SSIS system for this study was to monitor progress in the social skills scale and the autism subscale. However, changes in the area of problem behaviors were also examined.

As mentioned previously, the psychometric properties for the SSIS are strong (Gresham & Elliot, 2008; Haggerty et al., 2011). A study involving 543 students was used to examine test-retest reliability (Gresham & Elliot, 2008). The intraclass test-retest coefficients for the elementary and secondary levels were mostly in the upper 0.60s to low 0.70s, which can be described as substantial (Gresham & Elliot, 2008). Coefficients were lower for the preschool level, which led to an overall moderate-to-strong level of test-retest reliability (Gresham & Elliot, 2008). Inter-rater reliability was examined with a sample of 434 students (Gresham & Elliot, 2008). The intraclass reliability coefficients for skill areas ranged from 0.37 (for prosocial behavior at the secondary level) to 0.73 (early reading skills at the preschool level; Gresham & Elliot, 2008). In general, all coefficients were moderate to substantial with the exception of the

0.37 for prosocial behavior at the secondary level (Gresham & Elliot, 2008). In addition, the SSIS has strong validity, correlating well with other similar scales (Haggerty et al., 2011).

Vineland Adaptive Behavior Scales, Second Edition. The Vineland-II Teacher Rating Form was completed by the participants' case managers before (wave one) and after (wave two) the intervention. Similar to the SSIS, the Vineland-II was used primarily to measure change in social and adaptive areas between pre and post intervention.

Psychometric properties are strong for the Vineland-II Teacher Rating Form. Internal consistency reliabilities were found to be high at each age, with 83 percent of the subdomain reliabilities at 0.85 or higher and only 6 percent below 0.80 (Sparrow et al., 2006). In the Daily Living Skills domain, reliabilities were higher for adolescents than for children with the opposite trends being seen in the Written Subdomain (Sparrow et al., 2006). On the other domains, reliabilities were consistent across age (Sparrow et al., 2006). Of importance to this study, the Socialization subdomains had the greatest reliabilities, with 93 percent of the subdomains having coefficients of 0.90 or greater (Sparrow et al., 2006). Domain reliability coefficients for Communication, Daily Living Skills, and Socialization were very high, averaging in the mid-to-high 0.90s (Sparrow et al., 2006). The mean reliability coefficient for the Adaptive Behavior Composite was 0.98 for ages 12 to 18 (Sparrow et al., 2006).

To measure test-retest reliability, 135 students falling in three age groups were rated twice by the same teacher (Sparrow et al., 2006). For the retest sample as a whole, domain reliabilities were in the mid 0.80s (Sparrow et al., 2006). These coefficients were even higher for the older group (aged 14-19) with the Communication Domain having a coefficient alpha of 0.86, the Daily Living Skills Domain having a coefficient of 0.97, the Socialization Domain having a coefficient of 0.92, and the Adaptive Behavior Composite having a test-retest

coefficient of 0.95 (Sparrow et al., 2006). There were more modest inter-rater reliabilities found (ranging from the mid 0.40s to high 0.60s; Sparrow et al., 2006). The Vineland-II Teacher Rating Form also has evidence suggesting that it is a valid tool for the assessment of adaptive behaviors (Sparrow et al., 2006).

Childhood Autism Rating Scale, Second Edition. The Childhood Autism Rating Scale, Second Edition (CARS2) was completed by the primary researcher based on observations during the peer network meetings as well as consultation with students' case managers. This measure was used to provide a consistent descriptive measure for each participant relative to their identified ASD

As mentioned previously, the CARS2 has strong psychometric properties. Norms on the second edition of the CARS were developed with a sample of 1,034 children with autism spectrum disorders (Schopler et al., 2010). Reliability and validity appear to be strong for the CARS2 standard form. In a population of 3,600 individuals, inter-rater reliability for the CARS2 standard form was 0.71 and the internal consistency reliability was found to be 0.93 (Schopler et al., 2010). The CARS2 system is considered to have strong validity and be very predictive of an autism diagnosis (Schopler et al., 2010). Independent research on the reliability and validity of the CARS2 system has found similar positive results (Breidbord & Croudace, 2013).

Case manager packets. Case managers of participating students received a case manager packet before the intervention began (wave one; see Appendix J) and at the end of the semester (wave two; see Appendix K). These measures were adapted from the case manager packets used by Carter and Asmus (2009). The first section in the pre-intervention packet asked for general information about the student including a) special education categories, b) eligibility for free/reduced price lunch and/or extended school year services, c) the percentage of time the

student spent in general education classrooms, and d) the extent to which the student participated in state standardized tests. The first section also asked the case manager to select three top educational goals for the student.

The second section asked about the student's relationships with peers and was identical to a portion of Carter and Asmus's (2009) teacher packet, which was modified from the *School-based Social Network Form* (SSNF; Kennedy & Itkonen, 1994). On this modified SSNF, case managers were asked to list all peers with whom the student had had social contact (defined as an interaction of at least fifteen minutes) within the last two weeks. For each social contact listed, case managers were asked to select how long the student had known the peer (i.e., less than a month, more than a month, or unsure), whether or not the student would consider the peer a friend, how important the peer was to the student (i.e., not very important, somewhat important, or very important), and whether or not the peer had a significant disability. In a separate table, case managers were asked to list any other peers at school who the student considered to be a friend but who did not have social contact with the student in the previous two weeks. For these peers, case managers were asked to mark the length of the friendship, how important the friendship was to the student, and whether the student had a significant disability.

The wave two case manager packets, given at the end of the semester, contained similar sections. The first section asked the case manager to rate how much progress she felt the student made on the three goals she chose at the beginning of the semester. The options for each goal were *some regression*, *no progress*, *a little progress*, and *a lot of progress*. The second section was identical to the wave one packet and asked about the student's social contacts during the previous two weeks and friendships. To aid memory, case managers were provided with a list of the peers that they had included as social contacts and friendships at wave one.

Parent packets. At both wave one (see Appendix L) and wave two (see Appendix M), parents received an assessment packet either in the mail or handed to them from their child's case manager. The parent packets were very similar to the case manager packets and were also adapted from Carter and Asmus (2009). The first section of the wave one packet, given before the intervention began, asked parents to report information about their child's a) siblings, b) eligibility for free or reduced lunch, c) ethnicity, d) media usage, and e) abilities. The first section also asked parents to select three top educational goals for their child and to rate how much they felt their child enjoyed going to school, had friends at school, shared information with them about school, and how much they'd like their child to have more interactions with peers at school. Parents were also asked to share information about their child's interests, skills, and preferences to aid in intervention planning. The second section is identical to the second section on the case manager packet, except that it asks parents to focus on social contacts and friendships outside of school rather than in school. Just like on the case manager packet, parents were asked to list peers with whom their child had social contacts within the last two weeks and to list other peers who their child would consider friends.

At the end of the semester, parents received wave two packets. The first section of this packet asked parents to rate the progress they saw on the goals they selected for their child on the wave one packet. Options included *some regression*, *no progress*, *a little progress*, or *a lot of progress*. This section also includes the four questions regarding the child's abilities that were included on the wave one packet. Parents were asked to rate the extent to which they now agreed with the four statements that were on the wave one packet: how much they felt their child enjoyed going to school, had friends at school, shared information with them about school, and how much they'd like their child to have more interactions with peers at school. In addition, they

were asked to rate the statement, “My child made new friends at school this semester.” The second section of the wave two packets was identical to the wave one packet and asked about the child’s social contacts and friendships.

Peer questionnaires. Peer network members received a short questionnaire at both wave one (see Appendix N) and at wave two (see Appendix O). These questionnaires were adapted from Carter and Asmus (2009) and asked peers to a) answer demographic questions, b) list why they chose to participate in the project, c) select the school activities they were involved in within the school year, d) describe previous experiences as a peer partner, and e) select community activities they had been involved in within the past year.

Social skills ratings during observations. A series of 10 minute observations were conducted during participants’ peer network meetings. Session lengths of 10 minutes were chosen because this time period was long enough time to get an accurate representation of participants’ social behaviors and to provide frequent opportunities for social expression during peer network meetings. It is also a common observation length for direct observation sessions (Tiger, Miller, Mevers, Mintz, Scheithauer, & Alvarez, 2013). In addition, 10 minute periods of time allowed the researcher to gain sufficient data points over the course of one semester with the meetings occurring one time per week. Weekly meetings were the most feasible for school staff and students involved in the project. Breaking meetings into multiple data collection periods is a common practice in the social skills training literature (e.g., Mason et al., 2012; Ogilvie & Dieker, 2010). At times, it was not possible to get a full 10 minute observation (e.g., if lunch was over or the student needed to leave early). In these cases, an observation was still counted as long as the observation occurred for at least 6 minutes. Overall, this occurred for 13 observations (one of Isaiah’s intervention observations, four of Maddie’s baseline and five of her intervention

observations, and two of Aiden's baseline and one of his intervention observations). Since two of the four participants had meeting times of 30 minutes, in order to be consistent as well as best facilitate the multiple baseline design, three data points were graphed for each peer network meeting. Isaiah, Ryder, and Aiden sometimes had meetings that had four observation periods rather than three due to longer lunch periods or extended activities. In these cases, the first and last observations of the meeting were always selected. The third data point was selected by putting the two options (e.g., observation two and observation three) in a random number generator (random.org). The number that was selected at random was the data point graphed. This selection was done for seven of Isaiah's meetings, none of Maddie's meetings, nine of Ryder's meetings, and four of Aiden's meetings.

The primary outcome measure for this study was social skills ratings. Observers rated participants' targeted social skills during every 10 minute period. Each participant had his or her own skill sheet that contained three targeted social skills. Isaiah's skill sheet is found in Appendix P, Maddie's skill sheet is in Appendix Q, Aiden's skill sheet is in Appendix R, and Ryder's skill sheet is in Appendix S. Individual participants' skills, as well as the process for selecting targeted skills, will be described in more detail in a subsequent section. As is consistent with previous studies on social skills interventions (e.g., Mason et al., 2012; Ogilvie & Dieker, 2010), this study used a rating scale for the identified target skills rather than direct measurement of frequency of skill demonstration. This allowed for examination of multiple skills with various ranges side by side. It also allowed for measurement of the quality of social skills observed rather than solely the frequency of certain behaviors. Each targeted skill was operationally defined and measured utilizing a nine-point Likert scale, based on the 9-point Likert scales for measuring social skills used by Mason and colleagues (2012). A score of 1 referred to the

absence of the skill in the 10 minute period and a score of 9 referred to the participant demonstrating all aspects of the skill during all opportunities throughout the interval. As is consistent with Mason et al. (2012), odd number scores were given clear behavioral definitions; even number scores were selected when behaviors fell between the two definitions. The goal of using a 9-point Likert scale rather than a 5-point Likert scale or smaller as used in some other studies (e.g., Ogilvie & Dieker, 2010) was to have a measure that was sensitive to change and allowed for more precise representation of displayed skills. Likert scales for targeted skills were created based on the models provided in the Mason et al. (2012) article and through collaboration with an expert in behavioral observation. A new skill sheet was completed for each 10 minute period.

Social interactions, proximity, and engagement during peer networks. Direct observations of social interactions occurring during the peer network meetings were collected for each 10 minute session. Observers were trained on the *Peer Network Plus Observational Coding Manual*, which is found in Appendix T. During each observation session, observers recorded live frequency data on initiations and responses to and from the student with autism and peer network members. In addition, duration data on proximity to peer network members and adult support personnel was recorded. Engagement within the network meeting was also recorded. Initiations were defined as any initial or new interactive behavior demonstrated by the focus student to specific peer network member(s), or by a specific peer network member toward the focus student with clear communication intent to evoke a response. Initiations could occur with or without prompts from adults. A new initiation was coded if 5 seconds elapsed between two interactive behaviors or the focus student joined an ongoing conversation. A response was defined as any speech, vocalization, gesture, or augmentative behavior demonstrated by the focus student or any

peer network member(s) without significant disabilities that overtly followed and added to an initiation or response from peers or the focus student. Examples and non-examples of initiations and responses, as well as specific rules for various situations (e.g., when an adult is part of the conversation, when multiple people are talking simultaneously) are listed in the coding manual (Appendix T). For observations that were less than 10 minutes, frequencies of interactions were scaled to fit the 10 minute period. For example, if a student had 5 social initiations in 8.33 minutes (500 seconds), this was scaled to 6 social initiations in the full 10 minute (600 seconds) period of time. This allowed for consistent comparison across sessions. This scaling was done for the 13 observations listed previously that were shorter than 10 minutes.

Two proximity measures were recorded: proximity to peer network members and proximity to adults. If one or more peer network members was within 3 feet of the student with autism and was in a position that allowed him or her to interact with the focus student easily (e.g., facing toward each other or sitting next to one another and facing the same direction), proximity to peer network members was coded. Proximity to peer network members was not coded if the focus student or the peer network member would have had to drastically reposition themselves in order to interact with one another. Proximity to adults was coded if any adult (e.g., the peer network facilitator, paraprofessional, special educator, speech and language pathologist) was within 3 feet of the student with a disability and was positioned in such a way that allowed him or her to easily interact with or provide instructions to the focus student.

Engagement was coded only for the focus student with autism. If the focus student was actively engaged in and attending to the peer network member, he or she was coded as being engaged. Engagement was defined as looking at peers or the adult facilitator, looking at materials for the group activity, and/or initiating or responding to peers or adult facilitators. A participant

was considered not engaged if he or she was not attending to the network meeting, which was defined as not looking at the peers or adult facilitator, not looking at materials for the group activity, and not initiating or responding to peers. Additional examples and non-examples are provided in Appendix T.

These frequency and duration measures were recorded on Dell Inspiron Duo tablet computers using Lily Data Collector software (Tapp, 2012). This program had been used previously by Carter & Asmus (2009) to collect live observational data. Appendix U contains a screen shot of the Lily Collector on the Dell Inspiron Duo. Only buttons with a PN+ tag next to them were used in this study (e.g., SWD Initiations- social, SWD Response- social, Peer Initiations- social, Peer Response- social, Engaged consistent activities, Not Engaged, Prox peers w/o disabilities, Prox direct support). For frequency counts (initiations and responses), observers hit the corresponding button once each time a behavior occurred. Engagement was on a toggle code; observers either had the student as engaged or not engaged at any given moment. Observers could select and de-select the proximity buttons whenever there was a proximity change. The Lily Data Collector was set to automatically end observations after 10 minutes. A new file was opened for each separate observation. The Lily files were analyzed using the Multiple Option Observation System for Experimental Studies software (MOOSES, Tapp, Wehby, & Ellis, 1995). This provided frequency counts of the initiation and response variables as well as duration measures for engagement and proximity variables.

The same data periods were used for the social interaction, proximity, and engagement data as for the social skills data. In other words, if four 10 minute periods occurred during one peer network meeting, the first and last observation session and a third randomly selected time period (between the second and third 10 minutes) were graphed. The same periods were graphed

for both sets of data (i.e., if the second 10 minutes was randomly chosen, it was chosen for both sets of data).

Observer Training

In addition to the primary investigator, three graduate students in special education or school psychology with significant behavioral observation experience served as observers for this study. Before being able to observe for this project, observers were required to prove reliability both on the social interaction behaviors using the Dell tablets and the social skills rating forms. Observers passed an observational codes quiz with 100% accuracy. They practiced coding with the primary researcher using videos and had to reach a 90% accurate criterion on two videos. Observers then had to reach 80% agreement live with a trained observer in a classroom setting. For the social skills component, each observer watched a 10 minute video clip of Isaiah's first peer network meeting. Each observer was asked to score the video using the skill sheets of the participant(s) he or she would be observing. For instance, one of the observers observed Maddie and Isaiah. He was required to become reliable on Maddie's and Isaiah's skill sheets. The observer was considered in agreement with the primary investigator if the score was within 1-point on the Likert scale. Thus, if the primary investigator had a score of 5 and the observer had a score of 4, 5, or 6, this was considered reliable. This is consistent with the training criteria of Mason et al (2012). Training and discussion was ongoing throughout the project. Whenever two observers disagreed on codes, these discrepancies were discussed after coding to clarify definitions.

Research Design

This study utilized a multiple baseline across participants design (Cooper, Heron & Heward, 2007; Kazdin, 2011) to examine the impacts of the peer network plus intervention. In a

multiple baseline design, effects are demonstrated by introducing the intervention to different behaviors, people, or settings at different times (Kazdin, 2011). If changes in the data occur for each behavior, person, or place when the intervention is implemented but do not occur when the intervention is not implemented for that behavior, person, or place, the researcher can claim experimental control (Kazdin, 2011). One advantage of multiple baseline designs is that they do not require treatment to be withdrawn once it is implemented (Kazdin, 2011).

In 2010, What Works Clearinghouse (WWC) published design standards for single-case research (Kratochwill et al., 2013). The first design standard requires researchers to systematically manipulate the independent variable or intervention with the researcher determining when and how the independent variable is presented (Kratochwill et al., 2013). In this study, this systematic manipulation occurred through the staggered introduction of the social skills component to the peer network intervention. The second design standard requires each outcome variable to be measured systematically over a period of time and for this data to be collected by multiple observers (Kratochwill et al., 2013). This design standard includes the criterion that inter-observer agreement be assessed on at least twenty percent of data points in each condition and that this inter-observer agreement meets minimal thresholds (Kratochwill et al., 2013). As has already been elucidated, outcome variables were measured systematically and by multiple observers. Inter-observer agreement will be discussed in an ensuing section, but it was conducted on more than twenty percent of observations. The third design standard requires a study to include at least three attempts to demonstrate an intervention effect, each at a different point in time or with three different phase repetitions (Kratochwill et al., 2013). In a multiple baseline across participants design, this standard is achieved by studying at least three participants with different baseline lengths. In this study, four participants were studied and each

had a unique baseline length. The fourth design standard places restrictions on when phases can be considered an attempt to demonstrate an effect. In order for a phase to qualify as an attempt to demonstrate an effect at the most basic level, the phase must have at least three data points (Kratochwill et al., 2013). Having three data points per phase would allow the study to *Meet Standards with Reservations*. To *Meet Standards*, a multiple baseline design must have a minimum of five data points in at least six phases (Kratochwill et al., 2013). This study meets this standard as there are at least nine data points in each of eight phases.

In this study, researchers determined when to introduce the social skills component of the intervention for each participant based on visual analysis of the baseline data. According to Kazdin (2011), there is no fixed answer as to when to manipulate the independent variable (i.e., after how many data points). Instead, one should wait for the data to be stable with little or no trend in the baseline data path (Kazdin, 2011). Moving to the next phase when stability is evident is a common practice (e.g., Mason et al., 2012). Stability of baseline data was analyzed by the primary researcher and an expert in single case design. Isaiah's peer network only baseline data reached stability first, so he was the first participant to receive the social skills component of the peer network plus intervention. The social skills component was added to Maddie's, Aiden's, and Ryder's peer networks in a staggered fashion as their baselines became stable. This study's design is outlined in Figure 3.

Isaiah	Baseline (peer network only)	Peer Network Plus Intervention (peer network and social skills component)
Maddie	Baseline (peer network only)	Peer Network Plus Intervention (peer network and social skills component)
Ryder	Baseline (peer network only)	Peer Network Plus Intervention (peer network and social skills component)
Aiden	Baseline (peer network only)	Peer Network Plus Intervention (peer network and social skills component)

Figure 3. Multiple baseline across participants design.

Selection of Target Skills

As is consistent with other studies (Ogilvie, 2011; Ogilvie & Dieker, 2010), the Autism Social Skills Profile was used to determine skills to be targeted during the intervention. The primary researcher and an independent expert both identified skills on the ASSP that could feasibly be targeted in the peer network plus intervention. The two coders agreed on 85.7% of the items. When the two coders disagreed, they conversed and came to a conclusion regarding whether or not the skill was an appropriate target for the peer network plus intervention. In the end, the coders identified 30 of the 49 skills as potential social skill targets for this study. This pool of potential target skills is listed in Figure 4.

Potential Target Skills

1. Invites peers to join him/her in activities
2. Joins in activities with peers
3. Takes turns during games and activities
4. Interacts with peers during unstructured activities
5. Interacts with peers during structured activities
6. Asks questions to request information about a person
7. Asks questions to request information about a person
8. Interacts with groups of peers
9. Maintains the “give-and-take” of conversations
10. Talks about or acknowledges the interests of others
11. Requests assistance from others
12. Maintains eye contact during conversations
13. Maintains an appropriate distance when interacting with peers
14. Speaks with an appropriate volume in conversations
15. Offers assistance to others
16. Responds to the greetings of others
17. Joins a conversation with two or more people without interrupting
18. Initiates greetings with others
19. Provides compliments to others
20. Acknowledges the compliments directed at him/her by others
21. Allows peers to join him/her in activities
22. Responds to the invitations of peers to join them in activities
23. Allows others to assist him/her with tasks
24. Responds to questions directed at him/her by others
25. Responds slowly in conversations (reverse-scored)
26. Changes the topic of conversation to fit self-interests (reverse-scored)
27. Makes inappropriate comments (reverse-scored)
28. Engages in solitary interests and hobbies (reverse-scored)
29. Ends conversations abruptly (reverse-scored)
30. Exhibits fear or anxiety regarding social interactions (reverse-scored)

Figure 4. Pool of potential target skills.

With the exception of Isaiah, parents and case managers both filled out the ASSP independently prior to the beginning of the study. Items from the pool of 30 potential skill targets that both raters marked as “Never” or “Sometimes” (or “Often” or “Always” for reverse-scored items) were identified as possible targets for the peer network plus intervention. Since Isaiah’s parents did not return the ASSP at wave one, only his case manager’s ASSP was used to determine potential skills. Once a list of potential skill targets was identified for each participant,

the primary researcher consulted with the participants' case managers to choose the three most important skills to target during the intervention. Operational definitions and Likert scales for each skill were also created for each participant. The targeted skills selected for each participant are listed in Table 10 below. In some cases, the skill labels were changed to more accurately fit with the individual's skill deficits. For example, for Isaiah, *talks about or acknowledges the interests of others* was changed to *talks about topics, including others' interests, other than the student's special interest, and maintains the neutral topic* to more fully encompass his skill needs. For Maddie, both her parent and case manager marked *exhibits fear or anxiety regarding social interactions* as a major concern. However, the team chose to select target skills that could be more accurately measured and monitor how this would impact her anxiety through skills training and exposure. In addition to the three skills selected (responding to the invitation of peers, inviting peers to join activities and conversation, and asking questions to elicit information from peers), Maddie also filled out a self-report subjective units of distress anxiety meter before and after each network meeting (see Appendix V). At the beginning of the study, Maddie's case manager walked her through the anxiety meter, explaining that a 10 would be the most anxious she had ever felt and a 1 would mean that she was not anxious at all. Maddie and her case manager talked about the anxiety meter and put examples of activities and events at each number to ensure that Maddie understood the concept. After being taught how to use the anxiety meter, Maddie independently colored the anxiety meters each week both before and after the network meeting, starting at baseline. This data was used as a subjective measure of Maddie's level of anxiety as the study continued. The research team did not conceptualize this anxiety meter as an intervention component but rather as an ancillary measure of Maddie's subjective level of

anxiety and as a way to monitor that the peer network intervention was not adversely impacting her.

Table 10

Participants' Target Skills and Operational Definitions

Participant	Skill	Operational Definition
Isaiah	Maintains the “give-and-take” of conversations	<p>a) There is an appropriate balance between conversational partners. The student has approximately the same number of initiations and responses as the peer(s) to whom he or she is interacting. In addition, the student spends approximately the same amount of time speaking as do his or her peers. There is also an appropriate balance between “role” in the conversation. The student sometimes initiates and sometimes responds and asks as well as answers questions.</p> <p>b) There is an appropriate flow or uninterrupted continuity to the conversation. The student uses comments and questions to keep the conversation going and responds to the comments and questions of others within 3 seconds. On average, each interaction (an initiation with responses back and forth without a five-second pause between interactive behaviors) has more than five interactions back and forth on the same topic.</p>
	Joins a conversation with two or more people without interrupting	<p>When others are talking, the student waits (by staying quiet while looking toward those talking) for an appropriate time to join the conversation (e.g., a break in the conversation, a brief pause, after someone finishes saying something) and joins the conversation using appropriate language and pragmatics (e.g., “Oh... are you talking about...”, an on topic question or comment). Appropriate pragmatics occur when topic matches, volume and tone matches, comment/question matches what was spoken prior, and appropriate openers and transition phrases are used as appropriate.” Nonexamples: speaking over the peers, yelling from across the room</p>

<p>Talks about topics, including others' interests, other than the student's special interest, and maintains the neutral topic</p>	<p>The student allows conversation to turn to others' interests or neutral topics as evidenced by:</p> <ol style="list-style-type: none"> a. Initiating questions and/or making positive statements about the topic without attempting to steer conversation back to a personal special interest. b. Responding to others' questions and comments that involve topics other than their special interest, with follow up questions or comment, without steering the conversation back to their special interest.
<p>Maddie Responds to the invitations of peers to join them in activities/ conversation (responses)</p>	<p>When peers invite the student to join them in an activity (e.g., using words or gestures) or in a conversation (e.g., by asking a question, verbally inviting the student, mentioning the student during their conversation), the student joins in the activity or conversation within 3 seconds (e.g., by moving toward the activity/group or changing positions, taking turns in the game, by responding to the question or comment with a clear verbal or nonverbal communicative act, by adding a related question or a comment).</p>
<p>Invites peers to join her in activities/ conversations (initiations)</p>	<p>The student appropriately initiates an invitation to peers to join her in an activity (e.g., using words or gestures) or in a conversation (e.g., by asking a question, verbally inviting the student, mentioning the student during conversation), after 3 seconds without conversation or activity, or through a clear change in topic/activity from the ongoing interaction.</p>
<p>Asks questions to request information from a person (initiations/responses)</p>	<p>The student asks questions to request information from peers. The questions could be regarding interests (e.g., "What's your favorite sport?"), activities ("How do I do this?"), thoughts ("What do you think about this?"), or facts (e.g., "Do you know when George's birthday is?"). This excludes questions used as requests for items (e.g., "Can you give me that?").</p>

Ryder	Maintains the “give-and-take” of conversations	<p>a) There is an appropriate balance between conversational partners. The student has approximately the same number of initiations and responses as the peer(s) to whom he or she is interacting. In addition, the student spends approximately the same amount of time speaking as do his or her peers. There is also an appropriate balance between “role” in the conversation. The student sometimes initiates and sometimes responds and asks as well as answers questions.</p> <p>b) There is an appropriate flow or uninterrupted continuity to the conversation. The student uses comments and questions to keep the conversation going and responds to the comments and questions of others within 3 seconds. On average, each interaction (an initiation with responses back and forth without a five-second pause between interactive behaviors) has more than five interactions back and forth on the same topic.</p>
	Takes turns during games or activities.	<p>The student appropriately takes turns during games and activities, allowing his peer(s) to have equal time participating in the activity. During games, the student takes his turn and waits patiently (e.g., without leaving the area, without asking the peer to hurry up) while the other peer(s) take their turns. The student does not attempt to continuously participate or to take another’s turn. The student remains engaged during others’ turns (e.g., the student may pass materials back and forth and/or let the peer know whose turn it is).</p>
	Provides compliments to others	<p>The student gives at least one but not more than five compliments to a peer in the ten minute period of time. These compliments are appropriate for friends (e.g., clothing, hair, academic or hobby skills) and are not inappropriate for the school setting (e.g., flirting, sexual references). The student uses an appropriate voice volume and tone (e.g., not joking or sarcastic) and level of eye contact when delivering the compliment. Compliment is not out of the blue and/or off topic. Compliments are directed at an attribute of a person (e.g., “You did great on that!,” “I like your shirt,” “Great job!”) and not at an attribute of the day or activity (e.g., “It’s nice out today”, “Good game”).</p>

Aiden	Maintains the “give-and-take” of conversations	<p>a) There is an appropriate balance between conversational partners. The student has approximately the same number of initiations and responses as the peer(s) to whom he or she is interacting. In addition, the student spends approximately the same amount of time speaking as do his or her peers. There is also an appropriate balance between “role” in the conversation. The student sometimes initiates and sometimes responds and asks as well as answers questions.</p> <p>b) There is an appropriate flow or uninterrupted continuity to the conversation. The student uses comments and questions to keep the conversation going and responds to the comments and questions of others within 3 seconds. On average, each interaction (an initiation with responses back and forth without a five-second pause between interactive behaviors) has more than five interactions back and forth on the same topic.</p>
	Takes turns during games or activities.	<p>The student appropriately takes turns during games and activities, allowing his peer(s) to have equal time participating in the activity. During games, the student takes his turn and waits patiently (e.g., without leaving the area, without asking the peer to hurry up) while the other peer(s) take their turns. The student does not attempt to continuously participate or to take another’s turn. The student remains engaged during others’ turns (e.g., the student may pass materials back and forth and/or let the peer know whose turn it is).</p>
	Provides compliments to others	<p>The student gives at least one but not more than five compliments to a peer in the ten minute period of time. These compliments are appropriate for friends (e.g., clothing, hair, academic or hobby skills) and are not inappropriate for the school setting (e.g., flirting, sexual references). The student uses an appropriate voice volume and tone (e.g., not joking or sarcastic) and level of eye contact when delivering the compliment. Compliment is not out of the blue and/or off topic. Compliments are directed at an attribute of a person (e.g., “You did great on that!,” “I like your shirt,” “Great job!”) and not at an attribute of the day or activity (e.g., “It’s nice out today”, “Good game”).</p>

Intervention

This study examined the effectiveness of the peer network plus intervention. This intervention was two-pronged. The baseline condition was a peer network arrangement. A social skills component was added to the network intervention in a staggered fashion. The researcher importance to study interventions that could be easily implemented in schools was a primary focus; therefore, the study used a staff training, consultation model so that school staff members, rather than researchers, were actually implementing the intervention. Paraprofessional training models have been used in other interventions to increase the number and quality of social interactions that students with disabilities have with typically developing peers (e.g., Carter & Asmus, 2009; Causton-Theoharis & Malmgren, 2005; Licciardello, Harchik, & Luiselli, 2008). School staff members who were interested in serving as an interventionist for a peer network plus intervention were trained on the procedures for implementing a peer network and for facilitating the social skills training. This training procedure is detailed in a section below.

Baseline condition: Peer network only. As mentioned, all participants began in the peer network only condition. The peer network portion of the peer network plus intervention was based on the peer network intervention implemented by Carter and colleagues (2013). The goal of these peer networks was to form a social group around the students with autism. Once peers were identified by the network facilitator and consented to participate, an initial meeting was held with the peer network members. The researcher and network facilitator led the initial meeting. At this meeting, the group went over the topics listed on the *Peer Network Plus Initial Meeting Checklist* (see Appendix W). The primary investigator and network facilitator led a discussion on the main goals for the network and general information about the student with autism. They also discussed the logistics of the peer network meetings, including when and

where the meeting would be held. Network facilitators brought the student with autism's schedule to help the peer network members determine times in the day when they could seek out the student with autism to have social interactions. Peers were told that there would be a social skills component added to the network at some point but that they were going to start by just meeting one another and engaging in shared activities. Confidentiality was also addressed. Finally, the peer network members were given an opportunity to ask questions of the network facilitator and primary investigator without the student with autism present. This initial meeting was held one to two weeks before the first peer network meeting.

Each peer network met approximately once per week during a lunch hour. As mentioned previously, this time ranged from 30-50 minutes depending upon the school's and student's schedule. Occasionally, meetings were missed during a week due to holidays, school activities, or student illness. Each network held ten meetings throughout the semester. The content of the network meetings were left largely up to the network facilitator and the students involved. However, main components included engaging in some sort of shared activity and reporting interactions that occurred during the week. Outside of the peer network meetings, students were expected to engage in social interactions with the student with autism. For example, students often found each other in the hallway to say 'hello' during the school day. The facilitator asked the students to report on these interactions during the weekly meetings. The facilitator was coached by the lead investigator in supporting the peer network members and the target student through facilitation, monitoring, and feedback. A *Peer Network Plus Meeting Intervention Checklist* was used to record fidelity of implementation during each meeting (see Appendix X). As mentioned, the networks were free to engage in a wide number of shared activities. Games and conversations were common choices. Table 11 below lists information about each of the

participant's peer networks, including the number of peers present, the number of peer network members with whom the student with autism interacted, and the main activity for each week's meeting.

As can be seen in the table, attendance was occasionally a problem at the network meetings, especially for the participants who only had three peers. For Ryder and Aiden, when peers were not present at the beginning of the meetings, the facilitator paged them a reminder and they attended if they were in school. The only times peers were not present at the meetings for these two was when they were absent from school for some reason (e.g., illness, college visits). Occasionally, some of Maddie's peer network members would forget to come to the meetings. The facilitator would go look for the missing peer network members in the lunch room and bring them to the meetings unless absent. All facilitators provided reminders to peers prior to each meeting and followed up with peers after a missed meeting to collect data on how often the students interacted and to check in regarding the next meeting.

Table 11

Network Meeting Attendees and Activities by Participant

Participant	Meeting	PN/PN+	Peers Present	Peers Interacted	Main Activity
Isaiah	1	PN	6	6 (100%)	Ate lunch and chatted
	2	PN	5	5 (100%)	Apples to Apples
	3	PN	6	6 (100%)	Urban Myth
	4	PN	6	6 (100%)	Fact vs. Crap
	5	PN+	4	4 (100%)	Conversation Game
	6	PN+	7	7 (100%)	Conversation Game
	7	PN+	7	7 (100%)	Apples to Apples
	8	PN+	6	6 (100%)	Question Game
	9	PN+	6	6 (100%)	Tribe Activities
	10	PN+	6	6 (100%)	Tribe Activities
Maddie	1	PN	1	1 (100%)	Apples to Apples Junior
	2	PN	2	2 (100%)	Headbanz

	3	PN	1	1 (100%)	Charades for Kids
	4	PN	2	2 (100%)	Apples to Apples Junior
	5	PN	2	2 (100%)	Charades for Kids
	6	PN+	1	1 (100%)	Made Sports Sign
	7	PN+	3	3 (100%)	Baked Cookies
	8	PN+	3	3 (100%)	Finished Sports Sign
	9	PN+	2	2 (100%)	Pizza Party
	10	PN+	3	3 (100%)	Ice Cream Party
Ryder	1	PN	3	3 (100%)	Bambi Videos
	2	PN	2	2 (100%)	Doodle Dice
	3	PN	3	3 (100%)	Blokus
	4	PN	3	3 (100%)	Friendship Collage
	5	PN	3	3 (100%)	Bean Bag Toss
	6	PN	2	2 (100%)	Nature Scavenger Hunt
	7	PN+	1	1 (100%)	Bean Bag Toss
	8	PN+	3	3 (100%)	Bean Bag Toss
	9	PN+	3	3 (100%)	Bean Bag Toss
	10	PN+	2	2 (100%)	School Scavenger Hunt
Aiden	1	PN	2	2 (100%)	Doodle Dice
	2	PN	3	3 (100%)	Guess Who Disney
	3	PN	3	3 (100%)	Guess Who Disney
	4	PN	3	3 (100%)	Bean Bag Toss
	5	PN	3	3 (100%)	Bocce Ball
	6	PN	2	2 (100%)	Bean Bag Toss
	7	PN	2	2 (100%)	Chalk Pictionary
	8	PN+	3	3 (100%)	Bean Bag Toss
	9	PN+	2	2 (100%)	Bean Bag Toss
	10	PN+	3	3 (100%)	Chalk Pictionary

Note. The third column indicates whether the meeting was a peer network only meeting (PN) or incorporated the social skills component (PN+). Peers Interacted with refers to the number of peer network members with whom the student with autism had a verbal or gestural interaction at any point during the network meeting. In parentheses is the percentage of peers present at the network meeting with whom the student interacted.

During all network meetings, at least one researcher was present. The researcher provided ongoing coaching and support before and after peer network meetings for the network facilitator. In addition, the researcher was taking social interaction, proximity, and engagement data and rating the student's targeted social skills during each ten minute period.

Intervention condition: Social skills training component. After a participant's social skills showed stability in the peer network only phase, the social skills training component was added to the intervention. Facilitators were trained to incorporate social skills training into the peer network meetings and to work with the student with autism for at least 10 minutes outside of the meeting each week on the targeted social skills. For Maddie, Ryder, and Aiden, the network facilitator was also the student's case manager, so this individual was able to lead the social skills training component outside of the network meetings as well as incorporating social skills training into the network meetings. Maddie received the social skills training an hour before her peer network plus meetings. Ryder and Aiden both received their social skills training the morning of their peer network plus meetings. In Isaiah's case, his case manager led the 10 minute social skills training sessions outside of the meetings and his facilitator incorporated opportunities to practice the social skills within the network meetings. Isaiah's case manager worked with Isaiah during the last period of the day, the day before peer network plus meetings were held. The case manager, facilitator, and researcher communicated frequently to ensure that everyone was on the same page. Since the social skills being targeted were specific for students, social skills training plans were individualized. Each participant's social skills plans will be described in further detail.

In general, however, the social skills component included a number of features. First, the participants' curricula were based on the Skillstreaming curriculum (Goldstein & McGinnis, 2011). One benefit of the Skillstreaming curriculum is that each of the skills in the curriculum are broken down into three to six steps that can be used to teach and practice the skill. For targeted skills derived from parent and teacher responses on the ASSP that **did** have Skillstreaming steps in the curriculum, these steps were utilized for students in the study. For

targeted skills that did **not** have Skillstreaming steps in the curriculum, the researcher created steps modeled on preexisting Skillstreaming entries and provided these to the interventionist. Therefore, every targeted skill was broken down into multiple components, either directly from the Skillstreaming curriculum or modeled on steps provided in this curriculum (Goldstein & McGinnis, 2011). For all skills, the case manager was trained to teach the skills using the general Skillstreaming model, which includes describing the skill in explicit steps (with a visual reminder available) and facilitating discussion around the social skill.

During the peer network meetings, the facilitator incorporated a discussion of the skills' explicit steps, led the peers to model the appropriate behavior, and encouraged explicit practice of the social behavior. These are also steps that are encouraged by the Skillstreaming model (Goldstein & McGinnis, 2011). The introduction of the skills was similar to procedures used in prior research (e.g., Ogilvie, 2011; Sansosti, 2010). Specifically, four of the five implementation steps described by Ogilvie (did not include a video modeling component) were adapted and used. The first step was the introduction of the skill to the student and peers. The facilitator shared with the peer network that they were going to be working on the specific skills. The second step was for the facilitator to lead a review of the steps of the skills, using the Skillstreaming steps or steps modeled after existing Skillstreaming steps. The third step was to have the students practice the skills (through modeling and role playing). Finally, the steps were reviewed and discussed throughout the peer network meetings.

All case managers and facilitators were provided with materials to help them teach the targeted social skills and incorporate them into the peer network meetings. The primary investigator created these materials based on the Skillstreaming curriculum (Goldstein & McGinnis, 2011) and based on the individual participants' targeted goals and interests. These

materials were modified after case manager feedback to make them best fit the needs of the individual students. Each case manager and facilitator was given a list of their student's operationally defined target goals. In addition, each facilitator was provided with the skills broken down into explicit steps. As mentioned, these steps were taken from the Skillstreaming curriculum (Goldstein & McGinnis, 2011), when available, or modeled after this curriculum. Since all participants had goals that focused on communication skills, the Group 1: Beginning Social Skills from the Skillstreaming curriculum (Goldstein & McGinnis) were used heavily. These included listening, starting a conversation, having a conversation, asking a question, and giving a compliment (Goldstein & McGinnis, 2011, pp. 109-132). Visual reminders and self-monitoring sheets were created for each student's use, as well. As described in chapter 2, these are evidence-based techniques for social skills training and are suggested in the Skillstreaming curriculum. Facilitators and case managers were coached throughout the semester on teaching the social skills and incorporating them into the network meetings. This coaching will be described in further detail in the training section below.

Isaiah's targeted social skills all related to being a good conversational partner (i.e., maintaining the give and take of conversations, interrupting appropriately, talking about others' interests). The steps for his skills can be found in Appendix Y. Isaiah also used a visual reminder sheet during his outside meeting training sessions (Appendix Z). An example of a modification made to the plan the primary investigator developed was that Isaiah's conversational skill steps originally included giving a compliment as an option for joining or continuing a conversation. However, his case manager explained that Isaiah gives too many compliments and she was working with Isaiah on limiting compliments. The primary investigator then removed this portion from the skill steps before the social skills component was added to the intervention.

During the peer network plus meeting sessions, Isaiah and his peer network members referenced the conversational self-monitoring sheet (Appendix AA). Isaiah's network facilitator was coached in incorporating the social skills into the network meetings. On the first meeting with the social skills component, Isaiah's network facilitator introduced the topic of conversational skills to the group. She led a discussion about why conversational skills were important and had one of the peer network members read the conversation reminders off of the self-monitoring sheet. Throughout the meetings, the peers and Isaiah were encouraged to monitor their own conversations and the conversational skills of others and provide feedback. Isaiah's facilitator was coached to provide him with feedback regarding his skill goals. During the first meetings after incorporating the social skills component, activities focused on conversational skills. For instance, the network members played question and answer games and focused on following the rules of conversations. A different peer reminded the group of the conversational rules at each network meeting.

Maddie's targeted social skills involved interacting with peers during activities and conversations. She had steps for participating in conversations (Appendix BB) and for asking follow up questions (Appendix CC). Outside of the network meetings, Maddie was encouraged to prepare questions and comments to ask and share during the network meetings. She often brought these prompts to the meeting as visual reminders. Maddie's facilitator incorporated the social skills training into the meetings through use of the self-monitoring sheet (Appendix DD) as well as prompting Maddie verbally (e.g., "Remember to ask a follow up question") and gesturally (e.g., pointing to Maddie's self-monitoring sheet). The peer network members were also encouraged to prompt Maddie to participate in conversations and activities. Maddie's facilitator provided feedback to Maddie and her peers and encouraged the peer network members

to provide feedback as well. Activities were selected or modified to encourage social interaction. For instance, while the network's cookies were in the oven baking, the facilitator had the group play a question and answer game to facilitate conversation.

Ryder's goals involved maintaining the give-and-take of conversations, taking turns during games and activities, and giving compliments. Giving compliments and maintaining the give-and-take of conversations were included in one skill sheet (Appendix EE). Outside of the meetings, Ryder was encouraged to come up with a goal for each network meeting (e.g., I will ask four questions). He received a reward for completing his goal (e.g., getting to pick out a movie). Providing reinforcement for meeting goals is a recommended practice in the Skillstreaming curriculum (Goldstein & McGinnis, 2011) and was something that the facilitator and investigator felt would work well for Ryder. During the meetings, the facilitator and/or peers went over the questions listed on the self-monitoring sheet (Appendix FF). Since one of Ryder's special interests was Bambi, his self-monitoring sheet was Bambi-themed. His facilitator and peer network members would then prompt Ryder throughout the meetings to use his skills either verbally (e.g., "Jackie just made a good play. What do you say?") or gesturally (e.g., pointing to the self-monitoring sheet). Both Ryder's facilitator and peers gave him positive feedback for using his skills. Ryder was motivated by competition. During activities such as bean bag toss, the teams could get points for scoring during the activity (i.e., getting the bean bag in the hole) and for using positive social skills (i.e., giving compliments, saying nice things, taking turns). Thus, Ryder was getting reinforced for the appropriate use of his skills.

Aiden had the same goals as Ryder (e.g., maintaining the give-and-take of conversations, taking turns during games and activities, and giving compliments) and used a similar skill sheet for training outside of the network meetings (Appendix GG). Aiden also received a reward for

completing his goal each week. Aiden's self-monitoring sheet was Lion King themed as he was motivated by this movie (Appendix HH). During the meetings, Aiden's peers or Aiden himself went over the questions listed on the self-monitoring sheet. Aiden was prompted and reinforced throughout the meeting for using his social skills. Prompts were verbal (e.g., "Aiden, remember to say good job") and gestural (e.g., pointing to the self-monitoring sheet). As with Ryder's network, Aiden was provided with reinforcement during games and activities for using his social skills. For instance, when the network played Disney Pictionary with chalk, teams could gain extra points for complimenting the other team and taking turns appropriately.

Staff training. Each facilitator received sit-down training at two points during the study. The first training occurred during wave one (before the peer network began) and lasted approximately an hour and a half. At this meeting, facilitators were provided with the *Peer Network Plus Intervention Guide* (Appendix II). This guide was modeled off of the peer network manual used by Carter and colleagues (2013). Each facilitator was provided with the training in a one on one setting in order to allow the staff member to ask questions and allow specific planning around the target student. The training covered the goals of the peer network plus intervention, the facilitator's role in the intervention, and steps to implementing the peer network plus intervention. This meeting focused on setting up the peer network and explained that the social skills component training would occur at a later time. Prior to and after each meeting (peer network only and peer network plus), the researcher would check in with the facilitator and provide feedback and coaching. During these check-ins, the researcher would remind the facilitators of important components (e.g., remembering to ask peers about interactions outside of the meeting). The researcher would also answer questions and provide suggestions. For

example, the researcher suggested to Isaiah's facilitator that she change where she was sitting to allow Isaiah to be closer to his peers.

An additional 30 minute training meeting was held before the social skills training component was started. At this meeting, facilitators (or in Isaiah's case, facilitators and case managers) were given the social skills training materials and were coached on working with the student outside of the meeting and incorporating opportunities to practice the skills during the meetings. Facilitators were asked to meet with the student for at least 10 minutes prior to each peer network plus network meeting and focus on practicing the targeted skill steps. Facilitators received ongoing feedback and coaching throughout the semester through in person feedback before and after the meetings and email communications. As mentioned, the researcher checked in with the facilitator before and after each meeting. During the peer network plus component, the researcher reminded the facilitator to use the social skills materials given and provided coaching around incorporating the skills into the meeting. For example, the researcher noticed that Isaiah's facilitator seemed uncomfortable being explicit about the skill steps with the group during the first peer network plus meeting. The researcher explained why explicit steps were important for Isaiah and brainstormed that she could perhaps have a peer go through the explicit steps at the beginning of the meeting rather than going through them herself. In Ryder's network, the facilitator was frequently reminding Ryder to give compliments to his peers during games. After one meeting, the researcher suggested to the facilitator that she could ask the peers to remind Ryder instead. In addition to in-person contacts, the primary researcher was also in email contact with each facilitator at least once each week, reminding the facilitator about the upcoming meeting, providing feedback from the last session, and offering ideas for the next session.

Social Validity

Measuring social validity was an important aspect of this project as research shows that social validity is a significant factor in determining the fidelity of implementation and outcomes of interventions (Bellini et al., 2007). At the end of the semester, all participants received social validity questionnaires. All four peer network facilitators received the *Peer Network Plus Adult Facilitator Feedback Survey* (see Appendix JJ). The questionnaire has 29 items regarding the likeability, acceptability, and feasibility of the intervention. The first 23 items were statements that are rated on a 5-point Likert scale from *Strongly Disagree* to *Strongly Agree*. The final six questions were open-ended and were included to gain qualitative feedback about the peer network plus intervention. Isaiah's case manager also received this survey but was instructed to skip items 16, 17, and 28 as they related to the peers without disabilities with whom she did not have regular contact (i.e., the peers without disabilities benefitted socially from being a peer partner, the peers without disabilities benefitted academically from being a peer partner, what [if anything] has changed for the peers as a result of being in this project).

Peer network members received the *Peer Network Member Feedback Survey* (see Appendix KK). This form included 22 sentences rated on the same 5-point Likert scale. It also contains four open-ended questions regarding the intervention and the peers' participation in the meetings. The student with an ASD also received a social validity questionnaire (the *Peer Network Plus Student Feedback Survey*, see Appendix LL). This questionnaire asked seven questions about the peer network plus intervention and the students' general impressions of school. Each question could be rated yes, no, or unsure. A place for comments was provided under each question. All participants had assistance from their case manager in filling out the

social validity form. The case managers read the items, circled the students' responses, and wrote any comments that students made.

Fidelity

Determining fidelity of implementation was also an important component of the peer network plus intervention study, as this is an area in which the field has called for more focus and transparency (Bellini et al., 2007; Gresham et al., 2001). As mentioned, fidelity of implementation of the initial meeting was recorded on the *Initial Meeting Checklist* (Appendix W) which consisted of eight content areas that were to be covered during the initial meeting for peer network members. Fidelity of implementation of the peer network plus intervention was measured at each network meeting using the *Peer Network Plus Meeting Intervention Checklist* (Appendix X). This form was filled out by the observer during each network meeting and contained four main fidelity questions. The first three were applicable to all network meetings and asked about the students' interactions during the meeting, interactions outside of the meeting, and facilitation during the meeting. The fourth question specifically focused on the social skills component of the peer network plus intervention and was, thus, most applicable once this component was started for each student. However, observers scored this item at every network meeting to see whether or not social skills instruction was being incorporated prior to the addition of the social skills component. Each of the four large questions had a series of sub-questions. If any of the sub-questions were scored "yes", the overarching question was scored "yes." Fidelity of implementation is examined along with research question one, as fidelity impacts outcomes.

Data Analysis

The research questions for this study are repeated below followed by an explanation of the data analysis procedures that were used to address each question. A section regarding inter-observer agreement for the direct observation data (i.e., social skills ratings and social interaction, proximity, and engagement scores) is also included.

Question 1. Is the peer network plus intervention useful for (a) increasing targeted social skills as measured through direct observations and the ASSP, (b) increasing the number of social initiations and responses between the target student and peers during network meetings, (c) increasing students' broader social skills and adaptive behaviors as measured by changes on the Vineland, SSIS, and case manager and parent packets, and (d) increasing the number of social contacts and interactions students have in and out of school, as measured by case manager and parent ratings?

The four portions of this question were addressed separately. First, to examine the impacts of the intervention on the targeted social skills, visual analysis based on the WWC Evidence Standards (Kratochwill et al., 2010) was used. Visual analysis is a generally relied upon method for examining effects in single case studies (Kazdin, 2011). In order to look at overall effectiveness on targeted social skills and to allow comparisons between individuals in the multiple baseline design, Likert scale rating scores for the three targeted social skills were averaged for each ten minute observation, providing an average social skills rating for each time point. These data were then graphed. Two independent raters who were not part of the research team examined the graphs. These raters were both doctoral students in school psychology, had completed coursework in single case design, and had prior experience with the WWC Standards.

Evidence criteria designed by Maggin, Briesch, and Chafouleas (2013) were applied to the social skills rating graphs.

Maggin and colleagues' (2013) design standards protocol is broken down into five categories: baseline analysis, within phase analysis, between phase basic effects, between phase experimental effects, and overall effectiveness. Most items are coded as either a 1, indicating that the item's criteria were met or *desirable* or as a 0, indicating that the item's criteria were not met or that it is *undesirable*. For example, for the baseline phase, raters code whether the data document a pattern of behavior in need of change, whether the data demonstrate a predictable baseline pattern, whether variability is sufficiently consistent, and whether the trend is either stable or moving away from the therapeutic direction (Maggin et al., 2013). If the answer to each question is yes, it is coded as a 1. For the within phase analysis section, the first item concerns the number of data points within each phase (including the baseline phase) and is rated a 0, 1, or 2. This item is given a score of 0, indicating *No Evidence*, if any phase has less than three data points. It is given a score of 1, indicating *Moderate Evidence*, if there are three or four data points in any phase. A full score of 2, indicating *Strong Evidence*, is given if there are at least five data points in all phases. The other three items in this section are rated either as a 0, indicating that the item's criteria were not met, or as a 1, indicating that the criteria were met. These items include whether all non-baseline phases document a predictable data pattern, whether variability across phases is sufficiently consistent, and whether trend is sufficiently low or moving in the hypothesized directions within phases (Maggin et al., 2013).

There are eight items in the between phase basic effects section, each rated as either a 0 or a 1. These items include: whether the between phase data document the presence of basic effects, whether there is an immediate change in level between adjacent phases, whether there is

an immediate change in trend between adjacent phases, whether there is an overall level change between baseline and treatment phases, whether there is an overall trend change between baseline and treatment phases, whether there is an overall change in variability between baseline and treatment phases, whether there is sufficiently low overlap between baseline and treatment phases to document an experimental effect, and whether the data patterns in similar phases demonstrate similar patterns. The final item (whether data patterns in similar phases demonstrate similar patterns) was not applicable to this study. The between phase experimental effect section only contains two coded items: whether there are sufficient opportunities to demonstrate a treatment effect and whether treatment effects are demonstrated.

The final section, overall effectiveness, contains four items that are each rated on a 0-2 scale. The first item, data points per phase, is rated as a 2 if there are more than five data points in each phase. If there are three to four data points in each phase, a score of 1 is indicated. Anything less than three data points in a phase is scored as a 0. The second item, total demonstrations of treatment effects, is scored as a 2 if there are at least three demonstrations of a treatment effect. If there are not at least three demonstrations of a treatment effect, this item is scored as 0. The third item, ratio of effects to non-effects, looks at the relative frequency of non-effects. If there are no instances of non-effects, a score of 2 is given. If the ratio of effects to non-effects is less than or equal to 3:1, a score of 1 is indicated. Finally, a score of a 0 is given if the ratio of effects to non-effects is greater than 3:1. The last item is an overall evidence rating. If the previous three items were all rated as a 2, a 2 is given for overall evidence, indicating that the study demonstrates *Strong Evidence*. If any of the previous three items was rated as a 1, a 1 is given for the overall evidence item, indicating that the study demonstrates *Moderate Evidence*. If any of the three previous items had a score of 0, the overall evidence is rated as a 0, indicating

that the study demonstrates *No Evidence*. The overall agreement between the two raters across items for the social skills graphs was 95.23%

After the independent raters scored the social skills rating graphs, the primary researcher investigated outcomes on individual skills. To further examine the impact of the peer network plus intervention on the individual skills, the primary researcher used visual analysis to examine the graphs of each skill's data points, examining changes in level and trend across phases as well as examining the immediacy of the change for each skill.

To further examine the effectiveness of the intervention, the percentage of all nonoverlapping data method was also used (PAND, Parker, Hagan-Burke, & Vannest, 2007). PAND represents the percentage of data points that remain after data points that are overlapping are removed (Parker, Vannest, & Davis, 2011). A PAND of 50% would represent chance level; thus, taking the PAND and subtracting 50% leaves the non-overlap beyond chance level (Parker et al., 2007). As suggested by the most current research, a hand scoring method was used to calculate PAND rather than a computer program (Parker et al., 2011). Using visual analysis and the PAND method helped the researchers determine if the social skills intervention through the peer network led to changes in the students' targeted social skills. The ASSP was descriptively compared between wave one and wave two for each student in order to see if there were changes in the targeted social skills as rated by case managers and parents. The researchers also examined whether there were changes in the ASSP's overall score or changes in the subscales of social reciprocity, social participation/ avoidance, and detrimental social behaviors. Maddie's subjective units of distress scores on her anxiety meters each week were also described.

The second part of the first question addresses the interactions that occurred within the peer network meeting. The total number of interactive behaviors between the student with ASD

and the peer network members (i.e., student with ASD initiations + peer initiations + student with ASD responses + peer responses) were graphed for each phase. The same two independent raters utilized the Maggin and colleagues' protocol (2013) to score the total interactions graphs using the criteria defined previously. The overall agreement between the two raters across items for the total interactions graphs was 95.23%. In addition, to further look at the impact of the intervention on the students with autism's interactions, the students' contributions (i.e., student with ASD initiations + student with ASD responses) were also graphed and examined through visual analysis by the primary researcher. To examine whether the students with autism had changes in the number of initiations they had throughout the intervention, these data were also graphed. Engagement and proximity data were also graphed and visually compared across all phases. Visual analysis was used by the primary researcher to determine whether there were changes in level, trend, and variability across phases (Kazdin, 2011). Again, the PAND method (Parker et al., 2007) was used to calculate the percentage of all nonoverlapping data for the total number of interactive behaviors as well as proximity and engagement across phases. These methods assisted the researchers in determining if the number of interactive behaviors between the student with ASD and peers in the network changed as social skills were taught. It also allowed the researchers to determine if the student with ASD began initiating more or less after social skills were taught. Finally, these methods allowed for a comparison of engagement and proximity data across the intervention to see if students were more or less engaged as the intervention continued and if duration of time in proximity to peers and/or adults changed as more social skills were taught and the network meetings continued.

The third part of the first question refers to broader social and adaptive behaviors. For this part of the question, SSIS and Vineland scores were compared between wave one and wave

two for all individual participants. This analysis was solely descriptive. If there were large changes in certain domains (defined as a one standard deviation difference), an item level analysis was also conducted. On the case manager and parent packets, the progress level listed for each of the goals chosen at wave one was also be examined.

The last part of this question looked at the number of social contacts and interactions the participants had in and outside of school. First, how many **new** names were listed at wave two on the parent and case manager packets under both social contacts and friendships were examined. Second, the number of social contacts the participants had with their peer network members each week was inspected. Third, changes in parents' answers on the four questions on the parent packets were described.

The fidelity of implementation was also examined here as it is important to know whether the intervention was executed correctly before interpreting the data. First, fidelity of the major steps of the intervention package was examined. This included looking at the percentage of content items that were covered on the *Initial Meeting Checklist* (Appendix W), percentage of peer network plus/ intervention meeting weeks in which the case manager spent at least ten minutes with the student in social skills instruction (via case manager report), and whether or not trainings were attended. The four main questions on the *Peer Network Plus Meeting Intervention Checklist* (Appendix X) were the most important for fidelity. To be considered in full fidelity, the first three main questions had to be answered yes for all network meetings. Once the social skills component was introduced, all four of the main questions needed to be answered yes to be considered in full fidelity. The percentage of main questions answered yes as well as the percentage of the underlying questions marked yes were calculated and reported. In the peer network only/ baseline condition, the expectation was that 12 of the 14 (85.71%) underlying

questions were answered yes to be considered implemented with fidelity. After the social skills component was introduced to the network meetings, the expectation was that at least 15 of the 18 (83.33%) underlying questions were answered yes to be considered implemented with fidelity.

Question 2. Are peer networks with an added social skills training component (i.e., peer network plus) socially valid interventions that can be implemented in high schools?

- a. Do the students with autism, school interventionists, and peers view this intervention positively, as rated on social validity forms?
- b. Do paraprofessionals or special educators feel that they can implement these interventions in the future, as indicated by their responses on the social validity forms?

Social validity was examined based on the social validity forms that the students with autism, school interventionists, and peers completed at wave two. For the school interventionists and peers, each of the qualitative labels on the Likert scale was converted to a number. *Strongly Disagree* ratings were given a score of 1 with *Strongly Agree* ratings given a score of 5. Items that were written positively (e.g., “I felt confident acting in this role”) were expected to have scores of three or above and items that were written negatively (e.g., “This was too much work”) were expected to have scores of two or below to be considered positive impressions of the intervention. Ratings on these social validity forms were looked at both individually and averaged among all participants to gain an understanding of individuals’ views about the peer network plus intervention. For the student with ASD, the items were not given number ratings but were examined separately. The percentage of students with ASD marking “yes” to each item was calculated.

The second portion of this question was examined in the same way as listed above and looked at the questions on the interventionists' form regarding future implementation of the intervention (e.g., "I would know what to do if I was asked to implement this strategy again"). The answers to the open-ended questions were subjectively described.

Question 3. Is the Autism Social Skills Profile (ASSP) sensitive enough to detect improvements in social skills as indicated by changes in pre-to-post scores on the ASSP and is it as sensitive when compared to changes demonstrated on other measures (SSIS, Vineland, observations)?

To answer this question, the degree of change between wave one and wave two scores on the ASSP was compared to changes seen for participants on the SSIS, Vineland, and in direct observations of the peer network meetings. If the degree of change on the ASSP was equal to or more than seen in other measures, it could be argued that the ASSP is sensitive enough to detect changes in social skills at this level of intervention

Inter-observer Agreement

Inter-observer agreement (IOA) data was collected for the direct measures (i.e., social skills ratings and social interaction, engagement, and proximity data) recorded during peer network meetings. As mentioned, the WWC Design Standards for Single Case Designs require that IOA must be collected in each phase on at least 20 percent of the data points in each condition (Kratochwill et al., 2013). Although this is an acceptable quantity of IOA, Kennedy (2005) suggested that it is preferable to conduct IOA on 33 percent of data points. To meet these higher criteria, IOA was collected on 40 percent of all ten minute observation periods, and on at least 25 percent of data points in each phase. See Table 12 below for the percentages of data points on which IOA was calculated across each phase.

Table 12

Percentage of Data Points with IOA Collected by Phase

Participant	Baseline	Intervention	Total
Isaiah	25.0%	50.0%	40.0%
Maddie	40.0%	40.0%	40.0%
Ryder	33.3%	50.0%	40.0%
Aiden	28.6%	66.7%	40.0%
Overall	31.8%	50.0%	40.0%

For the targeted social skills, the researchers used linear weighted kappa (observed kappa over maximum possible kappa) due to the ordinal nature of the Likert scales (Cohen, 1968). This is consistent with the methodology in the Mason et al. (2012) study on which the social skills rating Likert scales in this study were based. Linear weighted kappa scores allow ‘close misses’ (e.g., one rater selects a rating of 1 while the other selects a rating of 2) to be weighted differently than misses that are further apart (e.g., one rater selects a rating of 1 while the other selects a rating of 5). This is appropriate for data on a Likert scale because a difference between 1 and 5 is a bigger concern than a difference between a 1 and a 2 rating. Linear weighted kappa coefficients were calculated using Analyse-it for Microsoft Excel (2014) software.

Overall linear weighted kappa for the social skills ratings (across participants and phases) was 0.85. The kappa coefficient represents the proportion of agreement between the two observers that is greater than what would have been expected by chance (Cohen, 1968). Although there is some disagreement about how to interpret the magnitude of kappa, authors have suggested that the distinctions in Table 13 be used (Landis & Koch, 1977; Viera & Garrett, 2005). In the WWC Standards, anything above 0.60 is considered acceptable for a study to *Meet Evidence Standards* (Kratochwill, 2013). Thus, the overall linear weighted kappa statistic for this

measure (0.85) is considered *almost perfect agreement* and meets the requirement for the WWC Single Case Design Standards.

Table 13

Suggested Kappa Statistic Interpretations

Kappa	Interpretation
<0.00	Less than chance agreement
0.01-0.20	Slight agreement
0.21-0.40	Fair agreement
0.41-0.60	Moderate agreement
0.61-0.80	Substantial agreement
0.81-1.00	Almost perfect agreement

Table 14 lists the linear weighted kappa statistics calculated in each phase for each participant's social skills ratings, as well as overall weighted kappa statistics for each participant. All participants' overall weighted linear kappa scores are in the *substantial to almost perfect* ranges (0.75-0.88). In addition, overall in the baseline condition and intervention condition, weighted linear kappa was in the *substantial* agreement category (0.80 and 0.78, respectively). Weighted linear kappa scores for individual phases all fell within the *substantial to almost perfect* agreement ranges, with the exception of Isaiah's baseline phase (range 0.14-0.85). Isaiah's baseline had a linear weighted kappa statistic of 0.14 which is considered a *slight* agreement. This low kappa statistic may be due in part to the fact that Isaiah's baseline had only nine data points of IOA, half as many as the next lowest number. Three of the nine data points were exact agreements, five had a 1-point difference, and one was 2-points discrepant. This was the first IOA observation for the project. During the debriefing, the primary investigator and observer clarified questions that came up during the observation.

Table 14

Linear Weighted Kappa by Participants and Phases

Participant	Baseline	Intervention	Overall
Isaiah	0.14	0.70	0.75
Maddie	0.83	0.78	0.82
Ryder	0.85	0.75	0.88
Aiden	0.73	0.73	0.84
Overall	0.80	0.78	0.85

To ensure that all individual skills were measured reliably, linear weighted kappa was also calculated for each skill (see Table 15 below). With the exception of Maddie's second skill (invites peers to join her in activities/conversations), which had a linear weighted kappa of 0.58 (*moderate* agreement), all skills had observed linear weighted kappa statistics in the *substantial* to *almost perfect* agreement ranges (0.58-0.91).

Table 15

Linear Weighted Kappa by Skill

Participant	Skill	Kappa
Isaiah	Maintains the "give-and-take" of conversations	0.67
	Joins a conversation with two or more people without interrupting	0.81
	Talks about topics, including others' interests, other than the student's special interest, and maintains the neutral topic	0.71
Maddie	Responds to the invitations of peers to join them in activities/conversation (responses)	0.68
	Invites peers to join her in activities/ conversations (initiations)	0.58
	Asks questions to request information from a person (initiations/responses)	0.86
Ryder	Maintains the "give-and-take" of conversations	0.72
	Takes turns during games or activities.	0.82
	Provides compliments to others	0.85
Aiden	Maintains the "give-and-take" of conversations	0.78
	Takes turns during games or activities.	0.69
	Provides compliments to others	0.91

IOA was conducted on the Lily codes for the social interaction variables (i.e., student with autism initiations, student with autism responses, peer network member initiations, peer network member responses) and duration variables (i.e., proximity to adult supports, proximity to peer network members, engagement) using the MOOSES program (Tapp, 2012; Tapp, Wehby, & Ellis, 1995). For the social interaction frequency measures, IOA was calculated by dividing the number of agreements by the sum of agreements and disagreements and multiplying by 100% ($A/A+D * 100\%$). The MOOSES program was set to calculate point-by-point agreement for frequency codes using a 5 second window. Thus, if the secondary observer had the same code within 5 seconds of the primary observer, this was considered an agreement. During observation sessions when both observers agreed on the nonoccurrence of interactions, full agreement on frequency codes for that class period was recorded. Using an occurrence by occurrence method of calculating IOA is much more conservative than simply dividing two observers' frequencies to come up with an agreement term.

Table 16 below displays the IOA data for social interactive behaviors for each participant. The overall interactive behaviors IOA across all participants was 85.59%, which exceeds the suggested criteria of 80% in the WWC Evidence Standards (Kratochwill et al., 2011). Each participant's overall interactions IOA ranged from 79.56% for Isaiah to 94.16% for Ryder. Table 16 also breaks down the IOA data into the individual interactive behaviors. Overall, IOA was higher than 80% for each interactive behavior (i.e., student initiations, peer initiations, student responses, peer responses; range: 83.99% to 88.35%). The IOA for each behavior for each student is also listed and ranged from 74.88% to 100%. Table 17 breaks down the IOA data between peer network only/ baseline conditions and the peer network plus social skills component/ intervention conditions. Overall, IOA in both the baseline and intervention

conditions was sufficient according to the Kratochwill and colleagues (2011) standards. IOA in the baseline condition was higher overall (91.3%) than IOA in the intervention condition (81.1%), which may be due to the increased number and complexity of interactions occurring during the intervention condition. IOA in each phase for each participant is also listed and ranges from 69.6% (student responses during the intervention condition for Maddie) to 100% (baseline and intervention student initiations, baseline student responses, and baseline peer responses for Ryder).

Table 16

IOA on Social Interactive Behaviors across Participants

Participant	Student Initiations	Peer Initiations	Student Responses	Peer Responses	Overall Interactions
Isaiah	81.43%	85.01%	76.92%	74.88%	79.56%
Maddie	88.15%	80.96%	78.74%	85.38%	83.31%
Ryder	100.00%	92.70%	91.99%	91.96%	94.16%
Aiden	83.83%	83.03%	90.75%	83.73%	84.00%
Overall	88.35%	85.42%	84.60%	83.99%	85.59%

Table 17

IOA on Social Interactive Behaviors across Baseline and Intervention Phases

Participant	Student Initiations		Peer Initiations		Student Responses		Peer Responses		Overall Interactions	
	BL	Int	BL	Int	BL	Int	BL	Int	BL	Int
Isaiah	82.5%	81.1%	93.9%	82.0%	85.0%	74.2%	77.4%	74.1%	84.7%	77.9%
Maddie	96.3%	80.0%	92.1%	69.8%	87.9%	69.6%	88.2%	82.6%	91.1%	75.5%
Ryder	100%	100%	95.7%	89.7%	100%	84.0%	100%	84.0%	98.9%	89.4%
Aiden	75.0%	92.7%	91.2%	74.8%	90.3%	91.2%	92.3%	75.2%	87.2%	83.5%
Overall	89.3%	87.6%	93.1%	79.4%	91.6%	79.1%	91.2%	78.4%	91.3%	81.1%

For duration codes, IOA was calculated in two ways. The first followed the same formula as the frequency codes ($A/A+D * 100\%$) using a second-by-second comparison of the two observers' files. Mean kappa coefficients (Cohen, 1960) were also calculated. Observation

periods in which both observers either coded or did not code duration values for the entire period (e.g., the student was coded as engaged for the entire 10 minute period by both observers) were not included in these calculations, as kappa is undefined in both scenarios. This occurred often. For engagement, both observers agreed that the participant was engaged for the entire 10 minute period during 68.8% of observations. Periods in which both observers agreed that proximity codes remained constant for the entire period made up 70.8% of sessions for proximity to adult support and 72.9% of sessions for proximity to peer network members. This is important to consider as it means calculated kappa coefficients likely underestimate levels of agreement between observers since so many full agreement sessions were not included in the calculation of kappa coefficients.

IOA scores on engagement, proximity to peers, and proximity to adults are displayed in Tables 18 and 19 below. The IOA for engagement using the first method was high overall (99.51%) as well as across participants (range: 99.18% to 99.99%). The kappa statistic for engagement, overall, was 0.84, which falls in the *almost perfect* agreement range. For each individual student, kappa for engagement ranged from 0.79 to 0.99, falling in the *substantial* to *almost perfect* agreement ranges. Using the first method of calculating IOA, engagement IOA was high in both the baseline (99.4%) and intervention conditions (99.6%). For individual participants, baseline engagement IOA ranged from 98.4% to 100%. Individuals' intervention engagement IOA ranged from 99.3% to 100%. When categories are broken down further to look at agreement scores across baseline and intervention phases for each participant, it is even more important to interpret kappa statistics with caution as so many of the kappa values were undefined due to both observers having the same duration codes on for the entire ten minute periods. Many of the kappa statistics listed in Table 19 were based on only one or two

observations that were not undefined. For some participants, no observations contained changes in duration codes in either the baseline or intervention conditions. The overall kappa statistic for engagement at baseline was 0.96 (range for individual participants: 0.88 to 0.99); at intervention, the overall kappa statistic for engagement was 0.62 (range for individual participants: 0.47 to 0.96, 1 undefined).

The overall IOA for proximity to peers was 97.29%, with a kappa of 0.70, falling in the *substantial* agreement category. For individual participants, proximity to peers IOA ranged from 98.22% to 99.78% and kappa ranged from 0.55 to 0.92. Using the first method of calculating IOA, proximity of peers IOA was extremely high across both the baseline and intervention conditions (99.9% and 98.9%, respectively). For individual participants, baseline IOA for proximity to peers ranged from 99.8% to 100%. Intervention IOA for proximity to peers ranged from 96.6% to 99.8%. Kappa statistics for proximity to peers across baseline was 0.96 at baseline (range for individual participants: 0.89 to 0.99, 1 undefined) and 0.60 at intervention (range for individual participants: 0.41 to 0.92).

For proximity to adults, the overall IOA was 97.55%, with a kappa statistic of 0.82 (*almost perfect* agreement). For individual participants, proximity to adults IOA ranged from 99.04% to 100.0%. Kappa values ranged from 0.64 to 0.89, with one student's kappa statistic for proximity to adults being undefined. Using the first method for calculating IOA, IOA for proximity to adults was high both at baseline (99.8%) and intervention (99.5%). The overall kappa statistic was 0.96 at baseline and 0.67 at intervention. For individual participants, baseline IOA ranged from 99.4% to 100% (kappa of 0.89 to 0.99, 1 undefined). At intervention, individual participants' IOA ranged from 98.7% to 100% (kappa of 0.51 to 0.76, 1 undefined).

Table 18

IOA on Duration Codes across Participants

Participant	Engagement		Prox to Peers		Prox to Adults	
	%	Kappa	%	Kappa	%	Kappa
Isaiah	99.49%	0.81	99.78%	0.78	99.63%	0.64
Maddie	99.99%	0.99	99.75%	0.71	99.75%	0.87
Ryder	99.40%	0.79	98.22%	0.55	99.04%	0.89
Aiden	99.18%	0.93	99.63%	0.92	100.0%	und
Overall	99.51%	0.84	97.29%	0.70	97.55%	0.82

Note. und refers to “undefined”. Kappa is undefined if both observers’ duration codes remained constant throughout the observation period.

Table 19

IOA on Duration Codes across Phases

Participant	Engagement %		Engagement Kappa		Prox to Peers %		Prox to Peers Kappa		Prox to Adults %		Prox to Adults Kappa	
	BL	Int	BL	Int	BL	Int	BL	Int	BL	Int	BL	Int
Isaiah	99.8	99.4	0.88	0.73	99.8	99.8	0.89	0.66	99.8	99.6	0.89	0.51
Maddie	100	100	0.99	und	99.9	99.6	0.99	0.56	100	99.6	0.99	0.76
Ryder	99.5	99.3	0.98	0.47	99.8	96.6	0.97	0.41	99.4	98.7	0.95	0.73
Aiden	98.4	100	0.92	0.96	100	99.3	und	0.92	100	100	und	und
Overall	99.4	99.6	0.96	0.62	99.9	98.9	0.96	0.60	99.8	99.5	0.96	0.67

Note. und refers to “undefined”. Kappa is undefined if both observers’ duration codes remained constant throughout the observation period.

Chapter 4

Results

The purpose of the current chapter is to describe the results of this research study. The three research questions are restated below and the results for each of the questions, as determined using the methods explained in the previous chapter, are elucidated in order.

Question One

Is the peer network plus intervention useful for (a) increasing targeted social skills as measured through direct observations and the ASSP, (b) increasing the number of social initiations and responses between the target student and peers during network meetings, (c) increasing students' broader social skills and adaptive behaviors as measured by changes on the Vineland, SSIS, and case manager and parent packets, and (d) increasing the number of social contacts and interactions students have in and out of school, as measured by case manager and parent ratings?

Social skills data. Figure 5 displays the average social skills rating for each participant during each ten minute observation period. The range of possible values was from 1 to 9. At baseline, during the peer network only condition, Isaiah's mean average social skills rating was 2.94 (range: 2.00-3.67). During the peer network plus/ intervention condition, Isaiah's mean average social skills rating was 6.74 (range: 5.00-8.00). This indicates a gain of 3.80 points on the average social skills rating between baseline and intervention conditions for Isaiah. Maddie's baseline average social skills rating during the peer network only condition was 3.27 (range: 1.00-4.33). During the peer network plus/ intervention condition, Maddie's mean average social skills rating was 6.71 (range: 5.00-8.67). This is a gain of 3.44 points on the average social skills rating between baseline and intervention conditions for Maddie. Ryder's baseline average social skills rating was 1.94 (range: 1.00-4.67). Ryder's average intervention social skills rating was

5.89 (range: 3.33-7.00). This indicates a gain of 3.94 average social skills points. Lastly, Aiden's baseline average social skills rating was 2.19 (range: 1.33-3.67). His average intervention social skills rating was 6.67 (range: 3.67-8.00). This represents a gain of 4.48 average points between baseline and intervention

For Figure 5, three data points would need to be removed in order for there to be no overlapping data for the average social skills ratings. Since there are 120 total data points on Figure 5, PAND is 97.50%. This indicates that there is 47.50% less overlapping data than would be expected by chance. This low overlap indicates that the social skills training component was highly effective at increasing the participants' targeted social skills.

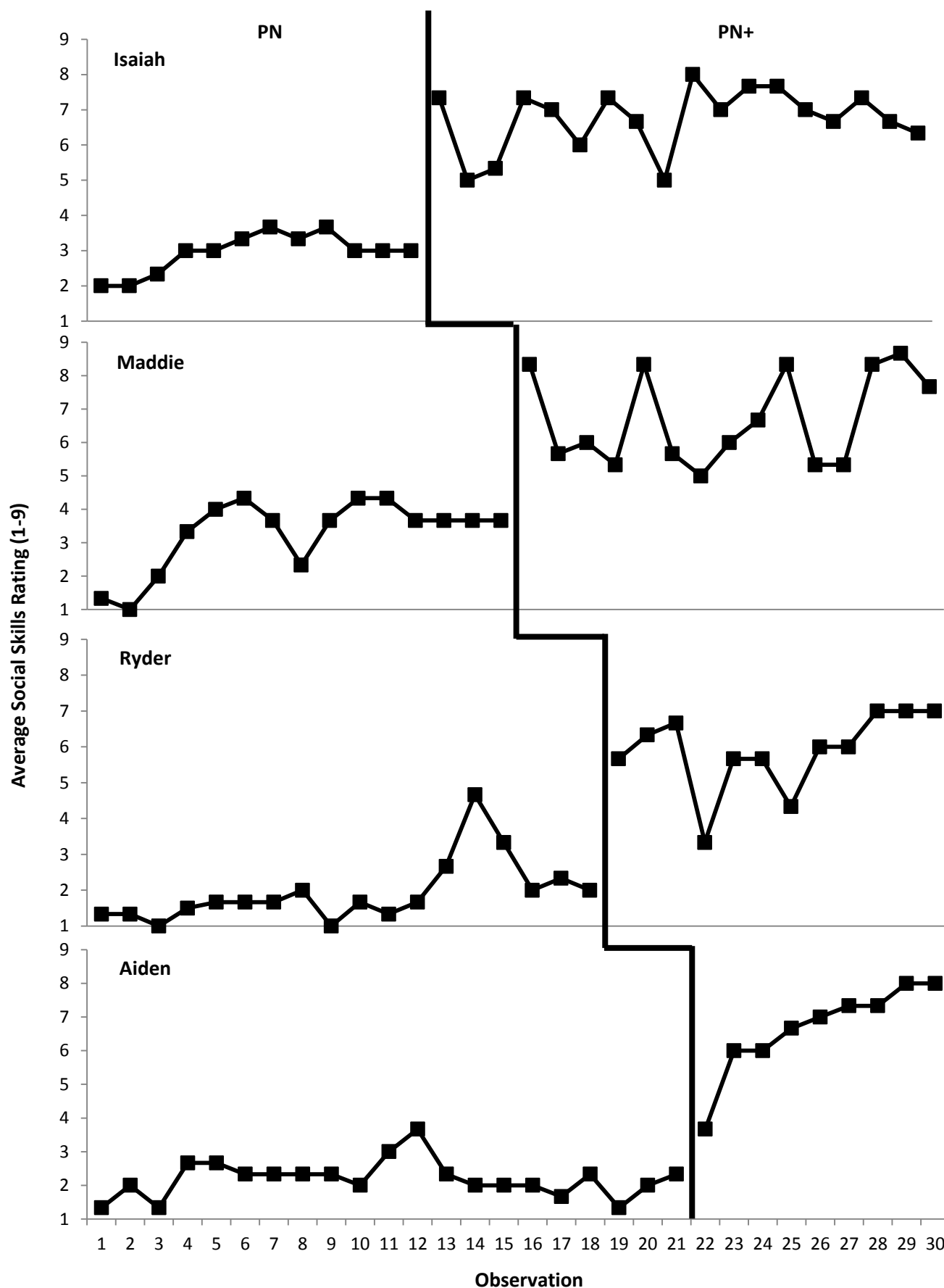


Figure 5. Average social skills rating on targeted skills per 10 minute observation.

Table 20 includes the visual analysis scores on the Maggin and colleagues' (2013) protocol for Figure 5, as rated by the two independent coders. Both raters indicated a basic effect between the baseline and intervention phases for all four participants (see *treatment effects demonstrated* scores of 1 for all participants). Due to these basic effects, as well as sufficiently meeting other criteria, both raters found that there was *Strong Overall Evidence* (overall evidence rated as a 2) for the social skills ratings (Figure 5).

Table 20

Visual Analysis Scores for the Social Skills Graphs

	Social Skills Rating			
	Isaiah	Maddie	Ryder	Aiden
Baseline				
Change	1	1	1	1
Predictable	1	1	1	1
Consistent Variability	1	1	1	1
Trend	1	0*	1	1
Within Phase Analysis				
Sufficient Data Points	2	2	2	2
Predictable	1	1	1	1
Consistent Variability	1	1	1	1
Trend	1	1	1	1
Between Phase Basic Effect				
Basic Effects	1	1	1	1
Level – Immediacy	1	1	1	1
Trend –Immediacy	0	0	0*	1
Level – Change	1	1	1	1
Trend – Change	0	0	0*	1
Variability – Change	1	1	0*	1
Low Overlap	1	1	1	1
Similar Phases	-	-	-	-
Between Phase				
Opportunity to Demonstrate Effect	1	1	1	1
Treatment Effects Demonstrated	1	1	1	1
Overall Effectiveness				
Data Points Per Phase	2	2	2	2
Demonstrations of Treatment Effect	2	2	2	2
Ratio	2	2	2	2
Overall Evidence	<i>2 = Strong Overall Evidence</i>			

Note. Items marked with * indicate that the raters disagreed on the code. When there was a disagreement, the lower code was selected.

In addition to measuring Maddie's three targeted skills, the researchers also looked at Maddie's subjective levels of anxiety. Maddie's ratings on the anxiety meter (Appendix V) are graphed below in Figure 6. Maddie's subjective anxiety score (1 = not at all anxious to 10 = most anxious) at the beginning of the meetings ranged from 1, indicating that Maddie was not at all anxious during the last meeting, to 6 during the second meeting. In general, her subjective anxiety score before the meetings declined as Maddie was exposed to more meetings. At the end of meetings, Maddie always gave the lowest possible subjective anxiety rating of 1.

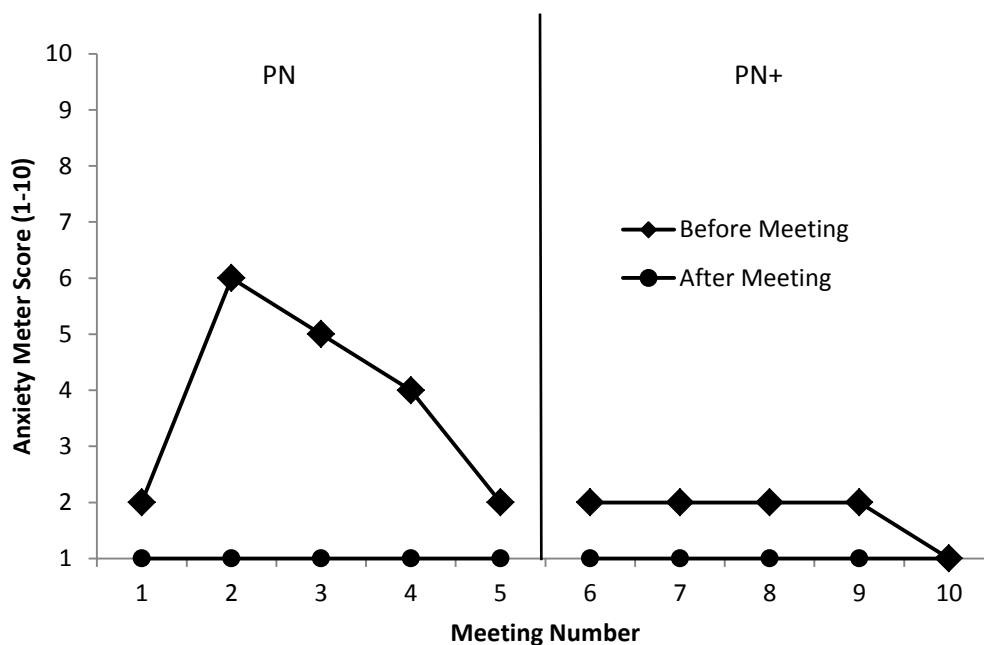


Figure 6. Maddie's subjective anxiety ratings during peer network meetings.

In addition to the social skills average scores that the independent observers coded using the Maggin and colleagues' protocol (2013) and the WWC Standards, the primary investigator examined the individual skills. The individual skills are graphed in Figure 7. Isaiah's first skill was maintaining the give and take of conversations. During baseline, his average score for this skill was 2.75 (range: 2.00-4.00). After some variability, this skill was stable at 3 before the peer

network plus component began. During the peer network plus intervention, his average score for maintaining the give and take of conversations was 6.83 (range: 4.00-8.00). Isaiah's scores for this skill were more variable during the peer network plus phase but only one data point overlapped with the baseline, peer network only phase. On average, Isaiah gained 4.08 points on the maintaining the give and take of conversations Likert scale. Isaiah's second skill, joining a conversation without interrupting, had an initial increasing trend followed by stability at a score of 3 during baseline. Isaiah had an average baseline score of 2.75 (range: 1.00-4.00) for his second skill. In the peer network plus intervention condition, Isaiah's average score was 6.83 (range: 5.00-9.00). For this second skill, Isaiah gained 4.08 points on average. There were no overlapping points between baseline and intervention for Isaiah's second skill. Isaiah's final skill, talking about others' areas of interest, had an initial increasing trend followed by stability during baseline. Isaiah had a mean baseline score of 3.33 (range: 2.00-4.00) and a mean intervention score of 6.56 (range: 4.00-8.00) for his third skill. This indicates an average gain of 3.23 points. For this skill, two data points overlap between baseline and intervention.

Maddie's first skill was responding to the initiations of others. Her average baseline score for this first skill was 5.13 (range: 1.00-7.00). Maddie showed a large increase in this skill during her baseline phase, starting at a score of 1 and stabilizing at a score of 6. During the intervention, peer network plus phase, Maddie's average score was 8.47 (range: 6.00-9.00). This means that Maddie had an average gain of 3.34 points for her first skill between the baseline and intervention conditions. Between her baseline and intervention phases, one data point overlapped for this skill. For inviting peers to join her in activities and conversations, Maddie's baseline average score was 3.67 (range: 1.00-5.00). Her peer network plus intervention scores for this skill were more variable. The average intervention score was 6.87 (range: 2.00-9.00), indicating

a gain of 3.20 points between baseline and intervention. For Maddie's second skill, two data points overlapped between baseline and intervention. Maddie's third skill was asking questions to request information from peers. She did not display this skill at all during baseline, leading to a stable average baseline score of 1.00 (range: 1.00-1.00). During the intervention, peer network plus phase, Maddie's scores for this skill were extremely variable, ranging from 1-9, with an average score was 4.80. This indicates an average gain of 3.80 points. A total of four data points overlapped between baseline and intervention.

Ryder's first skill was maintaining the give and take of conversations. At baseline, his average score for this skill was 1.67 (range: 1.00-3.00). Ryder's data for this skill showed a slight increasing trend before stabilizing. During the intervention phase, his average score for this skill was 5.17 (range: 4.00-7.00). This indicates an average gain of 3.50 points for the first skill. No data points overlapped between baseline and intervention for Ryder's first skill. Ryder had an average score of 3.19 (range: 1.00-7.00) for his second skill, taking turns during games and activities. This score excludes two baseline observations in which the observer(s) determined that there was no opportunity to display this skill. These observations were not graphed or included in the averages in Figure 5. Ryder's scores on this second skill spiked before decreasing back to a stable level of 3. During the intervention peer network plus phase, the average score was 6.58 (range: 5.00-8.00), indicating an average gain of 3.39 points. Three data points overlapped between baseline and intervention. Providing compliments to others was Ryder's third skill. At baseline, he had an average score of 1.17 (range: 1.00-4.00). With the exception of one spike, Ryder's scores for this skill were stable at a score of 1. Ryder's average score for this skill during intervention was 5.92 (range: 1.00-8.00), indicating an average gain of 4.75 points. Two data points overlapped between baseline and intervention.

Maintaining the give and take of conversation was also Aiden's first skill. At baseline, his average score for this skill was 2.00 (range: 1.00-3.00). This average score rose to 6.22 (range: 4.00-8.00) during the intervention phase, an average gain of 4.22 points. During the peer network plus condition, Aiden showed an increasing trend on this skill before stabilizing at a score of 8 with no overlapping data points between baseline and intervention. Aiden's second skill, taking turns during games and activities, had a baseline average score of 3.33 (range: 2.00-5.00) and an intervention average score of 7.44 (range: 6.00-8.00). This represents an average gain of 4.11 points. At intervention, Aiden's data for this skill showed an initial increasing trend before stabilizing at a score of 8 again with no overlapping data points between baseline and intervention. Finally, Aiden's last goal, providing compliments to others, had an average baseline score of 1.24 (range: 1.00-4.00). With the exception of one spike, his baseline scores for this skill were stable at a score of 1. During intervention, Aiden's average score for this skill was 6.33 (range: 1.00-8.00). This indicates an average gain of 5.09. During intervention, Aiden showed an initial increasing trend for this skill, with one overlapping data point between baseline and intervention.

Table 21 includes the raw data for all observations. Rows that are bolded were the observations that were randomly dropped in order to provide a consistent three data points for each network meeting for each student.

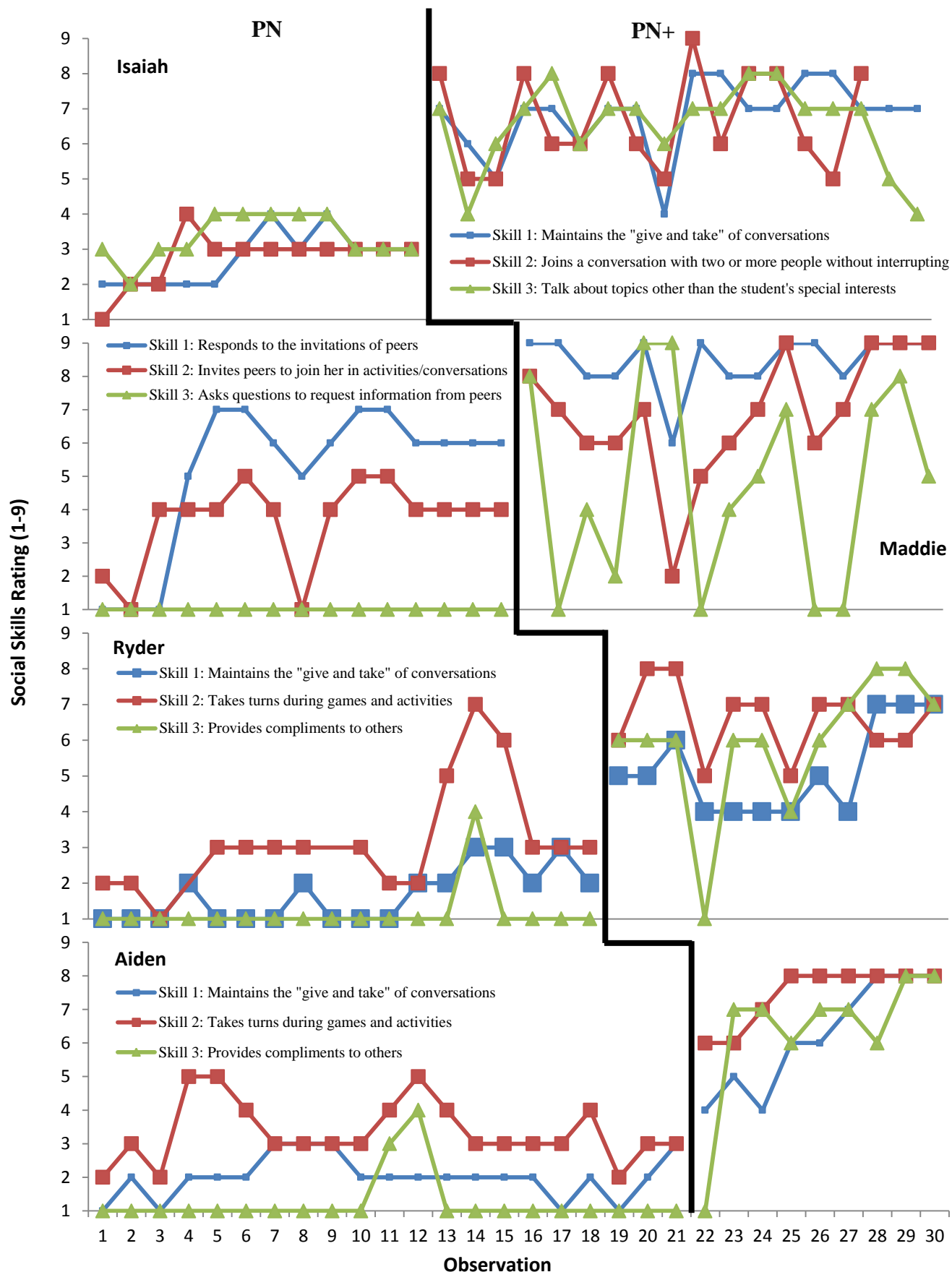


Figure 7. Individual social skills ratings on targeted skills per 10 minute observation

Table 21
Raw Social Skills Data for Each Observation

Participant	Meeting	Observation	Skill 1	Skill 2	Skill 3	Average
Isaiah	1	1	2	1	3	2.00
		2	2	2	2	2.00
		3	2	2	3	2.33
	2	1	2	4	3	3.00
		2	2	3	4	3.00
		3	3	3	4	3.33
	3	1	4	3	4	3.67
		2	4	2	4	3.33
		3	3	3	4	3.33
		4	4	3	4	3.67
	4	1	3	3	3	3.00
		2	3	3	3	3.00
		3	3	3	3	3.00
		4	3	3	3	3.00
	5	1	7	8	7	7.33
		2	6	5	4	5.00
		3	5	5	6	5.33
	6	1	7	8	7	7.33
		2	7	6	8	7.00
		3	7	6	5	6.00
	7	4	6	6	6	6.00
		1	7	8	7	7.33
		2	7	6	7	6.67
		3	4	5	7	5.33
	8	4	4	5	6	5.00
		1	8	9	7	8.00
		2	7	8	7	7.33
		3	8	6	7	7.00
	9	4	7	8	8	7.67
		1	7	8	8	7.67
2		8	7	7	7.33	
3		8	6	7	7.00	
10	4	8	5	7	6.67	
	1	7	8	7	7.33	
	2	6	7	7	6.67	
	3	7	8	5	6.67	
		4	7	8	4	6.33
Maddie	1	1	1	2	1	1.33
		2	1	1	1	1.00
		3	1	4	1	2.00
	2	1	5	4	1	3.33

		2	7	4	1	4.00
		3	7	5	1	4.33
3		1	6	4	1	3.67
		2	5	1	1	2.33
		3	6	4	1	3.67
4		1	7	5	1	4.33
		2	7	5	1	4.33
		3	6	4	1	3.67
5		1	6	4	1	3.67
		2	6	4	1	3.67
		3	6	4	1	3.67
6		1	9	8	8	8.33
		2	9	7	1	5.67
		3	8	6	4	6.00
7		1	8	6	2	5.33
		2	9	7	9	8.33
		3	6	2	9	5.67
8		1	9	5	1	5.00
		2	8	6	4	6.00
		3	8	7	5	6.67
9		1	9	9	7	8.33
		2	9	6	1	5.33
		3	8	7	1	5.33
10		1	9	9	7	8.33
		2	9	9	8	8.67
		3	9	9	5	7.67
Ryder	1	1	1	2	1	1.33
		2	1	2	1	1.33
		3	1	2	1	1.33
		4	1	1	1	1.00
2		1	2	N/A	1	1.50
		2	1	3	1	1.67
		3	1	3	1	1.67
		4	1	3	1	1.67
3		1	1	3	1	1.67
		2	2	3	1	2.00
		3	1	2	1	1.33
		4	1	N/A	1	1.00
4		1	1	3	1	1.67
		2	2	2	1	1.67
		3	1	2	1	1.33
		4	2	2	1	1.67
5		1	2	5	1	2.67
		2	3	6	6	5.00
		3	3	7	4	4.67

		4	3	6	1	3.33
	6	1	2	3	1	2.00
		2	3	3	1	2.33
		3	2	3	1	2.00
		4	2	3	1	2.00
	7	1	5	6	6	5.67
		2	3	8	1	4.00
		3	5	8	6	6.33
		4	6	8	6	6.67
	8	1	4	5	1	3.33
		2	4	7	6	5.67
		3	5	8	6	6.33
		4	4	7	6	5.67
	9	1	4	5	4	4.33
		2	5	7	6	6.00
		3	4	7	7	6.00
	10	1	7	6	8	7.00
		2	6	5	1	4.00
		3	7	6	8	7.00
		4	7	7	7	7.00
Aiden	1	1	1	2	1	1.33
		2	2	3	1	2.00
		3	1	2	1	1.33
	2	1	2	5	1	2.67
		2	2	5	1	2.67
		3	3	5	1	3.00
		4	2	4	1	2.33
	3	1	3	3	1	2.33
		2	3	3	1	2.33
		3	3	3	1	2.33
	4	1	2	3	1	2.00
		2	2	4	3	3.00
		3	3	5	6	4.67
		4	2	5	4	3.67
	5	1	2	4	1	2.33
		2	2	3	1	2.00
		3	2	3	1	2.00
	6	1	2	3	1	2.00
		2	1	3	1	1.67
		3	2	4	1	2.33
	7	1	1	2	1	1.33
		2	2	3	1	2.00
		3	2	3	1	2.00
		4	3	3	1	2.33
	8	1	4	6	1	3.67

	2	5	6	7	6.00
	3	4	7	7	6.00
9	1	6	8	6	6.67
	2	6	8	7	7.00
	3	7	8	7	7.33
10	1	8	8	6	7.33
	2	8	8	5	7.00
	3	8	8	8	8.00
	4	8	8	8	8.00

Note. Rows that are bolded indicate that the observation was randomly dropped and not graphed.

ASSP results. Table 22 describes the ASSP scores for all participants across waves. For each participant, the table includes overall scores; scores on the three subdomains: social reciprocity, social participation/avoidance, and detrimental social behaviors; and scores on each of the three targeted social skills. In the table, the targeted social skills are written as they appear on the ASSP. Isaiah's parents did not complete an ASSP at wave one. For everyone else, both parents and case managers provided this information both before (wave one) and after the intervention (wave two). As mentioned in a previous chapter, higher scores represent more positive skills. Isaiah's case manager's ASSP ratings indicated that his general skills actually deteriorated between wave one and wave two (from an overall score of 147 to 135). Specifically, Isaiah's case manager's ratings led to his social reciprocity score declining from an average of 3.26 (*over often or typically exhibits the positive behaviors*) to 2.86 (*between sometimes or occasionally and often or typically exhibits the positive behaviors*). His social participation/avoidance and detrimental social behaviors subdomains also both decreased slightly but remained within the same general category. According to Isaiah's case manager, Isaiah remained at the same level on all of his target skills. Isaiah's case manager rated all three skills as a 2 (*sometimes or occasionally exhibits the skill or behavior*) both before and after the intervention. Isaiah's parents only returned a wave two packet and their scores on the ASSP around the targeted skills were identical to Isaiah's case manager's scores (all 2's).

According to Maddie's parents, her skills improved over the course of the project (from an overall score of 112 to 121). Specifically, her skills were rated higher in the subdomain of social participation/avoidance (an average of 1.25 to 1.75) and improved in the area of detrimental social behaviors (an average of 2.90 to 3.10). Maddie's case manager rated her as having declining skills over the course of the semester (from an overall score of 131 to 123). However, her scores at wave two were higher than Maddie's parents' scores at either wave. The main drop for Maddie's case manager was in the subdomain of social reciprocity (from an average of 2.83 to 2.61). When it came to the targeted skills, both respondents saw Maddie as improving in her first skill, responds to the invitations of peers to join them in activities. Maddie's parents rated her as going from a 1 (*never or almost never exhibits the behavior*) to a 2 (*sometimes or occasionally exhibits the behavior*). Maddie's case manager rated her as going from a 2 (*sometimes or occasionally exhibits the behavior*) to a 3 (*often or typically exhibits the skill or behavior*). According to the ASSP, neither respondent saw change in the second skill, invites peers to join her in activities. Maddie's parents identified change in the third skill, asks questions to request information about a person, going from a 2 (*sometimes or occasionally exhibits the behavior*) to a 3 (*often or typically exhibits the skill or behavior*). Maddie's case manager left the skill at a rating of 2 at both waves.

Both of Ryder's respondents agreed on the ASSP that his skills had improved over the course of the study. According to Ryder's parents, his overall score went from 106 to 112. According to his case manager, Ryder's overall score went from 101 to 114. Each respondent reported growth in all three subdomains. In particular, Ryder's case manager reported that he improved from an average of 1.65 in social reciprocity to 2.04. When it came to individual skills, Ryder's parents did not report changes specific to the three targeted skills while his case manager

did. Ryder went from a 1 (*never or almost never exhibits the skill*) to a 2 (*sometimes or occasionally exhibits the skill*) for both the first skill (maintains the give and take of conversations) and the third skill (provides compliments to others) according to his case manager. He improved from a 2 (*sometimes or occasionally exhibits the skill*) to a 3 (*often or typically exhibits the skill or behavior*) for his second skill, takes turns during games and activities.

Aiden's parents and case manager agreed that his skills improved over the course of the study. Overall ASSP scores improved from 103 to 114 on Aiden's parents' ASSP and from 111 to 139 on Aiden's case manager's ASSP. All subdomains across both participants showed improvement. Of particular relevance, Aiden's score on the social reciprocity subdomain increased from an average of 1.96 to 2.78 on Aiden's case manager's ASSP. Neither respondent indicated improvement on Aiden's first skill, maintains the give and take of conversations, leaving this at a score of 2 (*sometimes or occasionally exhibits the skill*) across all waves. Aiden's case manager reported a large jump for the second skill, takes turns during games and activities, going from a 2 (*sometimes or occasionally exhibits the skill*) to a 4 (*very often or always exhibits the skill*). For his third skill, Aiden's parents did not see improvements in providing compliments to others. However, his case manager did see improvement from a 1 (*never or almost never exhibits the skill*) to a 2 (*sometimes or occasionally exhibits the skill*).

Table 22

ASSP Scores across Waves

	Parent		Case Manager	
	Wave 1	Wave 2	Wave 1	Wave 2
Isaiah				
Overall Score	--	125	147	135
Social Reciprocity	--	61 (2.65)	75 (3.26)	66 (2.86)
Social Participation/Avoidance	--	34 (2.83)	42 (3.50)	40 (3.33)
Detrimental Social Behaviors	--	22 (2.20)	17 (1.70)	16 (1.60)
Skill 1: Maintains the “give and take” of conversations	--	2	2	2
Skill 2: Joins a conversation with two or more people without interrupting	--	2	2	2
Skill 3: Talks about or acknowledges the interests of others	--	2	2	2
Maddie				
Overall Score	112	121	131	123
Social Reciprocity	58 (2.52)	58 (2.52)	65 (2.83)	60 (2.61)
Social Participation/Avoidance	15 (1.25)	21 (1.75)	24 (2.00)	24 (2.00)
Detrimental Social Behaviors	29 (2.90)	31 (3.10)	31 (3.10)	30 (3.00)
Skill 1: Responds to the invitations of peers to join them in activities	1	2	2	3
Skill 2: Invites peers to join her in activities	1	1	2	2
Skill 3: Asks questions to request information about a person	2	3	2	2
Ryder				
Overall Score	106	112	101	114
Social Reciprocity	43 (1.87)	46 (2.00)	38 (1.65)	47 (2.04)
Social Participation/Avoidance	25 (2.08)	26 (2.17)	21 (1.75)	25 (2.08)
Detrimental Social Behaviors	29 (2.9)	31 (3.1)	32 (3.2)	31 (3.1)
Skill 1: Maintains the “give and take” of conversations	2	2	1	2
Skill 2: Takes turns during games and activities	2	2	2	3
Skill 3: Provides compliments to others	1	1	1	2
Aiden				
Overall Score	103	114	111	139
Social Reciprocity	43 (1.87)	48 (2.09)	45 (1.96)	64 (2.78)
Social Participation/Avoidance	23 (1.92)	25 (2.08)	25 (2.08)	29 (2.42)
Detrimental Social Behaviors	27 (2.70)	31 (3.10)	29 (2.90)	33 (3.3)
Skill 1: Maintains the “give and take” of conversations	2	2	2	2
Skill 2: Takes turns during games and activities	2	2	2	4
Skill 3: Provides compliments to others	1	1	1	2

Note. For subdomains: score (average); for individual skills: item score on 1-4 scale

Interactive behaviors data. Figure 8 below displays the total interactive behaviors per 10 minute observation period. Data points with asterisks (*) indicate that the data was scaled to fit a 10 minute observation period since the observation was less than 10 minutes. Isaiah displayed an average of 33.50 (range: 17.00-58.00) interactive behaviors per 10 minute period during the peer network only/ baseline condition. This increased to an average of 46.20 (range: 17.00-70.00) interactive behaviors per 10 minute period during the peer network plus/ intervention condition. This represents an average gain of 12.70 interactive behaviors per 10 minute period between baseline and intervention conditions. Maddie had an average of 31.29 (range: 4.00-89.00) interactive behaviors per 10 minute period during the baseline condition and an average of 41.36 (range: 17.33-101.00) interactive behaviors during the peer network plus/ intervention condition. This represents an average gain of 10.07 interactive behaviors per 10 minute period. During the baseline condition, Ryder had an average of 12.61 (range: 1.00-43.00) interactive behaviors per 10 minute period. This increased to an average of 52.17 (range: 10.00-90.00) during the peer network plus/intervention phase, representing an average gain of 39.56 interactive behaviors per 10 minute period. Aiden had an average of 30.03 (range: 0.00-96.00) interactive behaviors during baseline and an average of 76.73 (range: 33.00-115.00) during the peer network plus/intervention phase. This indicates an average gain of 46.70 interactive behaviors per 10 minute period.

For Figure 8 (total interactions), 22 data points would need to be removed in order for there to be no overlapping data for total interactions. Since there are 120 total data points on Figure 8, PAND is 81.67%. This indicates that there is 31.67% less overlapping data than would be expected by chance. This amount of non-overlapping data indicates that there was a marked difference between baseline and the peer network plus/intervention phase.

When the network meetings are looked at as whole units (combining the three 10-minute observation data points), similar trends are found. At baseline, Isaiah had an average of 100.5 total interactions per meeting (individual meetings: 101, 88, 109, and 104). Isaiah's average number of total interactions per meeting during intervention was 139 (individual meetings: 133, 133, 121, 170, 137, and 138). Maddie had a baseline average of 94 total interactions (individual meetings: 25, 200, 74, 107, and 64). During intervention, there were 124 average total interactions at Maddie's network meetings (individual meetings: 157, 66, 129, 111, and 157). Ryder's average number of total interactions at baseline was 34 (individual meetings: 16, 27, 43, 39, 39, and 63). At intervention, this average increased to 157 total interactions per meeting (individual meetings: 138, 79, 242, and 167). Aiden's average number of total interactions at baseline was 90 (individual meetings: 13, 242, 165, 71, 66, 42, and 32). During intervention, Aiden averaged a total of 230 total interactions per network meeting (individual meetings: 159, 290, and 242).

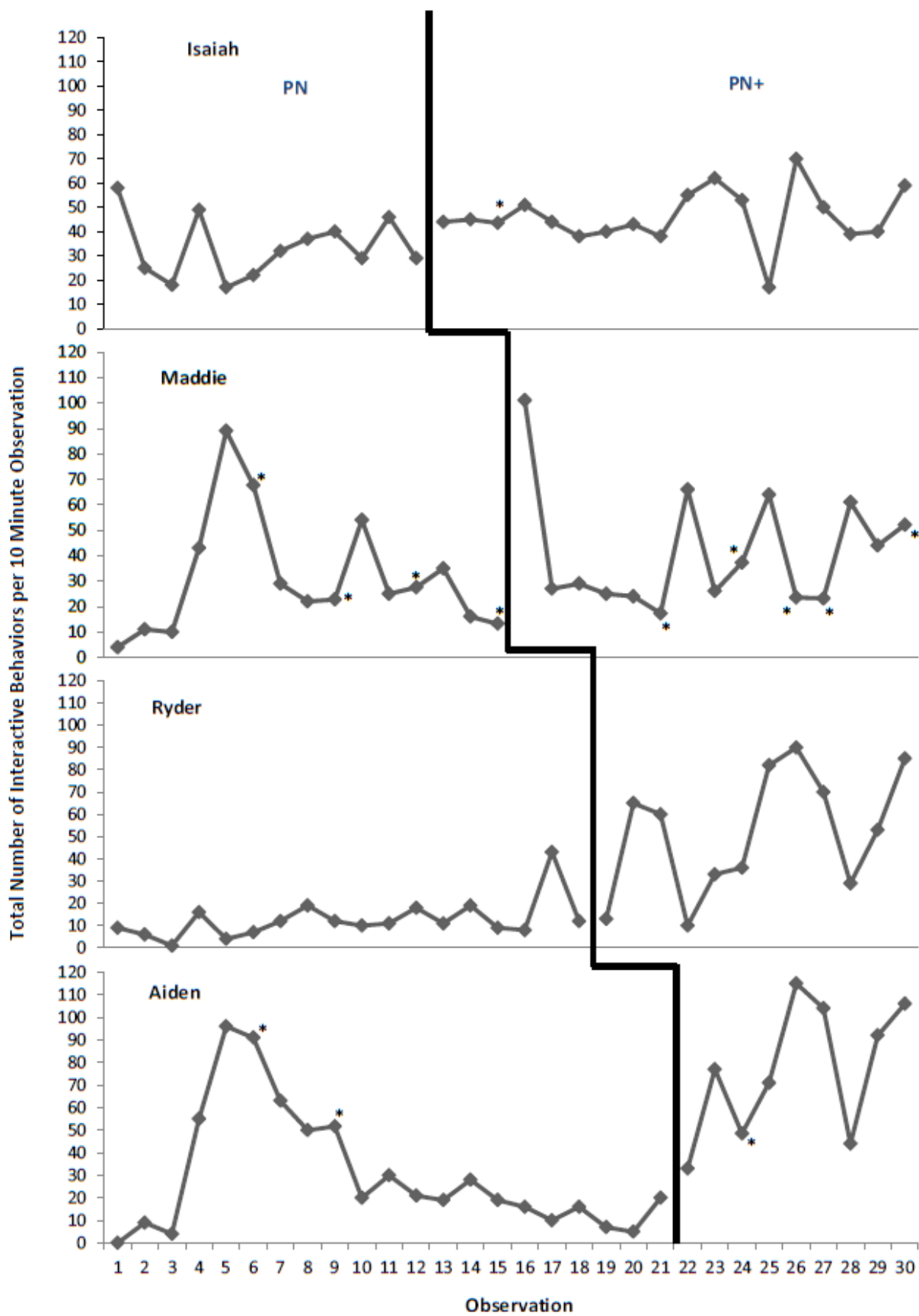


Figure 8. Total number of interactive behaviors per 10 minute observation.

Table 23 below displays the independent coders' scores on the Maggin et al. (2013) protocol, based on the WWC Standards, for the total interactions graphs. As with the social skills graphs, items on which the two independent coders disagreed were defaulted to the lower score (and are marked with an asterisk). Overall, both raters found a treatment effect (see *treatment effects demonstrated* where 1 indicates that the treatment effect was demonstrated and a 0 indicates that the treatment effect was not demonstrated) for three of the four participants (Isaiah, Ryder, and Aiden) but did not find a treatment effect for Maddie. Thus, both raters scored the overall effectiveness as a 1, indicating *Moderate Overall Evidence* for this dependent variable.

Table 23

Visual analysis scores for the total interactions graphs

	Isaiah	Maddie	Ryder	Aiden
Baseline				
Change	1	1	1	1
Predictable	1	1	1	1
Consistent Variability	1	0	0*	0*
Trend	1	1	1	1
Within Phase Analysis				
Sufficient Data Points	2	2	2	2
Predictable	1	1	1	1
Consistent Variability	1	0	1	1
Trend	1	1	1	1
Between Phase Basic Effect				
Basic Effects	0*	0	1	1
Level – Immediacy	1	0*	1	1
Trend – Immediacy	0	0	1	1
Level – Change	1	0	1	1
Trend – Change	0	0	1	1
Variability – Change	0	0	1	1
Low Overlap	0	0	1	0
Similar Phases	-	-	-	-
Between Phase				
Opportunity to Demonstrate Effect	1	1	1	1
Treatment Effects Demonstrated	1	0	1	1
Overall Effectiveness				
Data Points Per Phase	2	2	2	2
Demonstrations of Treatment Effect	2	2	2	2
Ratio	1	1	1	1
Overall Evidence	1 = <i>Moderate Overall Evidence</i>			

Note. Items marked with * indicate that the raters disagreed on the code. When there was a disagreement, the lower code was selected.

In addition to looking at the total number of interactions, the primary investigator also examined the target students' contributions (i.e., the students' initiations and responses) to see if there were changes in the students' contributions and not simply an increase in peers' initiations and responses. Figure 9 displays the students' contributions across the phases. At baseline, Isaiah made an average of 17.17 (range: 8.00-30.00) contributions in each 10 minute period. During the peer network plus, intervention phase, Isaiah made an average of 22.98 (range: 7.00-36.00) contributions in each 10 minute period. This represents a gain of 5.81 contributions between the baseline and intervention phases. Maddie made an average of 14.37 (range: 2.00-45.00) contributions during each 10 minute baseline period. During the peer network plus phase, she made an average of 18.98 (range: 8.00-49.00) contributions. Maddie had an average gain of 4.61 student interactive behaviors between the peer network only and peer network plus conditions. Ryder made an average of 4.17 (range: 0.00-16.00) contributions during the 10 minute baseline periods. During the peer network plus intervention phase, Ryder made an average of 17.50 (range: 6.00-31.00) contributions each period, indicating an average gain of 13.33 student interactive behaviors. These student interactive behaviors show increasing variability during the intervention phase. Aiden made an average of 9.22 (range: 0.00-31.97) interactive behaviors during the peer network only baseline condition. This increased to an average of 24.91 (range: 7.00-44.00) student contributions during the peer network plus intervention condition. Aiden gained an average of 15.69 student contributions between baseline and intervention. There is an increasing trend displayed during the intervention phase.

For Figure 9 (student contributions), 23 data points would need to be removed in order for there to be no overlapping data for the student contributions. Since there are 120 total data points on Figure 9, PAND is 80.83%. This indicates that there is 30.83% less overlapping data

than would be expected by chance. This amount of non-overlapping data indicates that there was a marked difference between baseline and the peer network plus/intervention phase.

Combining the data points to get scores for each individual meeting leads to a baseline average of 52 student contributions per each network meeting for Isaiah during baseline (individual meetings: 52, 43, 55, and 56). During intervention, Isaiah averaged 69 contributions per meeting (individual meetings: 71, 70, 54, 76, 69, and 74). Maddie's contributions during baseline averaged 43 (individual meetings: 13, 102, 32, 43, and 26). Her average number of contributions during intervention rose to 57 (individual meetings: 77, 31, 59, 50, and 67). Ryder's baseline average of 13 contributions (individual meetings: 11, 9, 13, 10, 8, and 24) rose to an average of 53 (individual meetings: 57, 22, 75, and 56) during intervention. Aiden's baseline level of student contributions averaged 28 (individual meetings: 6, 79, 57, 15, 13, 7, and 17). During intervention, Aiden's average number of contributions rose to 75 per network meeting (individual meetings: 49, 74, and 101).

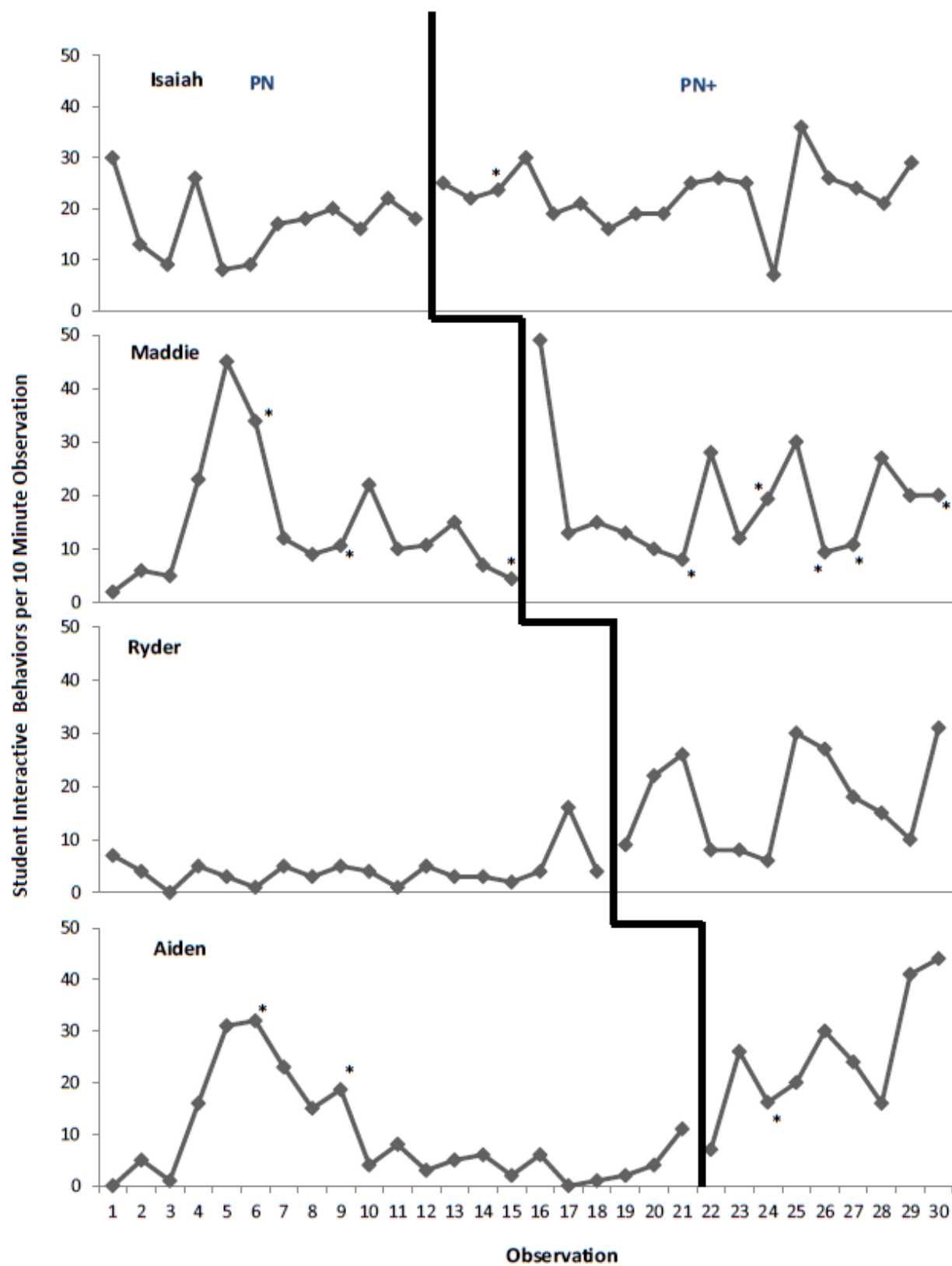


Figure 9. Student contributions (initiations and responses) per 10 minute observation.

To check whether increases in student contributions were due solely to responding more because peers were initiating more, the primary researcher also examined the target student's initiations. This data is displayed in Figure 10. At baseline, Isaiah made an average of 5.83 (range: 4.00-14.00) initiations per 10 minute period. This increased to an average of 8.41 (range: 4.00-13.00) initiations during the peer network plus intervention with increased variability. Isaiah gained an average of 2.58 initiations between the baseline and intervention phases. Maddie made an average of 3.82 (range: 1.00-9.00) initiations toward her peer network members during the baseline phase. During the intervention peer network plus phase, she made an average of 5.54 (range: 0.00-10.00) initiations, which represents a gain of 1.72 initiations per 10 minute period. Ryder made an average of 1.83 (range: 0.00-6.00) initiations during the baseline, peer network only, condition. During the peer network plus intervention phase, Ryder made an average of 5.08 (range: 1.00-17.00) initiations, an average gain of 3.25 initiations per 10 minute period between baseline and intervention. During the peer network only condition, Aiden made an average of 1.65 (range: 0.00-6.00) initiations. This increased to an average of 8.60 (range: 1.00-18.00) initiations during the peer network plus intervention. On average, Aiden gained 6.95 initiations per 10 minute period between the baseline and intervention conditions. Data points were much more variable during the intervention condition.

For Figure 10 (student initiations), 30 data points would need to be removed in order for there to be no overlapping data for the student initiations. Since there are 120 total data points on Figure 10, PAND is 75.00%. This indicates that there is 25.00% less overlapping data than would be expected by chance, meaning that student initiations were similar across phases but there were differences that can be attributed to the social skills component.

For the network meetings as a whole, Isaiah averaged 18 initiations per meeting (individual meetings: 14, 18, 15, and 23). During intervention, Isaiah demonstrated an average of 25 initiations per meeting (individual meetings: 28, 26, 20, 25, 22, and 30). Maddie made an average of 11 initiations during baseline (individual meetings: 11, 17, 9, 14, and 6). Following the introduction of the social skills training component, Maddie displayed an average of 17 initiations per network meeting (individual meetings: 21, 9, 11, 17, and 24). During baseline, Ryder initiated an average of 6 times per network meeting (individual meetings: 10, 4, 8, 5, 2, and 4). Ryder's average number of student initiations during intervention was 15 (individual meetings: 38, 8, 5, and 10). Finally, Aiden displayed an average of 5 student initiations at baseline (individual meetings: 5, 3, 5, 5, 2, 2, and 12). This average rose to 26 during intervention (individual meetings: 17, 36, and 24).

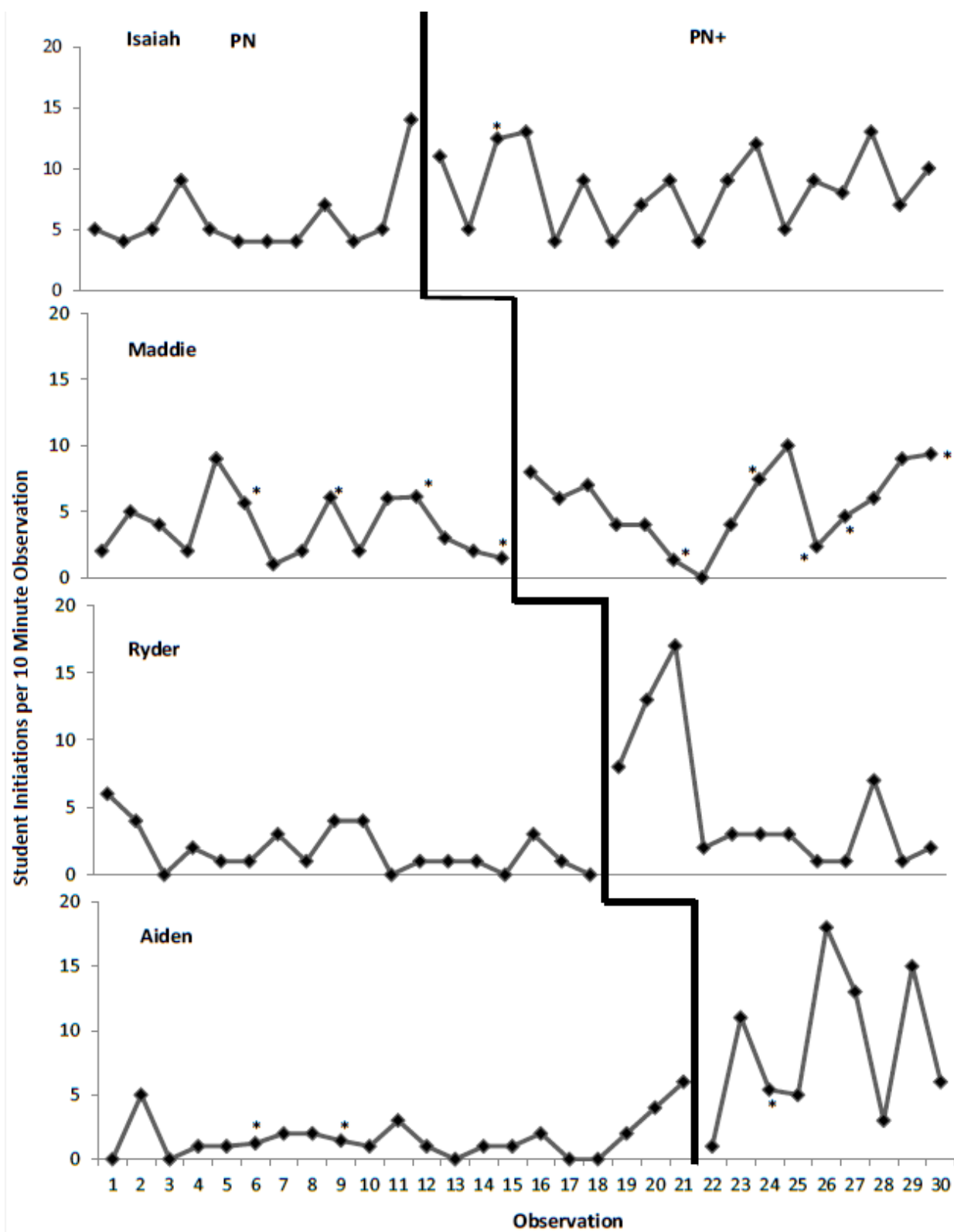


Figure 10. Student initiations per 10 minute observation.

Engagement. Although not primarily addressed in Question 1, the primary investigator also examined the students' engagement level in meetings across the study. Figure 11 displays the participants' engagement during peer network meetings. In general, engagement was more variable during baseline when the participants were in the peer network only condition. During the peer network plus phases, engagement was consistently high across participants. During baseline, Isaiah was engaged in the network meetings for an average of 94.82% (range: 63.80% to 100%) of each interval. Isaiah's engagement increased to an average of 98.05% (range: 83.20% to 100%) of each interval during the peer network plus intervention. Isaiah was engaged, on average, 3.23% more during each interval during the peer network plus meetings than he was during the peer network only meetings. Maddie was engaged during an average of 94.36% of each of her baseline intervals (range: 55.50% to 100%). At intervention, she was engaged during 100% of each of her observations. This is an average increase of 5.64% engagement in each 10 minute period. Ryder's engagement was extremely variable during the peer network only condition, ranging from 18.00% to 100% and averaging 70.55%. His engagement during the peer network plus phase was much less variable, ranging from 93.80% to 100% and averaging 99.23%. This represents an average gain of 28.68% engagement per 10 minute period. Aiden's engagement levels at baseline were also extremely variable, ranging from 15.50% to 100% of the period engaged and averaging 70.93%. His intervention engagement levels were much more stable, ranging from 97.10% to 100% and averaging 99.68%.

For Figure 11, 34 data points would need to be removed in order for there to be no overlapping data for engagement. Since there are 120 total data points on Figure 11, PAND is 71.67%. This indicates that there is 21.67% less overlapping data than would be expected by chance. In terms of overlapping data, this indicates that there were similar engagement

percentages across phases but that differences were present and can be attributed to the social skills training component.

Engagement was also examined across the entire network meeting. During baseline, Isaiah was engaged in each network meeting for an average of 94.82% of the time (individual meetings: 99.67%, 97.39%, 98.94%, and 83.28%). This rose to an average of 97.95% of each network meeting during intervention (individual meetings: 91.20%, 100.00%, 96.50%, 100.00%, 100.00%, and 100.00%). Maddie was engaged for an average of 93.47% of each of her baseline network meetings (individual meetings: 100.00%, 82.42%, 100.00%, 93.09%, and 91.85%). During intervention, Maddie was always engaged for 100% of the network meetings. Ryder's engagement at baseline averaged 70.55% (individual meetings: 67.61%, 75.78%, 49.78%, 76.44%, 96.39%, and 57.28%). This average level of engagement rose to an average of 99.24% during intervention (individual meetings: 100.00%, 99.50%, 97.44%, and 100.00%). During baseline, Aiden was engaged for 71.25% of network meetings, on average (individual meetings: 61.17%, 100.00%, 85.97%, 49.22%, 34.39%, 70.22%, and 97.78%). Aiden was engaged in his intervention network meetings 99.74% of the time, on average (individual meetings: 99.21%, 100.00%, and 100.00%).

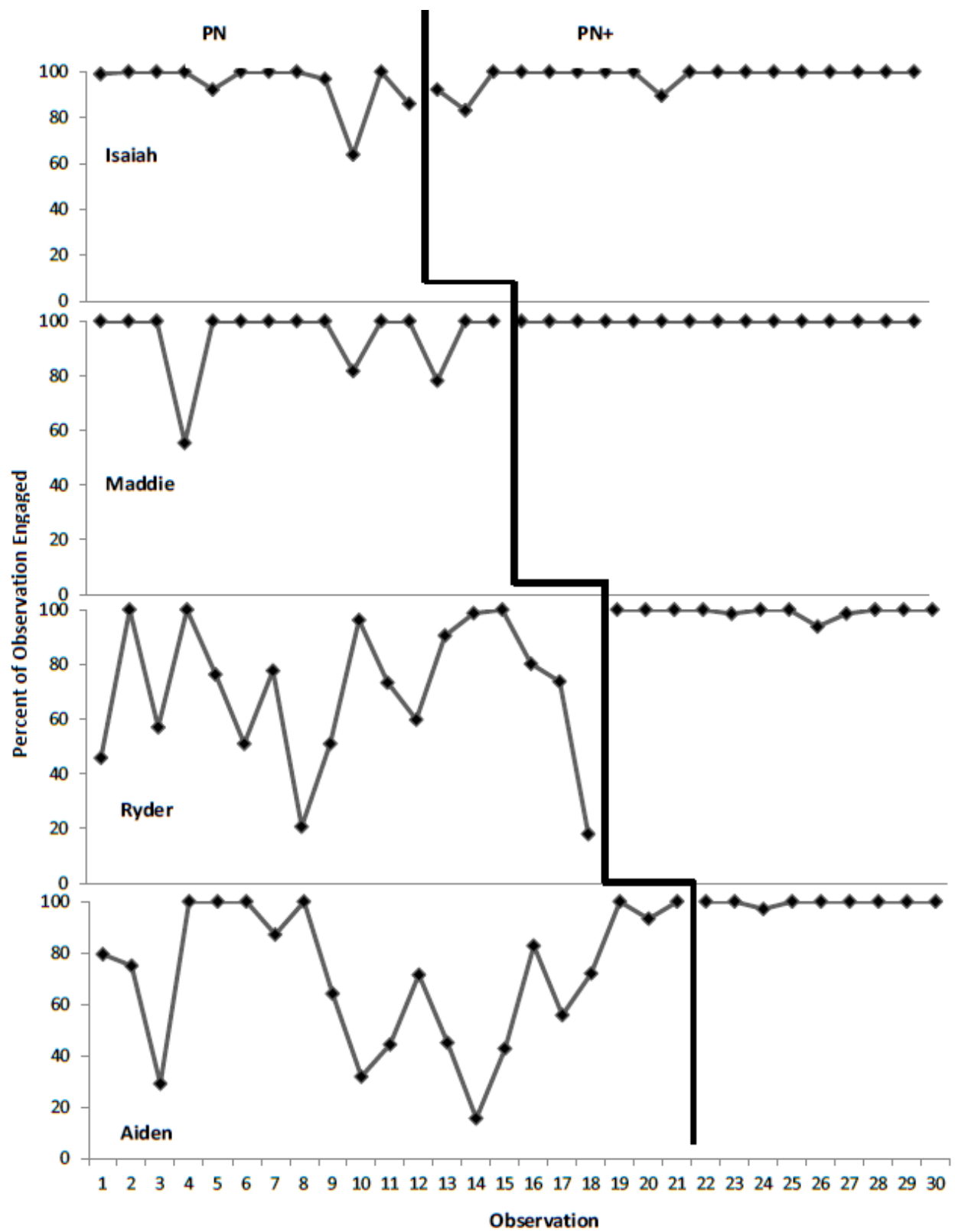


Figure 11. Percentage of time engaged per 10 minute period.

Proximity to peer network members. Although not a primary measure addressed in Question 1, the primary investigator examined the students' proximity to peer network members throughout the study. This data is displayed in Figure 12. During the peer network only meetings, Isaiah was in proximity to his peer network members, on average, 89.21% (range: 12.00% to 100%) of each interval. On average, Isaiah was in proximity to his peer network members during 98.69% (range: 85.20% to 100%) of each interval during intervention. This represents an average increase in proximity of 9.48%. Maddie was in proximity to her peer network members an average of 93.69% (range: 57.30% to 100%) of each of her 10 minute observations during the peer network only baseline condition. During the intervention phase, Maddie was in proximity to her peer network members, on average, 94.71% (range: 48.70% to 100%) of each 10 minute observation. This indicates a slight increase of 1.02% in the percentage of time Maddie was in proximity to her peer network members between baseline and intervention. Ryder's percentage of time in proximity to peer network members was 95.53% (range: 71.20% to 100%) of the period, on average, during the baseline condition. At intervention, he was in proximity to peer network members slightly more, with an average of 97.76% (range: 87.30% to 100%). This is an increase of an average of 2.23% per 10 minute period. Aiden's proximity to peer network members was variable during his baseline condition, ranging from 20.50% of one period to 100% of others and averaging 76.44%. There was a decreasing trend apparent before the social skills training component began. During the peer network plus condition, Aiden's proximity to peer network members was more stable, ranging from 81.30% to 100% and averaging 97.03%. This indicates an increase of an average of 20.59% per 10 minute period.

For Figure 12, 44 data points would need to be removed in order for there to be no overlapping data for proximity to peer network members. PAND is 63.33%. This indicates that there is 13.33% less overlapping data than would be expected by chance and that data point ranges between baseline and intervention were similar.

Proximity to peer network members was also examined across network meetings. On average, Isaiah was in proximity to his peer network members 89.21% of each of his baseline network meetings (individual meetings: 99.44%, 70.67%, 98.89%, and 87.83%). He was in proximity to his peer network members an average of 98.61% of the time during intervention (individual meetings: 92.98%, 100.00%, 98.67%, 100.00%, 100.00%, and 100.00%). Maddie was in proximity to her peer network members an average of 93.13% of each baseline meeting (individual meetings: 100.00%, 80.65%, 100.00%, 93.22%, and 91.79%). During intervention, Maddie was in proximity to her peer network members an average of 95.22% of each network meeting (individual meetings: 100.00%, 95.82%, 99.69%, 80.57%, and 100.00%). Ryder was in proximity to his peer network members an average of 95.53% of each meeting during baseline (individual meetings: 90.39%, 100.00%, 91.61%, 100.00%, 91.33%, and 99.83%). During intervention, Ryder was in proximity to his peer network members an average of 97.76% of each meeting (individual meetings: 99.61%, 97.28%, 94.17%, and 100.00%). Aiden was in proximity to his peer network members an average of 76.83% of meetings during baseline (individual meetings: 100.00%, 100.00%, 90.73%, 81.56%, 51.89%, 58.56%, and 55.06%). Aiden was in proximity to his peer network members an average of 97.43% of the time during intervention (individual meetings: 94.95%, 97.56%, and 99.78%).

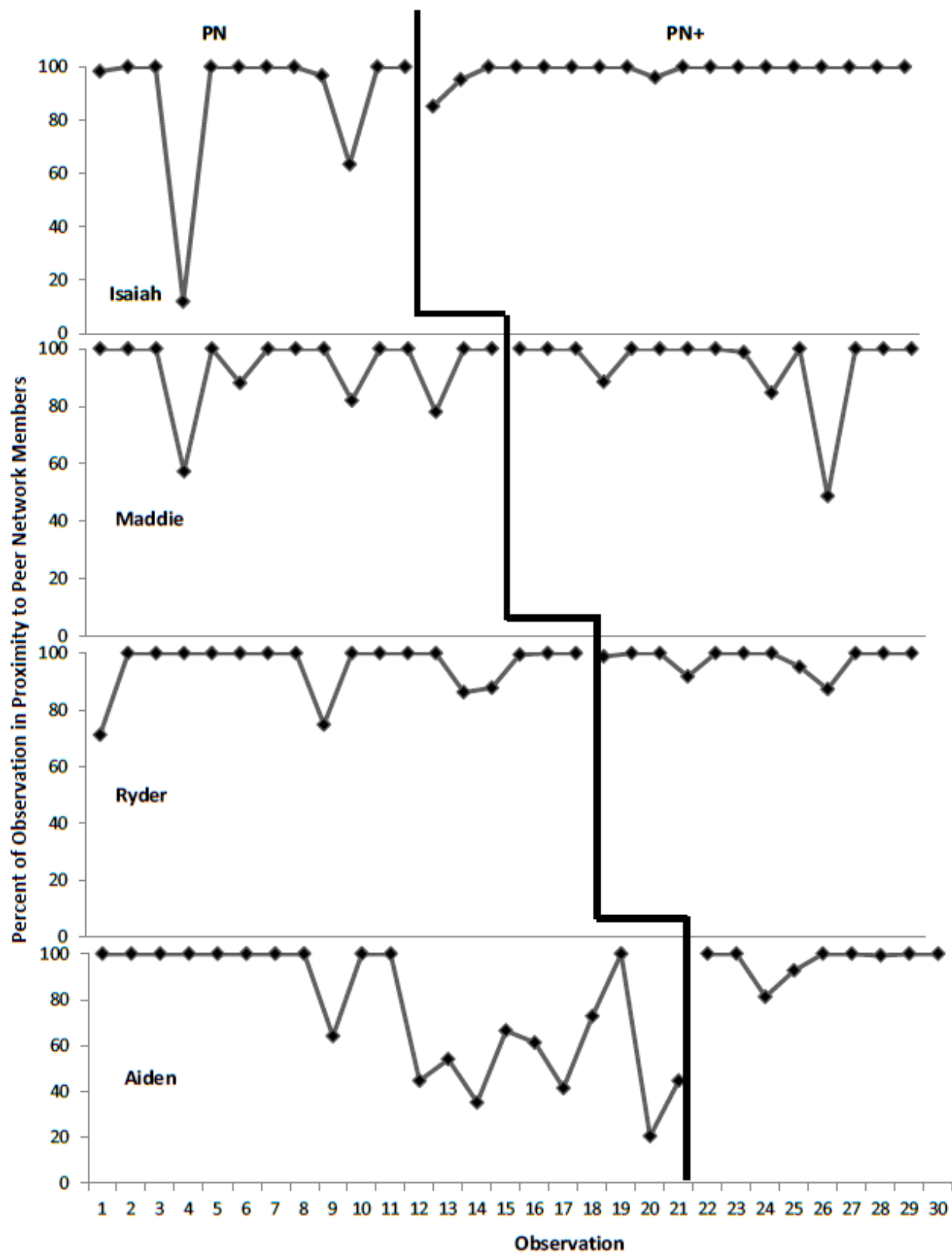


Figure 12. Percentage of 10 minute observations in proximity to peer network members.

Proximity to adults. The primary investigator also examined the participants' proximity to adults throughout the peer network meetings. Percentage of each 10 minute period spent in proximity to adults is displayed in Figure 13. Proximity to adults was extremely variable across all phases. Isaiah was in proximity to adults for an average of 91.48% (range: 37.20% to 100%) of each period at baseline. During the peer network plus meetings, he was in proximity to adults on average 79.45% (range: 0% to 100%) of each period. This was a decrease of 12.03%, on average. Maddie was in proximity to adults for an average of 86.35% (range: 14.20% to 100%) of each period during the only peer network baseline phase. During intervention, she was in proximity to adults for an average of 57.51% (range: 0% to 100%) of each period. This was an average decrease of 28.84% per period. Ryder was in proximity to adults for an average of 73.15% (range: 0% to 100%) of each of his baseline observation periods. This decreased to an average of 48.77% (range: 0% to 100%) during intervention. Ryder's proximity to adults decreased, on average, 24.38% after the social skills training component was added. Aiden was in proximity to adults an average of 49.34% (range: 0% to 100%) of each baseline period. This decreased to an average of 33.26% (range: 0% to 100%) of each period in the peer network plus/ intervention phase. This indicates that there was an average decrease in time spent in proximity to adults of 16.08%.

For Figure 13, 37 data points would need to be removed in order for there to be no overlapping data for proximity to adults. This leads to a PAND score of 69.17%. This indicates that there is 19.17% less overlapping data than would be expected by chance. In terms of overlapping data, this indicates that there were similar proximity percentages across phases but that differences were present and can be attributed to the social skills training component.

When data are collapsed across meetings, Isaiah was in proximity to adults an average of 91.47% of each of his baseline meetings (individual meetings: 95.11%, 99.06%, 98.89%, and 72.83%). This declined to an average of 79.43% of each meeting during intervention (individual meetings: 98.28%, 91.56%, 93.00%, 0.00%, 100.00%, and 93.72%). During baseline, Maddie was in proximity to an adult for an average of 84.64% of each network meeting (individual meetings: 100.00%, 76.23%, 67.71%, 92.27%, and 87.00%). Maddie's average time in proximity to adults declined to an average of 57.03% of each network meeting during intervention (individual meetings: 78.33%, 23.21%, 67.19%, 74.57%, and 41.84%). At baseline, Ryder was in proximity to adults on average 73.15% of each meeting (individual meetings: 100.00%, 93.61%, 87.72%, 81.28%, 41.72%, and 34.61%). Ryder spent an average of 48.76% of each intervention network meeting in proximity to adults (individual meetings: 99.56%, 28.83%, 0.00%, and 66.67%). During baseline, Aiden was in proximity to adults an average of 50.22% of each network meeting (100.00%, 71.09%, 17.68%, 28.89%, 26.56%, 63.17%, and 44.17%). During his intervention meetings, he was in proximity to adults an average of 35.35% of each network meeting (72.95%, 0.00%, and 33.11%).

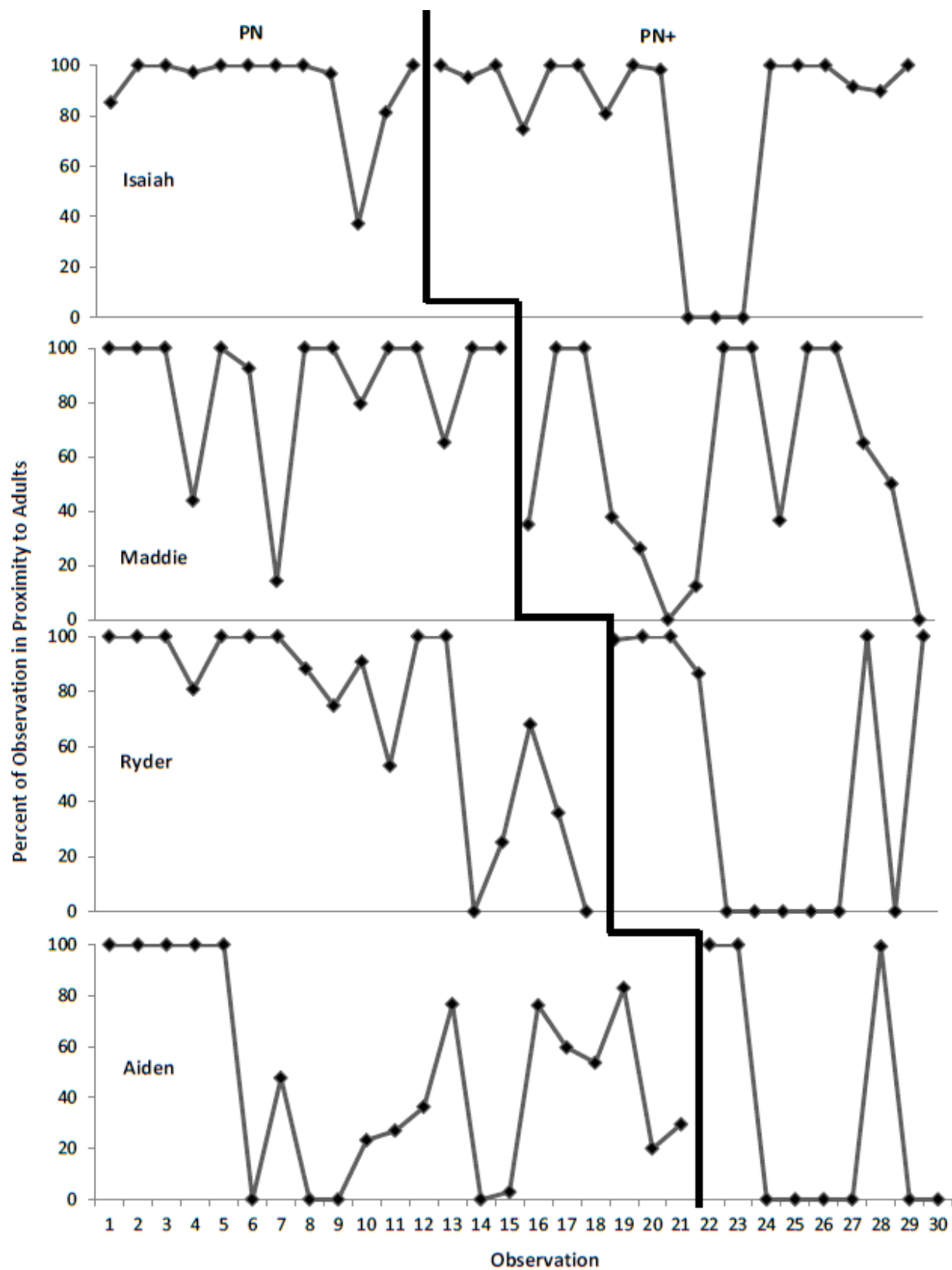


Figure 13. Percentage of 10 minute observations in proximity to adults.

SSIS results. To answer the third portion of Question 1, SSIS scores from wave one and wave two were compared for each participant (see Table 24 below). As can be seen, there were no significant changes (i.e., changes in levels or changes of a standard deviation) seen for any participant according to parent reports on the SSIS. There were changes in levels seen for Isaiah, Ryder, and Aiden according to the case manager SSIS reports. However, none of these changes involved a difference of more than a standard deviation (15 points). Importantly, all participants remained in the *Above Average* range on the Autism Subscale, as rated by case managers. Isaiah's score on the Social Skills Scale improved by 12 standard points, from a standard score of 83 to 95, moving him from the *Below Average* range to the *Average* range. Isaiah's score on the Problem Behaviors Scale also increased from a score of 124 to 131, moving him from the *Above Average* to *Well-above Average* range. Ryder's Social Skills Scale improved by 4 points from a standard score of 69 to 73, moving Ryder from the *Well-below Average* level to the *Below Average* level. Aiden's Social Skills Scale also showed an improvement. His Social Skills Scale went from a score of 76 (*Below Average*) to a score of 86 which is in the *Average* range. Ryder's score on the Problem Behaviors Scale decreased by 12 points from a score of 122 (*Above Average*) to a score of 110 (*Average*).

Table 24

Participant SSIS Parent and Case Manager Ratings across Waves

Student	Social Skills Scale			Problem Behaviors Scale			Autism Subscale	
	SS	Percentile	Level	SS	Percentile	Level	Raw	Level
Parent								
Isaiah	84(--)	14(--)	Below Average	109(--)	78(--)	Average	12(--)	Average
Maddie	67(68)	3(3)	Well-below Average	117(125)	85(93)	Above Average	19(20)	Above Average
Ryder	80(79)	11(10)	Below Average	110(107)	80(75)	Average	21(21)	Above Average
Aiden	79(75)	10(8)	Below Average	107(109)	75(78)	Average	21(21)	Above Average
Case Manager								
Isaiah	95(83)	37(13)	Average^a	131(124)	96(92)	Well-above Average^d	15(20)	Above Average
Maddie	85(88)	20(25)	Average	130(128)	94(93)	Above Average	18(18)	Above Average
Ryder	73(69)	5(3)	Below Average^b	129(128)	96(94)	Above Average	27(24)	Above Average
Aiden	86(76)	17(8)	Average^c	110(122)	74(88)	Average^e	17(23)	Above Average

Note. Isaiah's parents did not return the pre-intervention packet, which included the SSIS.

Standard scores and percentiles are presented as wave two (wave one). Items that are bolded indicate a change of level between wave one and wave two. Levels listed are for wave two.

^aWas *Below Average* at wave one. ^bWas *Well-below Average* at wave one. ^cWas *Below Average* at wave one. ^dWas *Above Average* at wave one. ^eWas *Above Average* at wave one.

Vineland-II results. Vineland-II scores were also compared between wave one and wave two (see Table 25). Only case managers completed the Vineland-II. All Communication standard scores remained at the same level at wave two as in wave one. Aiden's Socialization scale score improved by 4 points from a 68 to a 72, moving him from the *Low* to *Moderately Low* level. No other participants had appreciable changes (i.e., changing levels or a standard deviation change) on the Socialization subscale. On the Adaptive Behavior Composite (ABC), Maddie lost 2 points from a standard score of 71 to 69, which moved her from the *Moderately Low* level to the *Low* level. Aiden's ABC increased by 5 points from a standard score of 67 to

72, moving him from the *Low* level to the *Moderately Low* level. There were no significant changes on the ABC for Isaiah or Ryder.

Table 25

Participant Vineland-II Case Manager Ratings across Waves

Student	Communication			Socialization			Adaptive Behavior Comp.		
	SS	Percentile	Level	SS	Percentile	Level	SS	Percentile	Level
Isaiah	78(82)	7(12)	Mod Low	74(77)	4(6)	Mod Low	77(79)	6(8)	Mod Low
Maddie	67(70)	1(2)	Low	74(78)	4(7)	Mod Low	69(71)	2(3)	Low^b
Ryder	67(60)	1(<1)	Low	63(59)	1(<1)	Low	66(63)	1(1)	Low
Aiden	70(67)	2(1)	Low	72(68)	3(2)	Mod Low^a	72(67)	3(1)	Mod Low^c

Note. Standard scores and percentiles are presented as wave two (wave one). Items that are bolded indicate a change of level between wave one and wave two. Levels listed are for wave two. ^aWas *Low* at wave one. ^bWas *Moderately Low* at wave one. ^cWas *Low* at wave one.

Goals. At wave one, parents and case managers were asked to select the three main goals they had for their child/student during the semester. As mentioned in a previous chapter, at wave two, respondents were asked to select how much progress the individual made on each of the goals. Options were *a lot of progress*, *a little progress*, *no progress*, and *some regression*. As can be seen in Table 26, no participants were rated as regressing on any of the goals. Only Isaiah's case manager's goal of decreasing challenging behaviors was rated as *no progress*. Every other goal was either rated as having *a little progress* or *a lot of progress* over the course of the semester.

Table 26

Participant Progress on Goals as Reported by Case Managers and Parents

Participant	Respondent	Goal	Progress
Isaiah	Case Manager	Improve social and communication skills	A little progress
		Improve self-advocacy and self-determination skills	A lot of progress
		Decrease challenging behaviors	No progress
Maddie	Parent	Improve social and communication skills	A lot of progress
		Improve functional or life skills	A little progress
		Improve vocational or career-related skills	A little progress
	Case Manager	Improve social and communication skills	A little progress
		Improve self-advocacy and self-determination skills	A little progress
		Improve vocational or career-related skills	A lot of progress
Ryder	Parent	Improve social and communication skills	A little progress
		Improve functional or life skills	A little progress
		Improve vocational or career-related skills	A little progress
	Case Manager	Improve social and communication skills	A lot of progress
		Improve self-advocacy and self-determination skills	A little progress
		Improve vocational or career-related skills	A little progress
Aiden	Parent	Improve social and communication skills	A little progress
		Improve functional or life skills	A little progress
		Improve vocational or career-related skills	A little progress
	Case Manager	Improve academic performance in the area of written language for functional applications	A little progress
		Improve social and communication skills	A lot of progress
		Improve vocational or career-related skills	A lot of progress

Note. Isaiah's parents did not complete a packet at wave one so there were no goals from the parent perspective.

Social contacts and friendships. At wave one and wave two, parents and case managers listed names of social contacts and friendships of the participants. Table 27 below lists the number of social contacts and friendships gained (new names listed on wave two that weren't on wave one) and lost (names listed on wave one that were not listed on wave two). All participants gained more social contacts and friendships than they lost, indicating that all participants expanded their social networks over the course of the semester.

According to Isaiah's case manager, between wave one and wave two, Isaiah gained 25 friends and social contacts with peers without disabilities. However, he also lost 20 friends and social contacts with peers without disabilities, leaving a net gain of five new names. Both Maddie's parent and case manager listed new names at wave two. According to Maddie's parent, she gained one social contact and friendship with disabilities and three without disabilities, while losing only one social contact and friendship without a disability. On the case manager packet, Maddie gained two social contacts and friendships without disabilities and did not lose any names. According to Ryder's case manager, he gained two social contacts/friendships with peers without disabilities. Aiden also gained two social contacts/friendships with peers without disabilities on the case manager packets.

Table 27

Social Contacts and Friendships with Peers with and without Disabilities across Waves

Participant	Respondent	Wave One		Wave Two		Gained		Lost	
		w/ d	w/o d	w/ d	w/o d	w/ d	w/o d	w/ d	w/o d
Isaiah	Parent	--	--	0	2	--	--	--	--
	Case Manager	2	34	1	39	0	25	1	20
Maddie	Parent	0	1	1	3	1	3	0	1
	Case Manager	10	3	10	5	0	2	0	0
Ryder	Parent	4	2	8	2	5	0	1	0
	Case Manager	5	6	5	8	0	2	0	0
Aiden	Parent	4	2	8	2	5	0	1	0
	Case Manager	4	4	5	6	1	2	0	0

Note. Isaiah's parents did not complete a packet at wave one so there were no wave one numbers or gained or lost numbers. w/d refers to peers with significant disabilities. w/o d refers to peers without significant disabilities. Gained refers to the number of new names listed on the wave two packet. Lost refers to the number of names listed on the wave one packet that were not on the wave two packet.

Peer network contacts. As part of the peer network intervention, peer network members and the students with autism were encouraged to seek each other out outside of the meetings to engage in social interactions. At each meeting, the network facilitator recorded how many social

interactions had occurred outside of the meeting since the last meeting occurred. This data is found in Table 28. Due to scheduling issues, meetings were not always held with the same time interval between meetings. Thus, the following table reflects the data even though there were not equal opportunities for social interactions between all meetings.

Isaiah had interactions with between three and six (42.86% to 85.71%) of his peer network members outside of the peer network prior to each meeting. The number of interactions ranged from 4 to 23. Isaiah had more interactions, on average, during the peer network plus portion of the semester (15.83) than during the peer network only portion (10.50). Maddie had interactions outside of the network meetings with zero to three (0% to 100%) of her peer network members. Most weeks, Maddie interacted with two of her peer network members. The number of interactions she had each week ranged from 0 to 10, with an average of 3.70. Maddie had more interactions outside of the meetings, on average, during the peer network plus phase (5.40) than during the peer network only phase (2.00). Ryder interacted with between two and three (66.66% to 100%) of his peer network members outside of the peer network prior to each meeting. Most of the time, he saw all three of his peer network members outside of the meeting. On average, Ryder had 31.4 interactions prior to each meeting. On average, he had more interactions during the peer network plus phase (35.75) than he did during the peer network only phase (28.50). Aiden interacted with between one and three (33.33% to 100%) of his peer network members prior to each meeting. He had interactions with all three of his peer network members prior to 50% of his peer network meetings. Aiden had an average of 6.60 interactions with his peer network members prior to each network meeting. His average number of interactions prior to meetings were roughly the same during the peer network only (6.43) and peer network plus (7.00) conditions.

Table 28

Social Interactions Reported with Peer Network Members between Meetings

Participant	Meeting	PN/PN+	Peers with Social Interactions	Percentage of Peer Network Members	Number of Social Interactions Outside of Meetings
Isaiah	1	PN	4	57.14%	14
	2	PN	4	57.14%	4
	3	PN	5	71.43%	7
	4	PN	6	85.71%	17
	5	PN+	4	57.14%	12
	6	PN+	6	85.71%	22
	7	PN+	3	42.86%	4
	8	PN+	5	71.43%	20
	9	PN+	5	71.43%	23
	10	PN+	6	85.71%	14
Maddie	1	PN	0	0.00%	0
	2	PN	1	33.33%	2
	3	PN	3	100%	3
	4	PN	2	66.66%	3
	5	PN	2	66.66%	2
	6	PN+	1	33.33%	10
	7	PN+	2	66.66%	7
	8	PN+	2	66.66%	4
	9	PN+	0	0.00%	0
	10	PN+	2	66.66%	6
Ryder	1	PN	3	100%	27
	2	PN	2	66.66%	27
	3	PN	3	100%	33
	4	PN	3	100%	32
	5	PN	3	100%	5
	6	PN	3	100%	47
	7	PN+	2	66.66%	28
	8	PN+	3	100%	62
	9	PN+	3	100%	29
	10	PN+	3	100%	24
Aiden	1	PN	2	66.66%	4
	2	PN	3	100%	10
	3	PN	3	100%	6
	4	PN	1	33.33%	1
	5	PN	3	100%	8

6	PN	3	100%	7
7	PN	2	66.66%	9
8	PN+	2	66.66%	4
9	PN+	2	66.66%	4
10	PN+	3	100%	13

Parent questions. Parents answered four questions about their child’s socialization at school at both wave one and wave two. At wave two, they also answered the question “*My child made new friends at school this semester.*” Parents’ answers to these questions are found in Table 29. All parents either agreed or strongly agreed that their child made new friends at school over the course of the semester. For the most part, answers on the other questions remained the same. Ryder’s parent did change the answer for “*My child shares information with me about peers at school*” from *Disagree* to *Neutral*. His mother included a note that Ryder shared a little about his peer network members when asked over the semester. Ryder’s parent also changed the answer on “*I would like my child to have more interactions with peers at school*” from *Agree* to *Strongly Agree*. Aiden’s parent also changed the same item from *Agree* to *Strongly Agree*.

Table 29

Parents' Answers on Questions Regarding Their Children's Experiences at School across Waves

Participant	Question	Wave One	Wave Two
Isaiah	My child looks forward to going to school.	--	Strongly Agree
	My child has friends at school.	--	Agree
	My child shares information with me about peers at school.	--	Strongly Disagree
	I would like my child to have more interactions with peers at school.	--	Strongly Agree
	My child made new friends at school this semester.	--	Agree
Maddie	My child looks forward to going to school.	Neutral	Neutral
	My child has friends at school.	Neutral	Neutral
	My child shares information with me about peers at school.	Neutral	Neutral
	I would like my child to have more interactions with peers at school.	Agree	Agree
	My child made new friends at school this semester.	--	Agree
Ryder	My child looks forward to going to school.	Neutral	Neutral
	My child has friends at school.	Agree	Agree
	My child shares information with me about peers at school.	Disagree	Neutral
	I would like my child to have more interactions with peers at school.	Agree	Strongly Agree
	My child made new friends at school this semester.	--	Strongly Agree
Aiden	My child looks forward to going to school.	Agree	Agree
	My child has friends at school.	Agree	Agree
	My child shares information with me about peers at school.	Disagree	Disagree
	I would like my child to have more interactions with peers at school.	Agree	Strongly Agree
	My child made new friends at school this semester.	--	Strongly Agree

Note. Question 5 (My child made new friends at school this semester) was only included in wave two packets. Isaiah's parents did not return the wave one packet. Answers that were different at wave two than they were at wave one are bolded.

Fidelity of implementation. The fidelity of implementation of the intervention is examined here because fidelity impacts effectiveness. Table 30 lists the main steps of the project. All facilitators had an initial training with the researcher. All networks held an initial meeting with peer network members, where all content areas were covered (see Appendix W for content areas). Each facilitator met with the researcher for a second training on the social skills component. Participants received at least ten minutes of targeted social skills training outside of the meetings during 95% of peer network plus meeting weeks. Maddie did not receive social skills training outside of the meeting before one of her peer network plus meetings, bringing her percentage to 80.0%. She did not receive social skills instruction before this meeting because she was having behavioral difficulties and refused to meet with her case manager.

Table 30

Fidelity of Major Steps of Intervention

Participant	Initial Training with Researcher Completed	Initial Meeting Content Covered	Second Training with Researcher Completed	Social Skills Training Occurred Outside of Network Meetings
Isaiah	Yes	100%	Yes	100%
Maddie	Yes	100%	Yes	80.0%
Ryder	Yes	100%	Yes	100%
Aiden	Yes	100%	Yes	100%
Overall	100%	100%	100%	95.0%

Note. Social skills training outside of network meetings only includes weeks during the peer network plus/intervention condition.

Table 31 looks at the fidelity of implementation of each network meeting. The first portion examines the main questions on the *Peer Network Plus Intervention Checklist* (Appendix X). For the peer network only meetings, the first three questions were included. For the peer network plus meetings, all four questions were included. Isaiah, Ryder, and Aiden had 100% fidelity on the main questions across all meetings. Maddie had two meetings in which one of the

main questions was answered *no* (75%), giving her an overall fidelity of 91.6% on the main questions. Although the fourth question (on incorporating the social skills) was not included in calculations for peer network only baseline meetings, it was still answered to check that the social skills component was not added prior to implementation. The fidelity sheets indicated that none of the baseline/ peer network only meetings included the social skills training. Underneath the main questions section, the percentage of underlying questions that were answered *yes* is listed for each participant's meetings. For the peer network only/ baseline meetings, there were 14 underlying questions. For the peer network plus/ intervention meetings, there were 18 underlying questions. Percentages of underlying questions marked as *yes* ranged from 76.6% to 96.2% overall. Isaiah and Ryder had the highest percentage of underlying questions marked *yes* (96.2% and 96.0%, respectively). Maddie had the lowest percentage of underlying questions marked *yes* (76.6%).

Table 31

Fidelity of Peer Network Meetings

	Meeting										Average	
	1	2	3	4	5	6	7	8	9	10		
Main Questions												
Isaiah	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Maddie	66%	100%	100%	100%	100%	100%	100%	75%	75%	100%		91.6%
Ryder	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aiden	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Underlying Questions												
Isaiah	92.9%	85.7%	100%	100%	88.9%	100%	94.4%	100%	100%	100%		96.2%
Maddie	50.0%	71.4%	78.6%	92.9%	78.6%	83.3%	77.8%	66.7%	66.7%	100%		76.6%
Ryder	100%	92.9%	92.9%	92.9%	92.9%	100%	100%	100%	94.4%	94.4%		96.0%
Aiden	85.7%	85.7%	100%	78.6%	92.9%	92.9%	92.9%	94.4%	94.4%	100%		91.7%

Note. For peer network only/ baseline meetings, there were three main questions and 14 underlying questions total. For peer network plus/ intervention meetings, there were four main questions and 18 underlying questions.

Question Two

Are peer networks with an added social skills training component (i.e., peer network plus) socially valid interventions that can be implemented in high schools?

- a. Do the students with autism, school interventionists, and peers view this intervention positively, as rated on social validity forms?
- b. Do paraprofessionals or special educators feel that they can implement these interventions in the future, as indicated by their responses on the social validity forms?

Students with ASD. The target students with ASD answered their social validity questions (see Appendix LL) with their case managers. Table 32 reports their responses. As indicated, all four participants reported enjoying going to school and having friends at school. All participants reported spending time with their peer network peers, considering these peers friends, and had an interest in continuing to spend time with their peers. The only item that didn't have *yes* ratings for all participants was the question asking whether the peer network members helped the participant learn new things. Isaiah wasn't sure whether his peers helped him learn new things; the other three participants reported that their peers had helped them learn new things. The case managers also wrote down any comments that the students with autism made while completing the social validity form. All written comments are recorded in Table 33.

Table 32

Students with ASD Social Validity Ratings

Question	Isaiah	Maddie	Ryder	Aiden	% Yes
Do you like going to school?	Yes	Yes	Yes	Yes	100%
Do you have friends at school?	Yes	Yes	Yes	Yes	100%
Did you spend time with [names of peer partners]?	Yes	Yes	Yes	Yes	100%
Did you like spending time with [names of peer partners] in school?	Yes	Yes	Yes	Yes	100%
Did spending time with [names of peer partners] help you learn new things?	Unclear	Yes	Yes	Yes	75%
Are [names of peer partners] your friends?	Yes	Yes	Yes	Yes	100%
Would you like to keep hanging out with [names of peer partners]?	Yes	Yes	Yes	Yes	100%

Table 33

Students with ASD Social Validity Free Response Comments

Question	Participant	Comment
Do you like going to school?	Aiden	<i>Digital video class</i>
Do you have friends at school?	Maddie	<i>[Names of all three peer network members] are my friends</i>
Did you spend time with [names of peer partners]?	Isaiah	<i>Just on the lunch days. Played games, ate</i>
	Maddie	<i>Play games, cook cookies, eat pizza, eat ice cream, make poster</i>
Did you like spending time with [names of peer partners] in school?	Ryder	<i>Social group; meetings; had fun</i>
	Maddie	<i>Friend</i>
Did spending time with [names of peer partners] help you learn new things?	Aiden	<i>They're so funny</i>
	Ryder	<i>Compliments, look at friends</i>
Would you like to keep hanging out with [names of peer partners]?	Aiden	<i>Yes, they like Disney too</i>
	Maddie	<i>Maybe this summer</i>
	Aiden	<i>After summer</i>

Peer network members. The peer network members filled out the *Peer Network Member Feedback Form* (Appendix KK). One of Isaiah's peer network members did not return the form; the other 15 peer network members' answers are represented in Table 34. On each of the Likert score items, a score of 5 represented *Strongly Agree* and a score of 1 represented *Strongly Disagree*. One item, *this was too much work for me*, was negatively written in that lower scores represented more favorable views. For all other items, higher scores represented more favorable views. All peer network members responded that they either *Agreed* or *Strongly Agreed* with the statement, *overall, I enjoyed being in this project* ($M = 4.73$). For 18 of the 21 positively written statements, average responses were greater than 4.00, indicating that, on average, peer network members held favorable views regarding these items. According to their social validity forms, peer network members indicated that they had support from the adult facilitators ($M = 4.33$) and that they were able to get their work done while being part of the project ($M = 4.60$). They did not indicate that participating in the project was too much work for them ($M = 1.33$). The peer network members indicated that other students in the school should participate in similar projects ($M = 4.60$) and that they would serve as a peer partner again in the future ($M = 4.60$). Peer network members indicated that they benefitted socially from being a peer partner ($M = 4.33$) and that their partner with autism benefitted socially from being in the network ($M = 4.20$). They did not indicate as strongly that they benefitted academically ($M = 3.40$) or that their peer network members benefitted academically ($M = 3.40$). Interestingly, the most variability was found for the item, *I feel I was effective in this role*, with peer network members responding with all options (1-5) and an average of 3.73. Peer network members reported feeling comfortable working on social skills with their partner with autism ($M = 4.73$) and believed that their partner with autism showed improved social skills through the network

($M = 4.13$). They also indicated strongly that their partner with autism was a friend ($M = 4.47$) and that their views about students with disabilities had improved for the better ($M = 4.47$).

Table 34

Peer Network Members Social Validity Responses

Item	Isaiah (n = 6) ^a	Maddie (n = 3)	Ryder (n = 3)	Aiden (n = 3)	Overall (n = 15)
At first, I was excited to become a peer partner.	3.83(3-5)	4.67(4-5)	5.00(5-5)	5.00(5-5)	4.47(3-5)
I felt confident serving in this role.	4.17(4-5)	4.33(4-5)	4.67(4-5)	4.33(4-5)	4.33(4-5)
I had enough help from a teacher to do this role well.	4.67(4-5)	5.00(5-5)	5.00(5-5)	4.67(4-5)	4.79(4-5)
<i>This was too much work for me.</i>	<i>1.50(1-2)</i>	<i>1.33(1-2)</i>	<i>1.00(1-1)</i>	<i>1.33(1-2)</i>	<i>1.33(1-2)</i>
I feel I was effective in this role.	4.00(3-5)	3.00(1-4)	4.00(4-4)	3.67(3-4)	3.73(1-5)
It was easy to get my own work done while part of this project.	4.33(4-5)	4.67(4-5)	5.00(5-5)	4.67(4-5)	4.60(4-5)
The initial orientation meeting with a teacher/project staff member was helpful.	4.00(4-5)	4.00(4-4)	4.67(4-5)	4.67(4-5)	4.27(3-5)
Other students in the school should also do this.	4.33(4-5)	4.33(4-5)	5.00(5-5)	5.00(5-5)	4.60(4-5)
I would be a peer partner again in the future.	4.17(4-5)	4.67(4-5)	5.00(5-5)	5.00(5-5)	4.60(4-5)
I understand why the teachers thought peer partners would be helpful for my partner with a disability.	4.50(4-5)	4.67(4-5)	5.00(5-5)	4.33(4-5)	4.60(4-5)
Our school should have more peer partners for students with disabilities.	4.50(4-5)	5.00(5-5)	5.00(5-5)	5.00(5-5)	4.80(4-5)
My partner benefited <i>socially</i> from having peer partners (e.g., talks more with peers, has more friends).	4.33(3-5)	4.33(4-5)	4.00(4-4)	4.00(4-4)	4.20(3-5)
My partner with disabilities benefited <i>academically</i> from having a peer network (e.g., participates more, learns new skills).	3.50(3-5)	3.33(3-4)	3.67(3-4)	3.00(3-3)	3.40(3-5)
I benefitted <i>socially</i> from being a peer partner.	4.00(3-5)	4.33(3-5)	5.00(5-5)	4.33(4-5)	4.33(3-5)
I benefitted <i>academically</i> from being a peer partner.	3.17(2-5)	3.00(3-3)	4.67(4-5)	3.00(3-3)	3.40(2-5)
I consider my partner with disabilities to be a friend.	4.00(4-4)	4.67(4-5)	4.67(4-5)	5.00(5-5)	4.47(4-5)
I would recommend being a peer partner to my other friends.	4.50(4-5)	4.33(4-5)	5.00(5-5)	5.00(5-5)	4.67(4-5)
My views about students with disabilities have changed for the better.	4.33(3-5)	4.00(3-5)	4.67(4-5)	5.00(5-5)	4.47(3-5)
I also spend time with other students who have similar disabilities at my school.	4.00(3-5)	4.33(3-5)	4.67(4-5)	4.67(4-5)	4.33(3-5)
I felt comfortable talking about/ working on social skills with my partner with disabilities.	4.50(4-5)	4.67(4-5)	5.00(5-5)	5.00(5-5)	4.73(4-5)
My partner improved his or her social skills through our network.	4.17(3-5)	4.00(3-5)	4.33(4-5)	4.00(4-4)	4.13(3-5)
Overall, I enjoyed being in this project	4.50(4-5)	4.67(4-5)	5.00(5-5)	5.00(5-5)	4.73(4-5)

Note. Scores are reported as Average(Range). ^a One of Isaiah's peer network members did not return the feedback survey. Items in italics are reverse scored, with higher numbers indicating more negative opinions.

In addition to the Likert scale questions, peer network members were asked to answer open-ended questions. Their answers are reported, verbatim, in Table 35 below. When asked what went really well, peer network members reported enjoying getting to know their partner with autism better, seeing progress, and participating in favorite activities. When asked what could have been better, responses seemed to vary by peer network. Some of Isaiah's peers commented on ways they thought their interactions with Isaiah could have been improved. For example, one of his peer network members mentioned that she wished the network members would have been "more blunt" with Isaiah. Some of Aiden's and Ryder's peer network members mentioned improving the activities selected as something that could have been improved. When asked what changed for peer network members due to being involved in the project, many peer network members mentioned getting to know the student with autism better and getting more comfortable interacting with peers with disabilities. For the last question, many peer network members mentioned that their partner with autism improved socially and gained friends.

Table 35

Peer Network Members Open- Ended Responses

Question	Participant	Peer Number	Comment
What went really well?	Isaiah	PN1	<i>I think working on social skills by playing games went really well.</i>
		PN2	<i>Being able to keep a conversation going</i>
		PN3	<i>I think we had a good time with the games and it was neat seeing his progress.</i>
		PN5	<i>I think the social skills sheet went well on how to communicate and teach how to not interrupt.</i>
		PN6	<i>I think it was organized very well, and we always had fun activities to do.</i>
		PN7	<i>Talking and getting to know Isaiah better</i>
	Maddie	PN1	<i>1) Coming up with different activities each week 2) Each activity was engaging for all</i>
		PN2	<i>The activities were really fun! They were well planned out which kept things layed back instead of tense</i>
		PN3	<i>I really enjoyed getting to know Maddie more. She truly is wonderful to be around. I also liked the different activities we did. Especially the game that asked the questions to get to know more about everyone's family.</i>
	Ryder	PN1	<i>Bean bag toss! It really allowed Ryder to work on social skills.</i>
		PN2	<i>For the most part I think everything went really well.</i>
		PN3	<i>I think the social aspect and encouragements went really well. Throughout the program I think that Ryder did learn many new key aspects to being social, as well as teaching us new things everyday. For example, teaching us what works best for him to learn.</i>
	Aiden	PN1	<i>I loved getting to know Aiden on a more personal level. I feel like I learned how to better communicate with him through the things he connects to, like movies.</i>
		PN2	<i>Aiden really started to pick up on the giving compliments thing and started doing it all by himself.</i>
		PN3	<i>I felt Aiden becoming more comfortable with us as sessions went on, and I noticed myself seeking him out in the halls to say hi and ask him how his day was going.</i>
What could have been better?	Isaiah	PN1	<i>Figuring out what to do the first few times.</i>
		PN2	<i>Staying on topic</i>
		PN3	<i>I think we should have been a bit more blunt at times like if he asks us if we are boring him and just say yes... Instead of something like oh no of course not!</i>

		PN5	<i>Maybe having more or new activities.</i>
		PN6	<i>I think we could've done better at telling him when he was getting inappropriate, or off topic.</i>
	Maddie	PN7	<i>understanding what he means sometimes</i>
		PN1	<i>Maybe more social aspects of the activity</i>
		PN2	<i>Nothing, really</i>
		PN3	<i>I always forgot when the meetings were, which was my fault. But out of everything, I think it went well.</i>
	Ryder	PN1	<i>Finding things to do that Ryder would enjoy</i>
		PN2	<i>Nothing, really</i>
		PN3	<i>Some things felt a little unorganized, but overall it was very well done and efficient program. The activities for each meeting could have been pre-planned/decided just so we could get going right away</i>
	Aiden	PN1	<i>A bigger variety of activities.</i>
		PN2	<i>There could have been more of a variety of activities for us to do.</i>
		PN3	<i>The activities could have been planned better. I think we all would have benefitted from a variety of games and social situations.</i>
What (if anything) has changed for you as a result of being a peer partner?	Isaiah	PN1	<i>I see more that friendships can be made no matter what your condition is.</i>
		PN2	<i>Became more social and talk to Isaiah, making more friends different aspect</i>
		PN3	<i>I gained some confidence that I can help people and also gained a little more patience.</i>
		PN5	<i>I have a new outlook on people with disabilities. It has made me more confident in talking to them.</i>
		PN6	<i>Nothing</i>
		PN7	<i>I feel more comfortable talking to Isaiah</i>
	Maddie	PN1	<i>I now know Maddie a lot better than I did before</i>
		PN2	<i>I made a new friend! Before I began meeting this classmate, she was just another student that I saw around the classroom. Now, she is a friend and I can say hi to her whenever I see her!</i>
		PN3	<i>The knowledge that I know about Maddie. It was also great when I walk in the door to have lunch with her it is not awkward like it was the first day.</i>
	Ryder	PN1	<i>I'm much more open to trying new activities.</i>
		PN2	<i>I know how to better engage people with his kind of disability now.</i>
		PN3	<i>Throughout this program of being a peer partner I am a lot more confident with my social skills and ability to work with others that have an intellectual disability, I have also learned approaches that work best in working with and teaching others.</i>

What (if anything) has changed for your partner with a disability as a result of having peer partners?	Aiden	PN1	<i>I know Aiden better and I better understand how to interact with him and other students with similar disabilities. I also understand his 'scripting' and why he does it. I have gained a new friend.</i>
		PN2	<i>I am more comfortable</i>
		PN3	<i>I didn't know Aiden well before this experience and after I feel comfortable going up and starting a conversation with him.</i>
	Isaiah	PN1	<i>I think his social skills have improved along with friendships</i>
		PN2	<i>not sure. He seems more talkative and willing to listen now as well</i>
		PN3	<i>He asks us now if we like what he's talking about and seems to be able to redirect himself better. He learned all our names which was cool :)</i>
		PN5	<i>He has learned more names and talks to all of us a lot more.</i>
		PN6	<i>I think he has gotten better at communicating with us.</i>
		PN7	<i>He talks to more people in the class I am in, and he talks more in the halls</i>
	Maddie	PN1	<i>Maddie got better at engaging in conversations. I feel that she also got a lot more comfortable with talking to all of us.</i>
		PN2	<i>I don't know anything about her scholastics, but I definitely noticed her become more comfortable after each meeting. She became much more outgoing with me.</i>
		PN3	<i>The relationship that I carry with her. It was great catching up with her. And I'll definitely facebook her now this summer.</i>
	Ryder	PN1	<i>I feel like his social skills improved, he seemed like he had fun :)</i>
		PN2	<i>I think he has gotten a little better at communicating with other people.</i>
		PN3	<i>I think that my peer partner has learned new social skills that he will be able to utilize in the future. He has also formed friendships that he didn't have coming into the program.</i>
Aiden	PN1	<i>His social/ conversational have improved, especially using names when he addresses people! I hope he feels like he has 3 new friends as well.</i>	
	PN2	<i>I think Aiden thinks of us more as friends and less as tutors</i>	
	PN3	<i>Aiden began to answer me. He responded to the questions I asked him and even addressed me by name at times. This was a big step because it hadn't happened between him and I before.</i>	

School interventionists. Facilitators also filled out social validity forms. As Isaiah's case manager was not his facilitator but was involved in the intervention, both Isaiah's case manager and facilitator completed the form. On each of the Likert score items, a score of 5 represented *Strongly Agree* and a score of 1 represented *Strongly Disagree*. Table 36 lists each respondent's scores as well as an average for each item. All facilitators agreed that they enjoyed participating in the project ($M = 4.6$). They felt that they were effective in their role ($M = 4.2$) and that the amount of time required was reasonable ($M = 4.6$). The adult facilitators felt that both the student with autism ($M = 4.8$) and the peers involved ($M = 4.5$) benefitted socially as a result of the project. In general, the adult respondents felt that the peer network was an effective medium for teaching social skills ($M = 4.6$). Maddie's facilitator gave this item a *Neutral* response whereas the other four respondents rated this item as *Strongly Agree*. The adult respondents felt that the student with autism's social skills improved in the targeted areas ($M = 4.4$) as well as overall ($M = 4.2$).

Table 36

Facilitators Social Validity Responses

Item	Isaiah Fac.	Isaiah C.M.	Maddie	Ryder	Aiden	Average
The amount of time required to use this strategy was reasonable.	4	5	4	5	5	4.6
The amount of time required for record keeping with this strategy was reasonable.	4	5	4	5	5	4.6
I feel I was effective in this role.	4	5	4	4	4	4.2
<i>Implementation of this strategy required considerable support from other school staff.</i>	3	4	2	2	2	2.6
I implemented this strategy with a good deal of enthusiasm.	4	5	4	4	4	4.2
This strategy was a good way to address the educational needs of the student with a disability.	5	5	3	5	5	4.6
The strategy fits well within this school.	4	4	4	5	5	4.4
I understood the procedures of this strategy.	4	4	4	5	5	4.4
The student with a disability benefitted <i>socially</i> from having a peer partner.	4	5	5	5	5	4.8
The student with a disability benefitted <i>academically</i> from having a peer partner.	4	3	3	4	4	3.6
The student with a disability has more friends as a result of this project.	4	4	3	4	4	3.8
The peers without disabilities benefitted <i>socially</i> from being a peer partner.	4	N/A	4	5	5	4.5
The peers without disabilities benefitted <i>academically</i> from being a peer partner.	4	N/A	3	4	4	3.75
<i>This strategy negatively impacted other students in the school.</i>	1	1	1	1	1	1
The peer network was an effective medium for teaching social skills.	5	5	3	5	5	4.6

The student with a disability's social skills improved in targeted areas.	4	4	4	5	5	4.4
The student with a disability's social skills improved overall.	4	4	3	5	5	4.2
Overall, I enjoyed participating in this project.	4	5	4	5	5	4.6

Note. Items in italics are reverse scored, with higher numbers indicating more negative opinions.

The school interventionists were also asked to answer a number of open-ended questions. These answers are provided, verbatim, in Table 37. When asked what went really well, some of the adults reported that the peers took responsibility over the network and interacted well with the student with autism. The facilitators had different ideas on what could have gone better with some mentioning having more time and others mentioning specific characteristics of the peers involved. All adult respondents wrote that they felt the peer network was an effective medium for teaching social skills. The case managers and facilitators reported that their student with autism became more social and communicative as a result of the intervention and that the peers learned how to communicate better with students with disabilities. Some of the adult respondents mentioned that they learned different methods of teaching social skills and would continue to use these methods with other students.

Table 37

School Interventionists Open-Ended Responses

Question	Participant	Comment
What went really well?	Isaiah Facilitator	<i>1) Interaction with the students 2) [Primary researcher] really helped with comfort level and ideas 3) Most of the peers were at the meetings (good attendance) 4) Fun finding games/activities that helped with communication skills 5) Isaiah knows everyone's names :)</i>
	Isaiah Case Manager	<i>Admin support & requests for facilitators, weekly check in's (feedback), and detailed short term goals w/ clear steps to implement</i>
	Maddie	<i>1) Coming up with different activities each week 2) Each activity was engaging for all</i>
	Ryder	<i>The students were motivated to participate, took charge and ran with it, even when I was busy with other stuff.</i>
	Aiden	<i>The students took responsibility for planning and communication. I think the group came together nicely.</i>
What could have been better?	Isaiah Facilitator	<i>1) Maybe not as many peers 2) Not during a lunch time-some time waiting for lunches 3) Maybe a time the teacher could meet with Isaiah during the day or opportunity to observe before peer meetings</i>
	Isaiah Case Manager	<i>Peer by-in.</i>
	Maddie	<i>Having more time with the peers. Lunch hour was at times rushed.</i>
	Ryder	<i>I wish I could have attended each session and followed up with peers individually. I would like to give some 1:1 time with each peer and Ryder.</i>
	Aiden	<i>I think there were some gender/ social group breakdowns that could not be broken... girls prom focused... conversation kept Aiden out.</i>
Did you find that the peer network was an effective medium for teaching social skills? Why or why not?	Isaiah Facilitator	<i>Yes :) When I would try discussing social skills the student w/ a disability did not seem as interested in the skills vs. when his peer would discuss or correct the skill</i>
	Isaiah Case Manager	<i>Yes! This student has daily 1:1 social skills but very little time w/ peers in natural setting to practice when peers also know the target goals.</i>
	Maddie	<i>I felt that the network provided opportunities to practice social skills in a more real life context which is hard to create in the classroom.</i>
	Ryder	<i>Yes. I thought it was manageable and focused. It was a concrete way of introducing complex skills.</i>

What (if anything) has changed for the student with a disability as a result of being in this project?	Aiden	<i>Yes, I think it was a good medium for teaching these skills. It took focus off academics or other objectives and made it specifically social.</i>
	Isaiah Facilitator	<i>I feel he is engaging in conversation better and also asks questions that relate to the topic of discussion.</i>
	Isaiah Case Manager	<i>I think the student's trust in his peers grew. The unanticipated highlight was when he "checked in" to confirm a different (not part of the study) social skill that had been taught. Asking for this feedback had been encouraged for 2 years prior and he had never initiated it. His trust in this peer group enabled him to be able to finally do this. :)</i>
	Maddie Ryder	<i>She has gained confidence socializing with typical peers. Ryder has greatly improved his understanding of himself as a friend. He talks about his friends. He remembers names.</i>
	Aiden	<i>Aiden has been better about listening and responding to social language. For example, when I explained that I would be gone for a meeting and wanted to make a clarification in the schedule so he would not be "disappointed" he reacted strongly. "Don't be disappointed, it is ok. I will not disappoint"</i>
What (if anything) has changed for the peers as a result of being in this project?	Isaiah Facilitator	<i>I feel they learned how to communicate more effectively with Isaiah. A few of the students were uncomfortable at first, but now more engaged in conversation and how or what to do if conversation is going off topic.</i>
	Isaiah Case Manager	N/A
	Maddie	<i>Gaining awareness of disability and how to interact with this group.</i>
	Ryder	<i>Students are clearly interested in Ryder. They also express positive feelings about the study itself. They feel validated about the importance of friendship, communication, and socialization.</i>
	Aiden	<i>Students have expressed that they "know" Aiden better, they feel more confident. They feel like friends.</i>
What (if anything) has changed for you as a result of being in this project?	Isaiah Facilitator	<i>I started to learn how to implement skills that had to be worked on with a student w/ disabilities. Observed the power of peer interaction.</i>
	Isaiah Case Manager	<i>I think I have been more empowered to start more groups in following years. It would be helpful if I could also see the materials the facilitators had/received.</i>
	Maddie	<i>It has been nice to see Maddie be excited about socializing. Anxiety and issues surrounding her disability often close her off from the world outside our classroom.</i>

Ryder	<i>Ryder seemed more aloof to me, I think I see more clearly his attempts at socialization.</i>
Aiden	<i>I think it is good to make social skills more measurable, objective, understandable. We spend more time building the skills into lessons now that they are introduced in a concrete way.</i>

Future implementation. To answer question 2b, whether paraprofessionals or special educators feel that they can implement these interventions in the future, five answers on the social validity form were examined. These items, as well as the respondents' answers to the items, are displayed in Table 38. Overall, the facilitators and case managers reported that they would know what to do if they were asked to implement the strategy again ($M = 4.6$) and that they could use the strategies they learned through this project with other students ($M = 4.4$). They agreed that they were motivated to continue using the strategy ($M = 4.2$) and disagreed that they would not be interested in implementing the strategy again ($M = 1.8$). All of the facilitators *Disagreed* that they would need ongoing consultation to keep implementing the strategy, with Isaiah's case manager marking this item as *Neutral* ($M = 2.2$).

Table 38

Questions Related to Future Implementation of Intervention

Item	Isaiah Fac.	Isaiah C.M.	Maddie	Ryder	Aiden	Average
<i>I would need ongoing consultation to keep implementing this strategy.</i>	2	3	2	2	2	2.2
I am motivated to continue using this strategy.	4	5	4	4	4	4.2
<i>I would not be interested in implementing this strategy again.</i>	2	1	2	2	2	1.8
I would know what to do if I was asked to implement this strategy again.	4	5	4	5	5	4.6
I could use the strategies I learned through this project with other students.	4	5	3	5	5	4.4

Note. Items in italics are reverse scored, with higher numbers indicating more negative opinions.

Question Three

Is the Autism Social Skills Profile (ASSP) sensitive enough to detect improvements in social skills as indicated by changes in pre-to-post scores on the ASSP and is it as sensitive when compared to changes demonstrated on other measures (SSIS, Vineland, observations)?

This question requires changes on the ASSP to be compared to results seen on the other measures described in this chapter. This comparison is made difficult by the fact that all of the measures have different scales and not all have definitive criteria by which to measure improvement or decline. This issue will be discussed more fully in the next chapter. For the purposes of Table 39, changes on the overall scores on the ASSP were rated *no change* (NC) if the score at wave two was within nine points in either direction of the score at wave one. If the wave two score was 10-14 points higher than the wave one score, this was rated as *slight improvement* (SI). If the wave two score was 10-14 points lower than the wave one score, this was rated as *slight decline* (SD). If the wave two score was 15 or more points higher or lower than the wave one score, this was rated as *improvement* (I) or *decline* (D), respectively. For the individual skills, a change of 1 point in either direction marked an *improvement* or *decline*. Improvement or decline on the social skills ratings was determined by visual analysis of the graphs, as reported earlier in this chapter. The Social Skills Scale was used to determine improvement or decline for the SSIS. Changes in level were considered a *slight improvement* or *slight decline*. Changes of a standard deviation or more were considered an *improvement* or *decline*. Individual skills were not examined on the SSIS. Changes on the Socialization Scale for the Vineland were used. As with the SSIS, changes in level were considered a *slight improvement* or *slight decline*. Changes of a standard deviation or more were considered an *improvement* or *decline*. Individual skills were not examined on the Vineland.

Table 39

Results on the ASSP as Compared to Other Measures

Item	Case Manager ASSP	Parent ASSP	Social Skills Ratings	Case Manager SSIS Social Skills Scale	Parent SSIS Social Skills Scale	Vineland Socialization Scale
			Isaiah			
Overall changes in social skills	SD	--	I	SI	NC	NC
Skill 1: Maintains the “give and take” of conversations	NC	--	I	--	--	--
Skill 2: Joins a conversation with two or more people without interrupting	NC	--	I	--	--	--
Skill 3: Talks about or acknowledges the interests of others	NC	--	I	--	--	--
			Maddie			
Overall changes in social skills	NC	NC	I	NC	NC	NC
Skill 1: Responds to the invitations of peers to join them in activities	I	I	I	--	--	--
Skill 2: Invites peers to join her in activities	NC	NC	I	--	--	--
Skill 3: Asks questions to request information about a person	NC	I	I	--	--	--
			Ryder			
Overall changes in social skills	SI	NC	I	NC	SI	NC
Skill 1: Maintains the “give and take” of conversations	I	NC	I	--	--	--
Skill 2: Takes turns during games and activities	I	NC	I	--	--	--
Skill 3: Provides compliments to others	I	NC	I	--	--	--
			Aiden			

Overall changes in social skills	I	SI	I	NC	SI	SI
Skill 1: Maintains the “give and take” of conversations	NC	NC	I	--	--	--
Skill 2: Takes turns during games and activities	I	NC	I	--	--	--
Skill 3: Provides compliments to others	I	NC	I	--	--	--

Note. NC = no change; I = improvement, SI = slight improvement, D = decline, SD = slight decline

As indicated in Table 39, there was disagreement between measures. The social skills ratings during direct observations detected improvement for all participants across all skills. The ASSP did not seem to be sensitive enough to detect improvements in either the targeted skills or the overall social skills for Isaiah. The direct observations of social skills seemed more sensitive for Isaiah, showing improvement overall and for each targeted skill. The SSIS teacher measure also showed *slight improvement*. For Maddie, however, the ASSP did seem sensitive enough for 1 of the 3 targeted skills (as reported by the case manager) and 2 out of the 3 targeted skills (as reported by parents), but did not detect an overall improvement. Ryder’s ASSP (as reported by the case manager) showed improvement on all three skills and slight improvement overall. His parent SSIS also showed *slight improvement* but *no change* was reported on the case manager SSIS or Vineland. Aiden’s ASSP (as reported by the case manager) showed *improvement* overall and on 2 of the 3 targeted social skills. His parent’s ASSP reported *slight improvement* overall but *no change* on the targeted skills. Aiden’s case manager SSIS showed *no change* while his parent’s SSIS and case manager’s Vineland showed *slight improvement*. Again, these comparisons were made somewhat arbitrarily and will be discussed more at length in the next chapter.

Chapter 5

Discussion

The purpose of this chapter is to interpret the results of the study and discuss implications. This chapter will also include comments on the limitations of the project as well as directions for future research. A summary is provided at the end of this chapter.

Interpretation of Results

This section interprets the main results of this study and provides potential implications. Specifically, this section discusses the impacts of the peer network plus intervention on the participants' social skills, interactions, social contacts, engagement, and proximity to others. In addition, this section discusses the ASSP's strengths and limitations as compared to other measures. Fidelity and social validity of the intervention are also discussed.

Social skills. The main purpose of this study was to investigate peer networks as a medium for social skills instruction. It added to the field by examining the impact of explicit social skills instruction on behavior **within** the peer network meetings. Overall, the intervention was effective at increasing participants' targeted social skills within the peer network meetings. Interestingly, most participants showed some change in their targeted social skills during the peer network only condition. This indicates that peer network interventions alone are beneficial for improving the social skills of some students with autism. Peer networks give students with autism semi-structured opportunities to interact with typically developing peers with facilitation from adults. These opportunities may be enough to help some students with autism develop social skills. Maddie is the perfect example of this. She had very few interactions with typically developing peers prior to starting the peer network and her social anxiety kept her from attending general education classes. During her first baseline peer network meeting, Maddie's targeted social skills were all low. Once she got to know her peers and became more comfortable in the

group, she displayed more skills during baseline. Her case manager was surprised by her abilities, commenting to the primary researcher that she didn't know Maddie would be able to interact with her peers in the way that she was. The peer network allowed Maddie the opportunity to show others her abilities.

Even though most of the participants showed growth during the peer network only condition, all participants showed marked improvement after the introduction of the social skills component. There were a minimal number of overlapping data points from baseline to intervention and clear upward trends in the data. In addition, two independent coders found that there was *Strong Overall Evidence* that the social skills component led to gains in the participants' social skills. This effect was seen for the average of the three targeted social skills as well as for each individual skill. Thus, adding in the social skills component to the peer network made the network more effective for targeting the participants' social skills. The peer network plus intervention was an effective medium for teaching social skills and providing participants opportunities to practice these skills with typically developing peers. With the design of this study, it is unclear which component(s) of the social skills instruction were most effective but it is clear that the package was effective. For example, it could be that the same results would have been seen had the social skills instruction been limited to within in the meeting (rather than also occurring outside of the meeting) but this was not examined in this study.

Interactions. Although targeting social skills was the major purpose of this intervention, the researchers were also interested in the impacts of the peer network plus intervention on the interactions that occurred during the network meetings. The impact of peer network interventions on interactions **within** the meetings is also an understudied area in the literature. The independent raters found *Moderate Overall Evidence* for the impact of the social skills

component on the total interactions of participants with their peer network members. A treatment effect was found for Isaiah, Ryder, and Aiden but not for Maddie. As with the social skills, some participants showed gains in interactions throughout the peer network only condition. Again, this may indicate that giving students with autism the opportunity and support to interact with peers without disabilities may lead to more interactions. Maddie, who had very limited interactions with peers prior to her network starting and few interactions during the first meeting, had many more interactions throughout the other weeks. In essence, she had not been exposed to typically developing peers very often and once she was, her skills improved. The moderate overall effect of the social skills component indicates that, for some participants at least, adding a social skills component to the peer network can have a greater impact on the number of interactions students with autism have with their peer network members during the meetings.

An increase in interactions could mean many things. It could indicate that peers became more comfortable talking to the student with autism or were prompted to interact with the student but that the student with autism retained the same number of interactions. To check whether this occurred, the students' contributions were examined as well. The graphs of the student contributions resemble the total interactions graphs, indicating that students with autism showed similar patterns of responding to their peer network members. Indeed, the participants showed increases in their contributions to the conversations after the social skills component was introduced. To ensure that increases in the student contributions were not due solely to responding to peers' initiations, the graphs of the students' initiations were also examined. The graphs reveal that the participants initiated more following the introduction of the social skills component. Taken together, this data indicates that the peer network plus interventions did not just change peers' behaviors but also changed the behaviors of the participants with autism.

One important consideration with the interactive behaviors data is that these graphs display the quantity of interactive behaviors rather than the quality. In addition, the participants started the intervention at different levels of interaction. For instance, Isaiah started the intervention being very social with others. According to his case manager, Isaiah had 34 peer contacts and friends at wave one, far more than any of the other participants. Isaiah displayed a great deal more social interest than the other participants. For Isaiah, the main concern was not increasing his number of social interactions but increasing their quality and appropriateness. In fact, all three of his targeted goals centered on being an equal conversational partner and not taking over the conversation. Isaiah also had seven peers in his network, more than double the three peers each of the other participants had in their networks. With having more peers in his group, it would make sense that there would be fewer interactions involving Isaiah as only interactions directed specifically to Isaiah were counted and peers also interacted with one another. As discussed previously, increasing the number of interactions Maddie had with her peers *was* a major focus. For Maddie, being involved in a peer network with or without the social skills component led to increased interactions. Just having the opportunity to interact with peers did not seem to be enough for Ryder. He had low levels of interactions during the peer network only condition and showed a strong improvement after the social skills component was added. Aiden showed a similar pattern, although he did have a spike in interactions during the baseline phase. Both participants had many more interactions during the peer network plus condition. For these two, the structured addition of the social skills component paired with additional prompting from facilitators and peers led to more interactions and interactions of better quality (according to the social skills data). Thus, it seems that just having extended time in a peer network can be helpful for some students in increasing their interactions with peers during the meetings.

However, for others, including targeted social skills training during and outside of the meetings can increase these interactions even more. This data extends the literature to date as it describes and highlights social interactive behaviors that occur across actual peer network meetings.

Engagement. Engagement was not part of a primary research question; however, engagement during the peer network meetings was recorded across phases. For two participants, Isaiah and Maddie, engagement was high across all network meetings. Ryder and Aiden, however, had significant variability in their levels of engagement during the peer network only condition. With the addition of the social skills component, both participants were more consistently engaged. During the peer network plus condition, Ryder's and Aiden's facilitators and peers would remind them to take turns and kept them engaged by prompting communication. This data may indicate that some students need this structure and feedback on social skills to remain engaged in the group.

Proximity. There was a great deal of overlap between the peer network only and peer network plus phases in regards to both proximity to peer network members and proximity to adults. In general, participants were in proximity to their peer network members for the majority of the 10 minute observations across phases. The only exception was Ryder. He was in proximity with his peer network members more during the peer network plus phase than during the peer network only phase. This could be because his peers were making an effort to keep him involved in the activities and conversations and calling him back to the group when he would wander off. Proximity to adults varied significantly across participants and phases. It does seem that proximity to adults decreased as time went on (there are more sessions with 0% time with an adult in proximity to the participant as the semester went on). This might indicate that facilitators stepped back and let the peers take over the meetings more as the meetings continued.

Interestingly, one exception is that the first few sessions including the social skills component generally had the adult in proximity to the participant more often. This could be because the adult was introducing the social skills component and providing more facilitation during the early meetings of the peer network plus intervention.

Social contacts and friendships. Parents and case managers provided information on the participants' social contacts and friendships at wave one and wave two. This data is informative regarding how participants' social networks changed across the semester. All participants gained more social contacts and friendships than they lost over the course of the semester, suggesting that they expanded their networks. Case managers reported more names of peers than did parents. This suggests that participants interact with more peers within school than they do outside of school. However, because of the nature of the data, changes in the social networks cannot be attributed solely to the peer network plus intervention. There were also no comparison participants to suggest whether, without intervention, students with autism gain similar numbers of social contacts and friendships over the course of a semester.

Participants' interactions with peer network members outside of the meetings were also recorded across the semester. Overall, participants had more interactions outside of the meeting, on average, during the peer network plus phase of the intervention than the peer network only phase. However, the number of interactions participants had outside of the meeting varied widely by participant and week. Variables other than the social skills component likely contributed to the number of interactions that occurred each week. For instance, illness and other absences often kept the participant and peers from interacting as often during the week. Occasionally, network meetings were held twice in the same week to make up for a missed meeting due to illness or school functions. Although participants' interactions with their peer network members

were not recorded before the network began, it was clear anecdotally that some students had interactions with their peer network members prior to the network whereas others did not. Ryder, for example, generally had more interactions outside of the meeting than the other three participants. Two of his peer network members already saw Ryder multiple times a day before the network began and it was easy for them to seek Ryder out during the day. It was more difficult for Maddie's peer network members to seek her out during the week as Maddie was generally in the special education 'wing' of the school and her peers did not see her during the day without significantly changing their routines. Maddie's school was also on a block schedule, which lessened the number of passing times during each day, limiting opportunities to connect and interact. The block schedule also made scheduling the network meetings more difficult. To meet each week, they usually met on a Thursday one week and then the next Tuesday. This led to there sometimes being one day between meetings and sometimes being four weekdays and a weekend between meetings. Obviously, there were fewer opportunities for interactions when there was only one day between meetings. This data mimics current literature on peer networks that social interactions outside meetings increase and suggests that the peer network plus intervention may have additional benefits in this area.

Fidelity. Many studies on social skills interventions have failed to include measures of fidelity (Bellini et al., 2007; Gresham et al., 2001). Measuring fidelity is essential because it informs the consumer whether the intervention was implemented as prescribed and, thus, whether results found (or not found) can be attributed to the intervention. In this study, fidelity was examined in multiple ways. Table 30 in the previous chapter looked at the major steps of the project. All facilitators received the initial training as well as the training on the addition of the social skills component. All peer network members were oriented to the network and trained

during an initial meeting with the facilitator and primary researcher. This meeting covered all required aspects including introductions, background on the student with autism, a discussion of the goals of the peer network, a discussion of confidentiality, scheduling social contacts and the regular meetings, and a time for discussion and questions. Once the social skills component was added, case managers were asked to work with the participant outside of network meetings for at least 10 minutes prior to each peer network plus meeting. For Isaiah, Ryder, and Aiden, these trainings occurred with fidelity before each meeting. Maddie did not receive the training outside of the meeting before one of her peer network plus meetings. This occurred because Maddie was displaying behavioral challenges and wouldn't work with her case manager prior to the meeting.

In addition to looking at the main steps, fidelity was examined through the *Peer Network Plus Intervention Checklist* (Appendix X). The most important part of this form was the main questions. For the peer network only condition, the three main questions were a) "Are peer network members and the focus student interacting during the meeting?" b) "Are peer network members and the focus student reporting that interactions occurred during the week (outside of the meeting)?" and c) "Does the facilitator support peer partners and the target student?" Three out of four of the participants' networks had 100% fidelity on these three main questions during the peer network only condition. For Maddie's first meeting, fidelity was 66% because the peers had not interacted with Maddie in the week prior to the meeting. During the peer network plus condition, the question "Were the targeted social skills addressed/ worked into the meeting?" was added to the three questions above. Isaiah's, Ryder's, and Aiden's peer network plus meetings had 100% fidelity across all four questions during the intervention condition. Maddie had two meetings in which one question was not answered *yes*. During one of the meetings, the social skills component was not integrated into the meeting. This was the day that Maddie was

having behavioral difficulties and refused to meet with her case manager for her lesson prior to the meeting. During another meeting, no interactions with peer network members had occurred outside of the meeting. This occurred because of a scheduling difficulty—the meeting ended up being the day after the previous meeting. Overall, fidelity of the main components of the peer network only and peer network plus intervention was extremely high. This implies that this intervention is feasible and can be implemented in high schools. However, it is important to consider that the researcher's presence may have impacted fidelity as the facilitators may have been more careful to implement the intervention with the researcher present and were provided with ongoing feedback and support.

There was more variability with fidelity of the underlying questions. For Maddie's case, during the three meetings in which one main question was answered *no*, all underlying questions under that question were also answered *no*. Other items that were occasionally marked *no* included the items regarding the students' activities during the meeting. Sometimes, the students did not engage in conversation **and** play games together during the same meeting. Other items that were occasionally marked *no* related to interactions occurring outside the meeting. Not all participants were reported to have initiated interactions outside of the meetings and these interactions were not always reciprocal. Overall, the main questions were seen as the major measure of fidelity. Future research should examine what components of these interventions are necessary and sufficient for positive results. Fidelity sheets with multiple underlying questions might be a useful way to determine this information.

Social validity. Research question two was concerned with the social validity of the intervention. Overall, participants seemed to find the intervention socially valid. All of the target students with autism reported enjoying the time they spent with their peer network members and

considered them friends. Importantly, all peer network members also considered their partner with autism to be a friend (all *Agreed* or *Strongly Agreed*). Although it is difficult to define what a true friend is, it is telling that both students with autism and the peer network members considered each other friends by their own individual definitions of friend. Peer network members also agreed that they enjoyed participating in the project. In general, peer network members reported that they would recommend being a peer partner to other friends and that more interventions like the peer network plus intervention should be offered at their high schools.

Peer network members felt that they benefitted socially from participating along with the student with autism. Many peer network members agreed that their views about students with disabilities changed for the better as a result of the intervention. For example, one of Isaiah's peer network members wrote, "I have a new outlook on people with disabilities. It has made me more confident in talking to them." One of Isaiah's peer network members wrote that she "gained some confidence that [she] can help people and also gained a little more patience." One of Ryder's peer network members wrote, "Throughout this program of being a peer partner I am a lot more confident with my social skills and ability to work with others that have an intellectual disability, I have also learned approaches that work best in working with and teaching others." It's important that peer network members felt that the intervention was beneficial for them as well as for the student with autism. Schools might be more agreeable to implementing these interventions knowing that peers reported enjoying the intervention and indicated that they benefitted through the intervention as well.

The adults that participated in the study also reported positive perceptions of the peer network plus intervention. All case managers and facilitators reported enjoying participating in

the project. They reported that they felt effective in their role and felt that the intervention was an effective way to address the needs of the student with autism. In general, facilitators felt that the peer network plus intervention was positive for both the student with autism and the peers involved. The case managers and facilitators felt that the peer network was an effective medium for teaching social skills and that the student with autism's social skills improved in the targeted areas as well as broadly. Isaiah's facilitator mentioned that Isaiah responded better to social skills instruction from his peers than he did when she tried to discuss them with him. She said, "When I would try discussing social skills the student w/ a disability did not seem as interested in the skills vs. when his peer would discuss or correct the skill." Isaiah's case manager agreed, "Yes! This student has daily 1:1 social skills but very little time w/ peers in natural settings to practice when peers also know the target goals." The facilitators also felt that they benefited from participating in the project; they discussed learning skills to implement with other students and getting to know the target student better. Facilitators also were asked whether they felt they could implement these interventions in the future. Overall, the adults agreed that they would know what to do to implement the strategy again and that they were motivated to continue using this strategy.

Overall, this data suggests that the peer network plus intervention was viewed positively and as effective, feasible, and acceptable by all involved parties. It seems that facilitators feel that these are interventions that are useful and could be implemented without a researcher present.

Autism social skills profile. The final research question asked whether the ASSP was sensitive enough to detect improvements in social skills as compared to changes demonstrated on other measures, including the SSIS and Vineland. One reason that the ASSP was developed was

because standardized measures such as the SSIS and Vineland have been shown to not be sensitive enough to be used for progress monitoring for children with ASD (Bellini & Hopf, 2007; Gresham et al., 2001). This is because children with ASD generally exhibit substantial deficits in social functioning, leading to low standard scores on these rating scales regardless of improvements due to social skills training (Gresham et al., 2001). This phenomenon was found in this study; there were no changes of a standard deviation or more found for any of the participants on the SSIS or Vineland. There were some changes of levels for participants with autism on the case manager forms, but none from parents. Although the SSIS and Vineland manuals mention that they can be used for progress monitoring, there are no guidelines for how much change is significant. For this study, the researcher defined significant improvement as a standard deviation or more and slight improvement as a change in level from wave one to wave two. However, without guidelines and without a control group, it is difficult to know whether this is the right criteria for an important change.

As mentioned, one of the reasons that the ASSP was developed was to serve as a more sensitive measure of change for students with autism. However, the same problem as with the SSIS and Vineland became apparent. There are no guidelines for determining what is a meaningful change on the ASSP, and in fact, no information on how to interpret the measure. For instance, Ryder improved from a score of 101 on the case manager ASSP to a score of 114. However, there is no guidance for whether this 13 point increase is meaningful. Two of the participants actually showed decreases on the overall ASSP score according to the case managers. Ultimately, the ASSP was not found to be as useful for progress monitoring as had been hoped. Although improvements were seen for two of the participants, improvements were more consistently seen using the direct observation social skills ratings. One limitation of the

ASSP is that each item only has four options: *never*, *sometimes*, *often*, or *always*. While it might be easy to move from a *never* to a *sometimes* if a child does not display the skill at all before intervention and starts to display the skill after intervention, it might be more difficult to move from *sometimes* to *often*. For instance, Ryder and Aiden were both rated by their case managers as *never* providing compliments to others at wave one but *sometimes* providing compliments to others at wave two. Any compliments that the students gave at wave two would increase this to a rating of 2. On the other hand, Maddie was rated as *sometimes* inviting peers to join her in activities at wave one. Even though direct observations and contact with her case manager indicated that Maddie was inviting peers to join her in activities *more* after intervention, she was still not inviting peers *often*. Her growth in this area was not demonstrated using this scale.

In sum, it seems that the ASSP is not the progress monitoring tool that is needed to detect improvements over short-term interventions for students with autism. When direct observations are possible, these appear to be superior measures of social skills. However, it is important to note that the lack of consistent change seen across participants on the ASSP, SSIS, and Vineland may not indicate a lack of sensitivity but a lack of generalization. It is possible that the social skills were improved within the meetings but that these skills did not generalize enough to other settings to lead to meaningful changes on these rating scales. Although the ASSP's use as a progress monitoring tool was unclear, it was an effective tool for identifying skills in need of intervention.

Limitations

All studies have inherent limitations. One limitation to this study is that there was no "true baseline" that did not have any intervention. The baseline in this study was the peer network only condition and, as was seen by the data, social skills and interactions changed

during this phase. It would be useful to know what the students' social skills and interactions would have looked like in similar conditions without the peer network itself being formed. Just being in a peer network sets up opportunities for interactions that may not be present in the students' daily lives. For instance, Maddie had very few social opportunities with peers prior to her network forming; due to her baseline including the peer network, these zero levels were not observed. Future research would benefit from adding in classroom observations or observations during the lunch hour or transitions that might more clearly indicate baseline rates of social skills and interactions. Similarly, all measures that were taken at wave one and wave two (e.g., parent and case manager packets, SSIS, Vineland, ASSP) are limited because both interventions were present between the two waves. Thus, it is unclear if changes on these measures are due to the peer network plus or would have been present with only the peer network intervention.

One of the hallmarks of peer network plus interventions, and peer networks in general, is that they are individualized to fit the needs of the students involved and to fit the school setting. This is important in that it promotes social validity and feasibility. However, this individualization is also a limitation of the study as the interventions were not exactly the same across participants. For example, Isaiah's peer network had seven peers whereas the rest of the participants had three peers in their peer networks. The activities chosen by the peer networks varied considerably (e.g., playing board games, making a poster, going on a nature walk). The amount of facilitation also varied across networks. For instance, Maddie's facilitator was almost always present and would repeat Maddie's words when her peers could not understand her. Aiden's facilitator often let the peers lead the meeting and took a more background role. All of the networks did have the necessary main components for the peer network plus intervention.

However, this inconsistency in networks may make comparison between the participants more challenging.

The targeted social skills in this study were scored using Likert scales created by the research team. Although this method has been used in previous research (e.g., Mason et al., 2012) and was useful in scoring the individual skills on the same scale, there are limitations with this method. Although the Likert scales were written as objectively as possible and were improved by multiple members of the research team, whenever behaviors are scored on quality as well as quantity, some subjectivity is introduced. Future research may benefit from examining social skills using direct frequency measures. This method would be particularly useful if participants had the same targeted skills.

Breaking network meetings into multiple data collection periods was done for several reasons. First, in the applied behavior analysis literature, observation sessions of 10 min are a common and accepted time period for data observation (Iwata et al., 1994; Asmus et al., 1999). Often times, data is collected over a longer period of time, such as 45-60 min, with multiple 10 min observation recordings collected across the longer total session. Second, in order to have enough data points to make decisions regarding the effectiveness of the intervention components, more data points than a single data point per session were required. The intervention was a semester long and only involved ten network meetings. Finally, the quality of interactions that occurred during network meetings was subject to change across the entire network meeting. By having data coded at the beginning, middle, and end of the network meeting we were able to track these differences if they occurred and make recommendations for engaging the student at points in the meeting that were observed to have less frequent engagement. For example, Isaiah's interactions at the beginning of network meetings were more frequent and of better quality than

those observed at the end of network meetings. By breaking the network meetings into multiple observation periods, this difference was evident. Had the entire network meeting been one data point, these temporal changes would not be noticeable and the data would have likely overestimated the quality of the participants' interactions and social skills. Regardless of these benefits, there are limitations to breaking the network meetings into multiple observations. By having three data points for each network meeting, these data points are not as independent as they would be if there was only one data point per network meeting. Each set of three data points are more linked to one another than to the data points that preceded or followed them.

Another limitation of this study was that generalization and maintenance of behaviors were not examined. As mentioned previously, it is possible that changes were not found on the standardized measures used because the skills did not generalize outside of the meetings. The researchers did not take direct measures of the participants' social skills outside of the meetings. In addition, it is not clear whether any gains in social skills were maintained after the end of the intervention. No follow-up data was collected.

Future Research

More research is needed on effective social skills interventions, especially for students at the secondary level. In addition, more research is needed on methods to promote the inclusion of students with autism in general education settings. To support both of these goals, more research should be conducted on utilizing peer-mediated interventions to target social skills. One important finding from the current study that matches with the limited literature available on peer networks was that peer networks alone were effective at promoting social skills and interactions, at least for some of the participants. However, the inclusion of the social skills component improved outcomes. Future research should examine which types of students benefit most from

the explicit social skills component of the peer network plus interventions and which students might benefit equally or more from a more typical peer network. In addition, the specific components of social skills training that are necessary and most effective should be examined. This study did not examine which components of the social skills training program were responsible for the change. Future research should examine whether the training outside of the meeting was necessary or whether incorporating the social skills training into the peer network meetings was sufficient. Furthermore, research should examine which specific steps of the training were influential (e.g., breaking skills down into explicit steps, visual reminders, peer modeling, reinforcement).

This study demonstrated that adding the social skills training component to the peer network led to social skill gains for all students and an increase in social interactions for some participants. Additional research should examine the content of the conversations across meetings to determine if conversations changed qualitatively after the social skills component was added. It is possible that conversations may have shifted to be more focused on the social skills, and thus, less natural and social in nature, after the social skills training component was added.

This study used a consultation model where school staff members served as the interventionists. This model was effective in this study. However, it is not clear to what extent support from the researcher was necessary to the implementation of the interventions. Future research should examine whether school staff members are able to use the ASSP to identify social skills to target on their own and develop the skill sheets and strategies to work with the student and peer network to deliver the focused social skills training. It is important to see how

effective school staff members are at independently running these interventions as this independence would be necessary for scaling the interventions for multiple students.

Given the limits of the standardized measures and the ASSP used, more research should be done to identify the best way to identify skill deficits and measure progress on social skills, taking into account which methods are feasible in schools. Research should be conducted to give guidelines for interpreting results and monitoring progress using the ASSP. The field would benefit from examining the impacts of peer network plus interventions utilizing a true baseline, where it would be clearer how students with autism are impacted by networks alone and networks with the social skills component. Finally, generalization and maintenance of skills should be examined in future research looking at using these interventions for social skills training. This is needed to determine whether these interventions are effective in producing meaningful and long-term change or if they are only effective in the peer network context.

Summary

Including students with autism in the general education setting continues to be a major educational goal. Research has consistently found, however, that just having students with autism in the same classrooms as typically developing peers often fails to lead to increased social interactions (e.g., Carter et al., 2005). One reason that students with autism may not benefit sufficiently from being in the same setting as general education peers is that they have social deficits that may make it difficult to interact appropriately in these settings (Bellini et al., 2007). This study examined the effectiveness of a peer network intervention with an explicit social skills training component (peer network plus) on improving students with autism's targeted social skills as well as their interactions with peers. Results showed that all participants had improved targeted social skills after the systematic introduction of the social skills training

component to the peer network. Independent raters found that the data displayed *Strong Overall Evidence* for the effectiveness of the social skills training component on improving students' targeted skills. There was *Moderate Overall Evidence* for the effectiveness of the social skills training component on increasing the number of interactions students with autism had with their peer network members during the meetings. Overall, this study found that the peer network plus intervention was an effective intervention for improving the targeted social skills of participants. In addition, all participants involved (i.e., students with autism, peers, facilitators and case managers) reported that they found the intervention socially valid and rated their experiences extremely favorably.

The data in this study provides an extension to previous research by: (a) examining high school children with ASD utilizing a peer network, (b) including an experimental analysis of the effects of direct social skill instruction during the peer network, (c) demonstrating that the inclusion of direct skill instruction improved students targeted social skills, (d) verification that the peer network on its own is very useful to improve social interactions for some of the students, (e) school staff were trained and able to implement the intervention with very good fidelity, (f) the ASSP was not a sensitive enough measure to detect social skill changes over the course of treatment but was useful for selecting target skills, and (g) social validity was very acceptable for all participants involved. Deliberate program planning that provides ongoing and consistent opportunities for students with ASD to learn and develop social skills and ongoing social interactions with their same age peers is a critical element missing for many high school students with autism. Friendship and social connections are a quality of life issue that often is a secondary focus for students with autism and other developmental disabilities. This study demonstrated that by providing an intervention that required a low level of preparation, training, and

implementation, clear gains in social skills and social contacts/friendships resulted. The results presented elucidate important implications for researchers who study social skills and interactions of children with ASD, for practitioners looking to incorporate a social skills curriculum into peer-mediated interventions, and for the training of school staff to promote the social behaviors and connections of children with ASD.

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**Appendix A:
IRB Approval Letter**



Submission ID number: [2013-0905](#)

Title: Social Skills Instruction for Students with Autism Spectrum Disorders: Examining the Impacts of Social Skills Instruction Delivered Through a Peer Network

Principal Investigator: JENNIFER ASMUS

Point-of-contact: JENNIFER ASMUS, TIFFANY BORN

IRB Staff Reviewer: JEFFREY NYTES

The convened ED IRB reviewed the above-referenced Initial review application and made the following determination: Modifications Requested - Conditional Approval pending site permission.

This protocol is conditionally approved per the recommendations of the Full Board, pending receipt of site approval documentation. Once site permission has been submitted to the IRB, a letter granting full approval will be provided and consent forms will be stamped.

Please contact the appropriate IRB office with general questions: Health Sciences IRBs at 608-263-2362 or Education Research and Social & Behavioral Science IRBs at 608-263-2320. For questions related to this submission, contact the assigned staff reviewer.

**Appendix B:
District Approval Letter**

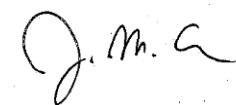
Dear District Administrator,

Thank you for agreeing to allow us to invite high schools in your district to participate in the study “Social Skills Instruction for Students with Autism Spectrum Disorders: Examining the Impacts of Social Skills Instruction Delivered Through a Peer Network” or **Peer Network Plus**.

As you are aware, the purpose of this project is to evaluate the effectiveness and feasibility of a peer network intervention with a targeted social skills training component for high school students with autism spectrum disorders.

Prior to beginning the study, we would like to confirm your willingness to allow us to invite high schools in your district to participate. We look forward to working with teachers, students, and families in your community!

Sincerely,



Jennifer Asmus, Ph.D.

Professor of School Psychology



Tiffany Born, M.S.

Doctoral Student in School Psychology

Our district agrees to participate in the **Peer Network Plus** study.

District Name: _____

Name of Administrator: _____

Signature

Date

Please return this form to:

Tiffany Born

Waisman Center, Room A103, 1500 Highland Avenue, Madison, WI 53705

(920) 621-8424

Appendix C: Parent of Student with ASD Consent Letter



Waisman Center
University of Wisconsin–Madison

1500 Highland Avenue • Waisman Center, Room A101 • Madison, WI 53705 • (608) 890-1033 *telephone* • (608) 265-3441 *fax*

Dear Parent of _____:

We invite you and your child to participate in a research study looking at the benefits of peer networks with social skills training on students with and without autism spectrum disorders in high school classrooms. We hope to learn how the social skills, friendships, and school participation of students with autism are improved when a peer group is developed that focuses, in part, on social skills training of targeted skills. We are inviting students with autism, along with several of their schoolmates, to participate in this study. Your child was selected to participate. If you and your child agree to participate, your child will be involved in a peer network **as long as** appropriate staff members who are interested and able to participate are also available.

What Are Peer Network Groups?

We will help teachers and/or paraprofessionals at the school identify several peers without disabilities to be part of a peer network group. These peers will first meet with a school staff person to learn more about your child and the ways in which they might interact with your child during different times of the school day, such as between classes, at lunch, or before/after school. Your child's teachers will decide which classmates will be involved and what information will be shared with them. The peer group—along with your child—will meet together at school about every week during the semester to plan where and how they will interact together, as well as to brainstorm ideas for enhancing your child's social participation. Meetings will occur at a time that is agreeable to the group (e.g., lunch, before or after school). Meetings will NOT occur during instructional time. In addition, prior to network meetings, the network facilitator may meet with your child to teach targeted social skills that you and your child's teachers indicate your child could use more practice on. As part of the network meetings, your child and his or her peers will describe, model, and practice these social skills in a natural context. Although a teacher or paraprofessional will facilitate the group, students will help plan and implement the group as independently as appropriate.

What Information Will We Collect?

We will observe your child as they participate in typical classroom activities three times *at the beginning of the semester* in order to complete an autism assessment measures. We would also observe and video record your child and his/her peer network members as they meet each week. In addition, we would ask you to:

- Complete a questionnaire asking about your child's social support needs, as well as your thoughts about this project with you twice: now and at the end of this semester. Each questionnaire will take about 45 minutes to complete and you can complete it by mail, telephone, or on the Internet.
- Allow teachers to provide us with ratings of your child's social skills, everyday living skills, peer relationships, support needs, and educational progress in the classroom.
- Allow the school to provide us a copy of your child's current class schedule and IEP, as well as let us view his/her cumulative records to collect disability assessment information. This

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information will only be seen by research staff for the purpose of learning about students' educational background and progress.

- Allow us to ask your child how he/she likes being part of this project.
- Allow your child to be video recorded during network meetings for use by the research team and for demonstration purposes for university classroom or conference presentations. These video recordings would only be shared with the research team and short segments may be used as part of university teaching or as part of a conference presentation.

You will receive a \$20 gift card for each of the two surveys that you complete.

What Are the Benefits to You and Your Child?

There are no direct benefits to you or your child. However, in previous studies, students had more social interactions and larger friendship networks when peer network strategies began. In addition, your child may strengthen his or her existing social skills through this intervention.

Are There Any Risks?

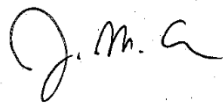
In our previous projects, students have enjoyed having peer networks. However, should your child ever feel uncomfortable meeting with peers or being part of this project, he/she may withdraw at any time by telling a teacher or project staff. We are also asking teachers to let us know of any signs that your child might want to stop. As we publish or present findings from this study, the names of participating students, teachers, and schools will never be used. To minimize the risk that any information we gather could be connected back to individual participants, we store all data securely in our project offices and de-identify it using codes. This project has been approved by your child's high school; however, you and your child's participation are completely voluntary. If you or your child decide not to participate or to later withdraw from the study there will be no consequence. Your child can continue having a peer network even if you no longer want him/her to be involved in the research.

What If You Want More Information?

We encourage your questions about the research at any time by contacting Dr. Jennifer Asmus at (608) 262-3027 or asmus@wisc.edu or Tiffany Born at (608) 890-1033 or tborn@wisc.edu. In addition, copies of any of the assessments used in this project are available for you to see. Questions about your rights as a research participant should be directed to the Education Research IRB (608) 262-9710 or edirb@education.wisc.edu.

Please return the attached form indicating whether you agree.

Sincerely,



Jennifer Asmus, Ph.D.
Professor of School Psychology



Tiffany Born, M.S.
Doctoral Graduate Student in School Psychology

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1500 Highland Avenue • Waisman Center, Room A101 • Madison, WI 53705 • (608) 890-1033 *telephone* • (608) 265-3441 *fax*

Dear Special Educators and Paraprofessionals:

We invite you to participate in a research project focused on the social and academic participation of students with autism spectrum disorders in high school. Specifically, we are looking at how a peer-mediated strategy with a social skills training component impacts the social skills, social relationships, and school involvement of students with autism. One of your students has been selected to participate in our project (see permission form for the name of the student).

What Will My Participation Involve?

We would ask you to complete an information packet to provide us with ratings of the student with disabilities' social skills, everyday living skills, peer relationships, support needs, and educational progress in the classroom during the beginning and the end of the semester. In addition, we ask that you would be willing to consult with us about the student and his or her social skills and support needs as needed throughout the semester in order to improve our intervention.

Providing this written information will take about 60 minutes and you will receive a \$25 stipend for completing an information packet at each of the two time points.

Are There Any Benefits to Me?

There are no direct benefits to you. Our project is designed to provide helpful information to teachers, administrators, and families about strategies for enhancing the social participation of students with disabilities in their schools. We will share back with you what we learn about these strategies.

Are There Any Risks?

As we publish or present findings from this study, the names of participating students, teachers, and schools will never be used. To minimize the risk that any information we gather could be connected back to individual participants, we store all data securely in our project offices and de-identify it using codes. The researchers will be the only ones who view this information and individual information will not be shared with administrators at the school. This project has been approved by your high school; however, your participation is completely voluntary. If you decide not to participate—or to later withdraw from the study—it will have no effect on your employment status with the school.

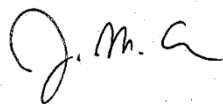
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What If I Want More Information?

We encourage your questions about the research at any time by contacting Dr. Jennifer Asmus at (608) 262-3027 or asmus@wisc.edu or Tiffany Born at (608) 890-1033 or tborn@wisc.edu. In addition, copies of any of the assessments used in this project are available for you to see by request. Questions about your rights as a research participant should be directed to the Education Research IRB (608) 262-9710 or edirb@education.wisc.edu.

Please return the attached form indicating whether you agree to participate in this project.

Sincerely,

Handwritten signature of Jennifer Asmus in black ink.

Jennifer Asmus, Ph.D.
Professor of School Psychology

Handwritten signature of Tiffany Born in black ink.

Tiffany Born, M.S.
Doctoral Graduate Student In School Psychology

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University of Wisconsin – Madison

Case Manager Permission Form

Name: _____

School: _____

Participating Student(s) with Disabilities: _____

Role: *(Check all that apply)* General Educator Special Educator Intervention facilitator SEA **YES**, I agree to participate in this study. **NO**, I do not wish to participate in this study.

If you checked **yes**, sign below to indicate that you have read the attached consent letter and voluntarily agree to participate.

*Signature*_____
Date

Address: _____

Phone: _____

E-Mail: _____

(optional)

Please return this form in the envelope provided or to the following address. You may keep a copy of the letter.

Peer Network Plus
c/o Tiffany Born
Waisman Center, Room A105
1500 Highland Ave
Madison WI 53705

Appendix E: Facilitator Consent Letter

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Waisman Center
University of Wisconsin–Madison

1500 Highland Avenue • Waisman Center, Room A101 • Madison, WI 53705 • (608) 890-1033 *telephone* • (608) 265-3441 *fax*

Dear Educator:

We invite you to participate in a research study examining the benefits of peer network strategies with a social skills training component on students with and without autism spectrum disorders in high school. We hope to learn how social skills, friendship, and social participation are impacted when structured social groups are developed for students that focus, in part, on targeted social skills. To this end, we are inviting youth with autism, several of their schoolmates, and a school staff member who is willing to facilitate this network to participate.

What Will My Participation Involve?

Peer network strategies involve establishing a small group of peers to interact with and support the social participation of a student with severe disabilities. Our project will provide you with training on how to use this strategy and we will offer you ongoing support as you establish a peer network for one student. In addition, we will provide you with training on teaching targeted social skills to the student with a disability prior to network meetings and encouraging practice of the skills during network meetings. This initial training workshop will last approximately 2 total hours. You may choose to attend peer network training workshops scheduled at the Waisman Center or to be trained 1:1 with a research staff at a time that works well for you (e.g., lunch, before or after school). Research staff would be happy to come to your school or another location. We will show you how to invite peers, lead network meetings, and support the participating students throughout one semester. Network meetings typically last about 30-45 minutes, occur every week, and take place at a time and location determined by the network, such as during students' lunch or in a classroom right before or after school. Network meetings will not occur during instructional time. A member of the project team will be available throughout the semester to share ideas and assist you in this role.

What Information Will We Collect?

We would ask you to provide us with feedback on your involvement in the project and the extent to which you felt the strategies benefited students. This questionnaire will take about 10 minutes to complete. In addition, a member of our team will be present at the network meetings and will be recording the interactions that occur between the student with autism and the peer network members as well as rating the targeted social skills of the student with autism. You and a research team member will also be asked to complete a short form regarding the activities that take place each meeting. If you and all members of the peer network agree, network meetings may also be recorded for research purposes, University course instruction, and/or conference presentations only.

A parent or guardian has already provided permission for their child in this project.

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Are There Any Benefits to Me?

There are no direct benefits for your participation. However, as part of this project, you will learn an evidence-based strategy for promoting the social participation of students with severe disabilities. We will also share back with you what we learn from other facets of our project addressing school inclusion and social relationships.

Is There Any Compensation for my Time?

You will receive a \$200 stipend for each student for whom you set up a peer network.

Are There Any Risks?

As we publish or present findings from this study, the names of participating students, teachers, and schools will never be used. To minimize the risk that any information we gather could be

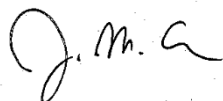
connected back to individual participants, we store all data securely in our project offices and de-identify it using codes. The researchers will be the only ones who view this information and individual information will not be shared with administrators at the school. If you agree to allow videotaping of the network meetings, only research team members or members of the researcher's dissertation committee may view portions of the video. This project has been approved by your high school; however, your participation is completely voluntary. If you decide not to participate—or to later withdraw from the study—it will have no effect on your employment status with the school.

What If I Want More Information?

We encourage your questions about the research at any time by contacting Dr. Jennifer Asmus at (608) 262-3027 or asmus@wisc.edu or Tiffany Born at (920)-621-8424 or tborn@wisc.edu. In addition, copies of any of the assessments used in this project are available for you to see by request. Questions about your rights as a research participant should be directed to the Education Research IRB (608) 262-9710 or edirb@education.wisc.edu.

Please return the attached form indicating whether you agree to participate in this project.

Sincerely,



Jennifer Asmus, Ph.D.

Professor of School Psychology



Tiffany Born, M.S.

IRB Approval Date: 11/12/2013 Date IRB Approval Expires: 7/7/2014 FWA00005399 ED/SBS IRB University of Wisconsin – Madison

Interventionist Permission Form

Name: _____

School: _____

Participating Student(s) with Disabilities: _____

Role: *(Check all that apply)* General Educator Special Educator Intervention facilitator SEA

YES, I agree to participate in this study and to allow network meetings to be **video recorded** for use by the research team only.

YES, I agree to participate in this study but do **NOT** allow network meetings to be **video recorded**.

NO, I do not wish to participate in this study.

If you checked **yes**, sign below to indicate that you have read the attached consent letter and voluntarily agree to participate.

*Signature*_____
Date

Address: _____

Phone: _____

Email: _____

Please return this form in the envelope provided or to the following address. You may keep a copy of the letter.

Peer Network Plus
c/o Tiffany Born
Waisman Center, Room A103
1500 Highland Ave
Madison WI 53705

IRB Approval Date: 11/12/2013 Date IRB Approval Expires: 7/7/2014 FWA00005399 ED/SBS IRB University of Wisconsin – Madison

Appendix F: Student Assent Script



Waisman Center
University of Wisconsin–Madison

1500 Highland Avenue • Waisman Center, Room A101 • Madison, WI 53705 • (608) 890-1687 *telephone* • (608) 265-3441 *fax*

I am from the University of Wisconsin. We want to learn how high school students work together in their classrooms and make friends. This is called a research study. This study will include students with and without disabilities.

If you want to, one of the school staff members will help you meet a new group of friends called “peer partners.” You will get together with these peer partners about every week at a time the group decides on (such as lunch or before or after school). During your meetings we will be videotaping so we can see what activities you do and how your friendship changes. You will also see and talk with your peer partners in the hallways, at lunch, or at other times at school. If there is a student who you want to be a peer partner, you can tell your teacher.

We will also sit in your classroom to watch about three times this semester. We will ask your teacher about your learning goals and who you like to spend time with. And we will ask your parents about the things you do when you are not at school. One adult will talk with you and show you different ways to talk and be involved with friends. Finally, we will ask you later how you liked being in the project.

We hope this project will help your teachers learn how to help you and other students make friends and learn more at school.

Your parent(s) said it is okay for you to do this. But, you do not have to have peer partners if you do not want to. And if you ever want to stop having peer partners, that is okay. Just tell a teacher or us. It will be no problem. You or your parents can contact Dr. Jennifer Asmus at (608) 262-3027 or asmus@wisc.edu with any questions. In addition, copies of any of the assessments used in this project are available for you to see. Questions about your rights as a research participant should be directed to the Education Research IRB (608) 262-9710 or edirb@education.wisc.edu.

 Would you like to have peer partners? Yes No
 Can we watch you in your classroom? Yes No
 Is it okay if we videotape you meeting with your peers each week? Yes No

Name of Student: _____

Assent obtained by (please print): _____

Signature

Date

Appendix G: Peer Network Members Parental Consent Letter



Waisman Center
University of Wisconsin–Madison

IRB Approval Date: 11/12/2013 Date IRB Approval Expires: 7/7/2014 FWA00005399 ED/SBS IRB University of Wisconsin – Madison

1500 Highland Avenue • Waisman Center, Room A101 • Madison, WI 53705 • (608) 890-1033 *telephone* • (608) 265-3441 *fax*

Dear Parent of _____:

We invite your child to participate in a research study looking at the benefits of peer network groups on high school students with and without autism spectrum disorders. We hope to learn how the social skills, friendships, and school involvement of students with autism are improved when a peer group is developed. We are inviting students with autism, along with 3-6 of their schoolmates, to participate in this semester-long project. Your child is being invited because he/she was recommended by a teacher as someone who might enjoy and benefit from being part of a student's peer group.

What Are Peer Network Groups?

Peer network groups involve establishing a small group of peers who get to know and interact with a student with severe disabilities at various times during the week, such as between classes, at lunch, or before/after school. Your child—along with several schoolmates—would meet together with a teacher for a 45 minute orientation meeting to learn more about the student's interests and communication, and to arrange social contacts at different times throughout the week (e.g., between classes, at lunch, or before/after school). The peer group will meet together at school about every week during the semester to plan and talk about their interactions together, as well as to brainstorm ideas for enhancing the social participation of the student with autism. During these meetings, the group will also discuss and practice appropriate social skills. The meetings will last about 30 minutes and will be scheduled at a time and location determined by the group (e.g., every Monday at lunch). The meetings will NOT be held during instructional time.

What Information Will We Collect?

We will collect information about the peer network group meetings from the adults who will be facilitating each group as well as from our research team. We will be observing the network meetings and recording information about the student with autism's interaction with peers, including your child. In addition, we are asking you to:

- Allow your child to tell us about their school and extracurricular involvement at the beginning and end of the semester, and tell us how he/she liked being part of this project at the end of the semester. These brief questionnaires will each take about 10 minutes to complete.
- **OPTIONAL:** Allow your child to be video recorded during network meetings. If you and your child agree to allow us to, we may record the network meetings for use by the research team. These video recordings would only be used for research purposes, for conference presentations, and/or for University course instruction. If you or your child do not want to have your child video recorded, your child can still participate in the study and we will not video record the network meetings.

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What Are the Benefits to You and Your Child?

There are no direct benefits to you and your child. However, in our past projects, students have reported personal growth and the development of new friendships from getting to know their schoolmates with disabilities. We hope similar benefits will come from this project.

Are There Any Risks?

As we publish or present findings from this study, the names of participating students, teachers, and schools will never be used. To minimize the risk that any information we gather could be connected back to individual participants, we store all data securely in our project offices and de-identify it using codes. This project has been approved by your child's high school; however, your child's participation is completely voluntary. If you decide not to have your child participate or

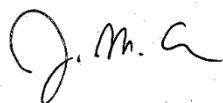
want to later withdraw him/her from the study, it will have no negative effect on the educational services your child is receiving. Your child can continue being part of the peer group even if you no longer want him/her to be involved in the research.

What If I Want More Information?

We encourage your questions about the research at any time by contacting Dr. Jennifer Asmus at (608) 262-3027 or asmus@wisc.edu or Tiffany Born at (608) 890-1033 or tborn@wisc.edu. In addition, copies of any of the assessments used in this project are available for you to see by request. Questions about your rights as a research participant should be directed to the Education Research IRB (608) 262-9710 or edirb@education.wisc.edu.

Please return the attached form indicating whether you agree to participate in this project.

Sincerely,



Jennifer Asmus, Ph.D.

Professor of School Psychology



Tiffany Born, M.S.

Doctoral Graduate Student in School Psychology

IRB Approval Date: 11/12/2013 Date IRB Approval Expires: 7/7/2014 FWA00005399 ED/SBS IRB University of Wisconsin – Madison

Permission Form

Parent/Guardian Permission:

Yes No I give permission for my child to participate in this research project.

Yes No I give permission for my child to be videotaped during peer network meetings.

If you checked **yes** above, sign below to indicate that you have read the attached letters and voluntarily allow your child to participate.

Parent/Guardian Name

Parent/Guardian Signature

Date

Student Name

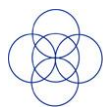
High School

Please have your child return this form to the teacher who is conducting the peer network or send the form to the following address. You may keep a copy of the letter.

Peer Network Plus
c/o Tiffany Born
Waisman Center, Room A103
1500 Highland Ave
Madison WI 53705

IRB Approval Date: 11/12/2013
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University of Wisconsin – Madison

Appendix H: Peer Network Members Assent Letter



Waisman Center
University of Wisconsin—Madison

1500 Highland Avenue • Waisman Center, Room A101 • Madison, WI 53705 • (608) 890-1033 *telephone* • (608) 265-3441 *fax*

Dear Student,

We are from the School of Education at the University of Wisconsin. We are doing a research study about how students with and without disabilities develop relationships in high schools. The purpose of this study is to look at how the friendships and school involvement of students with autism are enhanced when a peer network group is formed.

If you choose to participate, you will be asked to be part of a peer network for one of your schoolmates with a disability. These groups will also involve 3-6 other students. You will meet with a teacher for an initial orientation that will last about 45 minutes. The group will then get together every week with the student for about 30 minutes to get to know each other, plan times to connect with each other throughout the week (such as between classes, at lunch, or before or after school), and share ideas for helping the student be more involved in the life of the school. Meetings will take place at a time the group agrees upon and may be before or after school or during lunch or a study hall. Meetings will NOT occur during instructional time. As part of this group, you may also be asked to support your schoolmate with a disability in practicing important social skills for high school students. The group will be led by a teacher who will help guide the group.

At the end of the semester, we will ask for your feedback on the project. We will also ask you about your school and extracurricular involvement and why you are interested in the project.

Hopefully, this study will help teachers learn how to help students develop new friendships and be more active in their school. In our past projects, students have told us that they enjoyed participating in this way. However, if you ever feel uncomfortable as a result of participating in this project, you may stop at any time. Your name will never be used when we talk or write about this study. Only the researchers will see the individual information collected in this project.

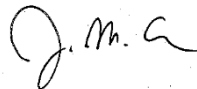
As part of the study, we are looking to video record peer network meetings so that the research team can view them at a later time. If you agree, we may video record the peer network meetings you are involved in. Only the research team and the researcher's dissertation committee will view the videos. If you would not like to be video recorded, you can still participate in the study and we will not record the network meetings.

Your parent or guardian has said that it is okay for you to be in this project. You do not have to be in the study if you do not want to. If you want to stop, just tell your teacher or us. You may stop at any time without any problem. Even if you decide to stop being part of the research project, you are still welcome to continue being part of the group. If you have any questions now, or any time during the study, please contact Dr. Jennifer Asmus at (608) 262-3027 or asmusc@education.wisc.edu (608) 890-1033 or tborn@wisc.edu. In addition, copies of any of the assent forms for this project are available for you to see. Questions about your rights as a research subject are directed to the Education Research IRB (608) 262-9710 or edirb@education.wisc.edu.

IRB Approval Date: 11/12/2013 Date IRB Approval Expires: 7/7/2014 FWA00005399 ED/SBS IRB University of Wisconsin – Madison

**Please return the attached form indicating whether you agree to participate in this project.
You may keep a copy of this letter.**

Sincerely,



Jennifer Asmus, Ph.D.
Professor of School Psychology



Tiffany Born, M.S.
Doctoral Graduate Student in School Psychology

IRB Approval Date: 11/12/2013
Date IRB Approval Expires: 7/7/2014
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University of Wisconsin – Madison

Peer Network Member Assent Form

Name: _____

School: _____

- YES**, I agree to participate in this study and to be video recorded during network meetings.
- YES**, I agree to participate in this study but **DO NOT** agree to be video recorded during network meetings.
- NO**, I do not wish to participate in this study.

If you checked **yes**, sign below to indicate that you have read the attached letter and voluntarily agree to participate.

Signature

Date

Please return this form to the teacher you are working with or to the following address. You may keep a copy of the letter.

Peer Network Plus
 c/o Tiffany Born
 Waisman Center, Room A105
 1500 Highland Ave
 Madison WI 53705

IRB Approval Date: 11/12/2013 Date IRB Approval Expires: 7/7/2014 FWA00005399 ED/SBS IRB University of Wisconsin – Madison

**Appendix I:
Autism Social Skills Profile**

Autism Social Skills Profile			
<i>Scott Bellini</i>			
Child's Name:	<small>FIRST</small>	<small>MIDDLE</small>	<small>LAST</small>
Birthdate:	<small>MO. DAY YEAR</small>	Age: _____	Sex: <input type="checkbox"/> Female <input type="checkbox"/> Male Today's Date: _____
School:			<small>MO. DAY YEAR</small>
			Grade: _____
Your Name:	<small>FIRST</small>	<small>MIDDLE</small>	<small>LAST</small>
Relationship to Child:	<input type="checkbox"/> Mother <input type="checkbox"/> Father <input type="checkbox"/> Guardian <input type="checkbox"/> Other _____		
Street Address:	_____		
City:	_____	State: _____	Zip: _____
Phone: (_____)	_____		
<p>The following phrases describe skills or behaviors that your child might exhibit during social interactions or in social situations. Please rate HOW OFTEN your child exhibits each skill or behavior independently, without assistance from others (i.e., without reminders, cueing and/or prompting). You should base your judgment on your child's behavior over the last 3 months.</p> <p>Please use the following guidelines to rate your child's behavior:</p> <p>Circle N if your child never or almost never exhibits the skill or behavior.</p> <p>Circle S if your child sometimes or occasionally exhibits the skill or behavior.</p> <p>Circle O if your child often or typically exhibits the skill or behavior.</p> <p>Circle V if your child very often or always exhibits the skill or behavior.</p> <p>Please do not skip any items. If you are unsure of an item, please provide your best estimate. You may use the "Brief Description" section to provide additional information on the particular skill or behavior. For instance, if your child will exhibit a particular skill or behavior more frequently when cueing or prompting is provided, or when interacting with adults rather than peers, please make note of this in the "Brief Description" section.</p>			

Autism Social Skills Profile

	Never	Sometimes	Often	Very often	
	N	S	O	V	
Skill Area	How Often				Brief Description
Invites Peers to Join Him/Her in Activities	N 1	S 2	O 3	V 4	
Joins in Activities With Peers	N 1	S 2	O 3	V 4	
Takes Turns During Games and Activities	N 1	S 2	O 3	V 4	
Maintains Personal Hygiene	N 1	S 2	O 3	V 4	
Interacts With Peers During Unstructured Activities	N 1	S 2	O 3	V 4	
Interacts With Peers During Structured Activities	N 1	S 2	O 3	V 4	
Asks Questions to Request Information About a Person	N 1	S 2	O 3	V 4	
Asks Questions to Request Information About a Topic	N 1	S 2	O 3	V 4	
Engages in One-On-One Social Interactions With Peers	N 1	S 2	O 3	V 4	
Interacts With Groups of Peers	N 1	S 2	O 3	V 4	
Maintains the "Give-and-Take" of Conversations	N 1	S 2	O 3	V 4	
Expresses Sympathy for Others	N 1	S 2	O 3	V 4	
Talks About or Acknowledges the Interests of Others	N 1	S 2	O 3	V 4	

Autism Social Skills Profile

	Never	Sometimes	Often	Very often	
	N	S	O	V	
Skill Area	How Often				Brief Description
Recognizes the Facial Expressions of Others	N 1	S 2	O 3	V 4	
Recognizes the Nonverbal Cues, or "Body Language" of Others	N 1	S 2	O 3	V 4	
Requests Assistance From Others	N 1	S 2	O 3	V 4	
Understands the Jokes or Humor of Others	N 1	S 2	O 3	V 4	
Maintains Eye Contact During Conversations	N 1	S 2	O 3	V 4	
Maintains an Appropriate Distance When Interacting With Peers	N 1	S 2	O 3	V 4	
Speaks With an Appropriate Volume in Conversations	N 1	S 2	O 3	V 4	
Considers Multiple Viewpoints	N 1	S 2	O 3	V 4	
Offers Assistance to Others	N 1	S 2	O 3	V 4	
Verbally Expresses How He/She Is Feeling	N 1	S 2	O 3	V 4	
Responds to the Greetings of Others	N 1	S 2	O 3	V 4	
Joins a Conversation With Two or More People Without Interrupting	N 1	S 2	O 3	V 4	
Initiates Greetings With Others	N 1	S 2	O 3	V 4	

Autism Social Skills Profile

	Never	Sometimes	Often	Very often	
	N	S	O	V	
Skill Area	How Often				Brief Description
Provides Compliments to Others	N 1	S 2	O 3	V 4	
Introduces Self to Others	N 1	S 2	O 3	V 4	
Politely Asks Others to Move out of His/Her Way	N 1	S 2	O 3	V 4	
Acknowledges the Compliments Directed at Him/Her by Others	N 1	S 2	O 3	V 4	
Allows Peers to Join Him/Her in Activities	N 1	S 2	O 3	V 4	
Responds to the Invitations of Peers to Join Them in Activities	N 1	S 2	O 3	V 4	
Allows Others to Assist Him/Her With Tasks	N 1	S 2	O 3	V 4	
Responds to Questions Directed at Him/Her by Others	N 1	S 2	O 3	V 4	
Experiences Positive Peer Interactions	N 1	S 2	O 3	V 4	
Compromises During Disagreements With Others	N 1	S 2	O 3	V 4	
Responds Slowly in Conversations	N 1	S 2	O 3	V 4	
Changes the Topic of Conversation to Fit Self-Interests	N 1	S 2	O 3	V 4	
Misinterprets the Intentions of Others	N 1	S 2	O 3	V 4	

Autism Social Skills Profile

	Never	Sometimes	Often	Very often	
	N	S	O	V	
Skill Area	How Often				Brief Description
Makes Inappropriate Comments	N 1	S 2	O 3	V 4	
Engages in Solitary Interests and Hobbies	N 1	S 2	O 3	V 4	
Ends Conversations Abruptly	N 1	S 2	O 3	V 4	
Fails to Read Cues to Terminate Conversations	N 1	S 2	O 3	V 4	
Exhibits Fear or Anxiety Regarding Social Interactions	N 1	S 2	O 3	V 4	
Experiences Negative Peer Interactions	N 1	S 2	O 3	V 4	
Engages in Socially Inappropriate Behaviors	N 1	S 2	O 3	V 4	
Exhibits Poor Timing With His/Her Social Initiations	N 1	S 2	O 3	V 4	
Is Manipulated by Peers	N 1	S 2	O 3	V 4	
Engages in Solitary Activities in the Presence of Peers	N 1	S 2	O 3	V 4	

For more information on how to use this assessment tool in the context of teaching social skills, see S. Bellini, *Building Social Relationships: A Systematic Approach to Teaching Social Interaction Skills to Children and Adolescents with Autism Spectrum Disorders and Other Social Difficulties* ©2006; AAPC Publishing; www.asperger.net



Appendix J: Case Manager Wave 1 Packet

Name of Student: _____ School: _____
Name of Teacher: _____

Thank you for participating in the *Peer Network Plus* intervention study! The goal of this project is to evaluate a strategy for supporting the social relationships and school participation of high school students with disabilities while enhancing social skills.

This assessment packet includes the following materials:

1. A questionnaire asking about the student's (a) educational program, (b) educational goals, and (c) social relationships.
2. The Social Skills Improvement System (SSIS), which provides us information about this student's social skills and any challenging behaviors.
3. The Vineland Adaptive Behavior Scales- Second Edition (VABS-II) containing rating scales on the student's (a) communication, (b) daily living skills, and (c) socialization.
4. The Autism Social Skills Profile (ASSP), which provides information about skills or behaviors the student may or may not engage in within social situations.

Please answer each of the items in this packet to the best of your knowledge. This student's parent or guardian has given permission for you to share this information. This information will help us learn how students benefit from the intervention. If, at any point, you have questions about these assessments or the project, please do not hesitate to contact us (see below).

Please return the completed packet by: _____
You will receive a \$25 gift card for completing this information packet.

To provide gift cards, we are required by the university to collect only the last 4 digits of your social security number. Please provide this information below or contact us by telephone if you'd prefer to give this information by phone.

_ _ _ _

Date completed: _____

What is your primary role in this school? *Check all that apply.*

- | | |
|---|---|
| <input type="checkbox"/> ₁ Special education teacher | <input type="checkbox"/> ₅ Case manager |
| <input type="checkbox"/> ₂ Related services provider (e.g., OT, PT, SLP) | <input type="checkbox"/> ₆ School psychologist |
| <input type="checkbox"/> ₃ Special education assistant or paraprofessional | <input type="checkbox"/> ₇ School guidance counselor |
| <input type="checkbox"/> ₄ General education teacher | <input type="checkbox"/> ₈ Other: _____ |

How well would you say you know this student?

- ₁ Very well ₂ Somewhat well ₃ Not very well



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Project Wave

- Beginning of semester
 End of semester

Section 1: Student Information

1. What is this student's *primary* special education category?

2. What are this student's *secondary* special education categories (if applicable)?

3. Is this student eligible for either of the following?

Free/reduced-price meals program ₁ Yes ₂ No ₃ I don't know

Extended school year (ESY) services ₁ Yes ₂ No ₃ I don't know

4. During the current semester, how much of this student's school day is spent in general education classrooms?

_____ of _____ class periods (e.g., 2 of 8 class periods)

5. To what extent will (or did) this student participate in the WKCE test? *Check one.*

- ₁ Student participates in the *alternate assessment*, in place of the regular test (WAA-SwD)
- ₂ Student participates *with* accommodations
- ₃ Student participates *without* accommodations
- ₄ I don't know

6. What do you consider the top three goals for this student right now? *Check only 3 boxes.*

- ₁ Improve academic performance in the area of: _____(write in)
- ₂ Improve academic performance in the area of: _____(write in)
- ₃ Improve social and communication skills
- ₄ Improve functional or life skills
- ₅ Improve self-advocacy and self-determination skills
- ₆ Improve vocational or career-related skills
- ₇ Prepare for postsecondary education
- ₈ Decrease challenging behaviors
- ₉ Improve fine or gross motor skills, mobility, or other physical functioning
- ₁₀ Other (please specify): _____

Section 2: Student's Relationships with Peers

This section asks about the student's social network. For this section, **we encourage you to ask the student and other school staff who know the student well to give their input.** We'll be asking parents to share similar information about relationships outside of school.

1. List all of the peers at the school with whom the student has had a "social contact" **during the past two weeks** only. A social contact is an extended interaction of 15 min or more (e.g., working together during class, eating lunch together, etc.). Only include the peer's first name, adding a last initial only if necessary to distinguish between two peers.
2. Note how long the two students have known each other: *less than one month* or *more than one month*.
3. Indicate whether the student considers this peer to be a "friend." A friend is a person the student considers to be "socially important" and is someone they "like." If the student says the peer is a friend—even if that view is not reciprocated—check that the student is considered a friend.
4. Provide your own rating of how "socially important" this peer is to the student.
5. Indicate whether this peer also has a significant disability (i.e., cognitive disability or autism).

Check here if the student has *not* had any social contacts during the past two weeks.

First name of peer	Length?	Considered a friend?	How important?	Significant Disability?
1.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
2.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
3.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
4.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
5.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
6.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
7.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
8.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
9.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
10.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
11.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability

First name of peer	Length?	Considered a friend?	How important?	Significant Disability?
12.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
13.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
14.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
15.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
<input type="checkbox"/> Check here if additional space is needed. We will provide you another page for additional names.				

Adapted from the *School-based Social Network Form* (Kennedy & Itkonen, 1994)

6. Write down the names of any other peers at the school **who are not listed above**, but whom the student considers to be a friend. Note how long they have known each other and whether the peer also has a significant disability (i.e., cognitive disability or autism).

Check here if the student does *not* have any other peers he or she would consider to be friends.

First name of peer	Length?	How important?	Significant Disability?
1.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
2.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
3.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
4.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
5.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
6.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
7.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
8.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
9.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
10.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability

Adapted from the *School-based Social Network Form* (Kennedy & Itkonen, 1994)



**Thank you for taking the time to complete this questionnaire
and for participating in this project!**



Appendix K: Case Manager Wave 2 Packet

Name of Student: _____ School: _____

Name of Teacher: _____

Thank you for participating in the *Peer Network Plus* intervention! We are so grateful for the contributions you have already made to the project thus far! We are interested in learning whether and how students may have benefitted from their involvement in the project. This packet is considered a **post-survey**. You'll notice that some of the following measures are almost identical to those you completed toward the beginning of the semester. Comparing this information "before" and "after" helps us determine the impact of the project.

This packet includes:

1. A questionnaire asking about the student's educational program, educational goals, and social relationships.
2. The Social Skills Improvement System (SSIS), which provides information about the student's social skills and any challenging behaviors.
3. The Vineland Adaptive Behavior Scales-Second Edition (VABS-II) containing rating scales on the student's communication, daily living skills, and socialization.
4. The Autism Social Skills Profile (ASSP), which provides information about skills or behaviors the student may or may not engage in within social situations.

Please answer each of the items in this packet to the best of your knowledge. This student's parent or guardian has given permission for you to share this information. If, at any point, you have questions about these assessments or the project, do not hesitate to contact us (see below).

Please return the completed packet by: _____

This information is crucial to our evaluation of the project. You will receive another \$25 gift card for completing this second information packet.

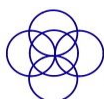
Date completed: _____

What is your primary role in this school? *Check all that apply.*

- | | |
|---|---|
| <input type="checkbox"/> ₁ Special education teacher | <input type="checkbox"/> ₅ Case manager |
| <input type="checkbox"/> ₂ Related services provider (e.g., OT, PT, SLP) | <input type="checkbox"/> ₆ School psychologist |
| <input type="checkbox"/> ₃ Special education assistant or paraprofessional | <input type="checkbox"/> ₇ School guidance counselor |
| <input type="checkbox"/> ₄ General education teacher | <input type="checkbox"/> ₈ Other: _____ |

How well would you say you know this student?

- ₁ Very well ₂ Somewhat well ₃ Not very well



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Project Wave
 Beginning of semester
 End of semester

Section 1: Educational Goals

You noted the following as the top three goals for this student at that beginning of the semester. For each goal, about how much progress would you say the student has made during this semester?

	Some regression	No progress	A little progress	A lot of progress
	Some regression	No progress	A little progress	A lot of progress
	Some regression	No progress	A little progress	A lot of progress

Section 2: Student's Relationships with Peers

This section asks about the student's social network. For this section, **we encourage you to ask the student and other school staff who know the student well to give their input.** We'll be asking parents to share similar information about relationships outside of school.

- List all of the peers at the school with whom the student has had a "social contact" **during the past two weeks** only. A social contact is an extended interaction of 15 min or more (e.g., working together during class, eating lunch together, etc.). Only include the peer's first name (or Boy 1, Boy 2, etc.), adding a last initial only if necessary to distinguish between two peers. If the student has had contact with a peer partner or peer support during this time, include these names below and note this by checking the box. [You'll add other friends with whom the student has *not* had recent contact on the next page under #6.]
- Note how long the two students have known each other: *less than one month* or *more than one month*.
- Indicate whether the student considers this peer to be a "friend." A friend is a person the student considers to be "socially important" and is someone they "like." If the student says the peer is a friend—even if that view is not reciprocated—check that the student is considered a friend.
- Provide your own rating of how "socially important" this peer is to the student.
- Indicate whether this peer also has a significant disability (i.e., cognitive disability or autism).

Check here if the student has *not* had any social contacts during the past two weeks.

First name of peer	Length?	Considered a friend?	How important?	Significant Disability?
1. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
2. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
3. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability

First name of peer	Length?	Considered a friend?	How important?	Significant Disability?
4. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
5. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
6. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
7. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
8. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
9. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
10. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
11. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
12. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
13. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
14. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
<input type="checkbox"/> Check here if additional space is needed. We will provide you another page for additional names.				

Adapted from the *School-based Social Network Form* (Kennedy & Itkonen, 1994)

6. Write down the names of any other peers at the school **who are not listed above**, but whom the student considers to be a friend. In other words, list the names of friends with whom the student has *not* had a social contact in the last two weeks. Note how long they have known each other and whether the peer also has a significant disability (i.e., cognitive disability or autism).

Check here if the student does *not* have any other peers he or she would consider to be friends.

First name of peer	Length?	How important?	Significant Disability?
1. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
2. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability

First name of peer	Length?	How important?	Significant Disability?
3. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
4. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
5. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
6. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
7. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
8. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
9. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
10. <input type="checkbox"/> Peer partner	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability



**Thank you for taking the time to complete this questionnaire
and for participating in this project!**



Appendix L: Parent Wave 1 Packet

Name of Student: _____ School: _____

Name of Parent/Guardian: _____

Thank you for allowing your child to participate in the *Peer Network Plus* intervention! The goal of this project is to evaluate a strategy for teaching social skills and supporting the social relationships and school participation of high school students with autism spectrum disorders.

We are writing to ask you to complete the attached information about your child. This will help us better understand the impact of our project.

This assessment packet includes the following materials:

1. A questionnaire asking about your child’s (a) background information, (b) support needs, and (c) social relationships.
2. The Social Skills Improvement System questionnaire, a series of rating scales assessing your child’s social skills and problematic behaviors.
3. The Autism Social Skills Profile (ASSP), which provides information about skills or behaviors that your child may or may not engage in within social situations.

Please answer each of the items in this packet to the best of your knowledge. This information will help us learn how students benefit from the project. If at any point you ever have questions about this questionnaire or the project, please do not hesitate to contact us.

Please return the completed packet by: _____

You will receive a \$20 giftcard for completing this information packet.

To provide gift cards, we are required by the university to collect only the last 4 digits of your social security number. Please provide this information below or contact us by telephone if you’d prefer to give this information by phone.

— — — —

Date completed: _____



Tiffany Born, MS
(608) 890-1033 or tborn@wisc.edu
Waisman Center, Room A101
University of Wisconsin-Madison
1500 Highland Avenue
Madison, WI 53705

Project Wave
 Beginning of semester
 End of semester

Section 1: About Your Child

1. How many brothers or sisters does your child have? _____
2. Is your child eligible for free or reduced price meals through school? ₁ Yes ₂ No
3. What is your child's ethnicity?
₁ European American ₂ African American ₃ Native American or Alaskan Native
₄ Asian American ₅ Hispanic American ₆ Other: _____
4. Which of these forms of communication does your child currently use? *Check all that apply.*
₁ Cell phone ₂ Email ₃ Facebook ₄ Other social network sites:
₅ Text messaging ₆ Telephone ₇ None of these
5. What do you consider to be the top three goals for your child right now? *Check only 3 boxes.*
₁ Improve academic performance in the area of: _____ (write in)
₂ Improve academic performance in the area of: _____ (write in)
₃ Improve social and communication skills
₄ Improve functional or life skills
₅ Improve self-advocacy and self-determination skills
₆ Improve vocational or career-related skills
₇ Prepare for postsecondary education
₈ Decrease challenging behaviors
₉ Improve fine or gross motor skills, mobility, or other physical functioning
₁₀ Other (please specify): _____
6. How well does your child do each of the following things on his or her own, without help?
- Tell time on a clock with hands?**
₁ Very well ₂ Pretty well ₃ Not very well ₄ Not at all well ₅ Not allowed
- Read and understand common signs, like Stop, Men, Women, or Danger?**
₁ Very well ₂ Pretty well ₃ Not very well ₄ Not at all well ₅ Not allowed
- Count change?**
₁ Very well ₂ Pretty well ₃ Not very well ₄ Not at all well ₅ Not allowed
- Look up telephone numbers in the phonebook or online and use a telephone/cell phone?**
₁ Very well ₂ Pretty well ₃ Not very well ₄ Not at all well ₅ Not allowed
7. Rate the extent to which you agree with each statement.
- My child looks forward to going to school.**
₁ Strongly Disagree ₂ Disagree ₃ Neutral ₄ Agree ₅ Strongly Agree
- My child has friends at school.**
₁ Strongly Disagree ₂ Disagree ₃ Neutral ₄ Agree ₅ Strongly Agree
- My child shares information with me about peers at school.**
₁ Strongly Disagree ₂ Disagree ₃ Neutral ₄ Agree ₅ Strongly Agree

I would like my child to have more interactions with peers at school.

₁ Strongly Disagree ₂ Disagree ₃ Neutral ₄ Agree ₅ Strongly Agree

8. Share the following information about your child.

My child is good at _____ (e.g., swimming, telling jokes)

My child likes to _____ (e.g., listen to music, dance, cook)

My child's favorite TV shows/movies/games are

Describe specific interests and experiences your child has enjoyed (e.g., activities, weekend plans, travel, jobs, volunteering, hobbies, etc.)

What are some other things your child likes to talk about?

Section 2: Your Child's Relationships with Peers

This section asks about your child's social network. You can ask your child and others to give their input as well. We will separately ask a teacher about your child's friendships at school.

1. List all of the peers with whom your child has had a "social contact" **during the past two weeks** only. A social contact is an extended interaction of 15 min or more (such as going to a movie or playing games together). Only include the peer's first name, adding a last initial only if necessary to distinguish between two peers.
2. Note how long your child and the peer have known each other: *less than one month* or *more than one month*.
3. Indicate whether your child considers this peer to be a "friend." A friend is a person the student considers to be "socially important" and is someone they "like."
4. Provide your own rating of how "socially important" this peer is to your child.
5. Indicate whether this peer also has a disability (such as a cognitive disability or autism).

Check here if your child has not had not social contacts during the past two weeks.

First name of peer	Length?	Considered a friend?	How important?	Disability?
1.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
2.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
3.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
4.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
5.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
6.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
7.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
8.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
9.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
10.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability

First name of peer	Length?	Considered a friend?	How important?	Disability?
11.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
12.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
13.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
14.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
15.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
<input type="checkbox"/> Check here if additional space is needed. We will provide you another page for additional names.				

6. Write down the names of any other peers **who are not listed above**, but whom your child considers to be a friend. Note how long they have known each other and whether the peer also has a disability.

Check here if your child does not have any other peers he or she would consider to be friends.

First name of peer	Length?	How important?	Disability?
1.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
2.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
3.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
4.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
5.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
6.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
7.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
8.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
9.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability

First name of peer	Length?	How important?	Disability?
10.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability

**Thank you for taking the time to complete this questionnaire
and for participating in this project!**



Appendix M: Parent Wave 2 Packet

Name of Student: _____ School: _____

Name of Parent/Guardian: _____

Thank you for supporting your child's participation in the *Peer Network Plus* intervention!

We are writing to ask you to complete the attached information about your child. This packet is considered a post-survey. You'll notice that some of the questions we ask are almost identical to those you responded to earlier in the semester. We are interested in learning whether and how children have benefitted from their involvement in the project. Comparing this information "before" and "after" helps us determine the impact of the project.

This assessment packet includes the following materials:

1. A questionnaire asking about your child's (a) background information, (b) support needs, and (c) social relationships.
2. The Social Skills Improvement System questionnaire, a series of rating scales assessing your child's social skills and problematic behaviors.
3. The Autism Social Skills Profile (ASSP), which provides information about skills or behaviors that your child may or may not engage in within social situations.

Please answer each of the items in this packet to the best of your knowledge. If at any point you have questions about this questionnaire, do not hesitate to contact us using the information below.

Please return the completed packet by: _____

You will receive another \$20 gift card for completing this information packet.



Tiffany Born, Project Assistant
 (608) 890-1033 or tborn@wisc.edu
 Waisman Center, Room A101
 University of Wisconsin-Madison
 1500 Highland Avenue
 Madison, WI 53705

Project Wave
 Beginning of semester
 End of semester

Date completed: _____

Section 1: About Your Child

1. You noted the following as the top three goals for your child at that beginning of the semester. For each goal, about how much progress would you say your child has made during this semester?

	Some regression	No progress	A little progress	A lot of progress
	Some regression	No progress	A little progress	A lot of progress
	Some regression	No progress	A little progress	A lot of progress

2. How well does your child do each of the following things on his or her own, without help?

Tell time on a clock with hands?

₁ Very well ₂ Pretty well ₃ Not very well ₄ Not at all well ₅ Not allowed

Read and understand common signs, like Stop, Men, Women, or Danger?

₁ Very well ₂ Pretty well ₃ Not very well ₄ Not at all well ₅ Not allowed

Count change?

₁ Very well ₂ Pretty well ₃ Not very well ₄ Not at all well ₅ Not allowed

Look up telephone numbers in the phonebook or online and use a telephone/cell phone?

₁ Very well ₂ Pretty well ₃ Not very well ₄ Not at all well ₅ Not allowed

3. Rate the extent to which you agree with each statement.

My child looks forward to going to school.

₁ Strongly Disagree ₂ Disagree ₃ Neutral ₄ Agree ₅ Strongly Agree

My child has friends at school.

₁ Strongly Disagree ₂ Disagree ₃ Neutral ₄ Agree ₅ Strongly Agree

My child shares information with me about peers at school.

₁ Strongly Disagree ₂ Disagree ₃ Neutral ₄ Agree ₅ Strongly Agree

I would like my child to have more interactions with peers at school.

₁ Strongly Disagree ₂ Disagree ₃ Neutral ₄ Agree ₅ Strongly Agree

My child made new friends at school this semester.

₁ Strongly Disagree ₂ Disagree ₃ Neutral ₄ Agree ₅ Strongly Agree

Section 2: Your Child's Relationships with Peers

This section asks about your child's social network. You can ask your child and others to give their input as well. We will separately ask a teacher about your child's friendships at school.

1. List all of the peers with whom your child has had a "social contact" **during the past two weeks** only. A social contact is an extended interaction of 15 min or more (such as going to a movie or playing games together). Only include the peer's first name, adding a last initial only if necessary to distinguish between two peers. [You'll add other friends with whom the student has *not* had recent contact on the next page under #6.]
2. Note how long your child and the peer have known each other: *less than one month* or *more than one month*.
3. Indicate whether your child considers this peer to be a "friend." A friend is a person the student considers to be "socially important" and is someone they "like."
4. Provide your own rating of how "socially important" this peer is to your child.
5. Indicate whether this peer also has a disability (such as a cognitive disability or autism).

Check here if your child has not had not social contacts during the past two weeks.

First name of peer	Length?	Considered a friend?	How important?	Disability?
1.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
2.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
3.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
4.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
5.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
6.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
7.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
8.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
9.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
10.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability

First name of peer	Length?	Considered a friend?	How important?	Disability?
11.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
12.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
13.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
14.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Considered a friend <input type="checkbox"/> Not considered a friend	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability

Check here if additional space is needed. We will provide you another page for additional names.

6. Write down the names of any other peers **who are not listed above**, but whom your child considers to be a friend. In other words, list the names of friends with whom your child has not had a social contact in the last two weeks. Note how long they have known each other and whether the peer also has a disability.

Check here if your child does not have any other peers he or she would consider to be friends.

First name of peer	Length?	How important?	Disability?
1.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
2.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
3.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
4.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
5.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
6.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
7.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
8.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability
9.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability

First name of peer	Length?	How important?	Disability?
10.	<input type="checkbox"/> Less than 1 month <input type="checkbox"/> More than 1 month <input type="checkbox"/> Unsure	<input type="checkbox"/> Not very important <input type="checkbox"/> Somewhat important <input type="checkbox"/> Very important	<input type="checkbox"/> Has a disability <input type="checkbox"/> Does not have a disability



Thank you for taking the time to complete this questionnaire and for participating in this project! We will follow up again with you at the beginning of the next school semester.



**Appendix N:
Wave 1 Peer Questionnaire**

Peer Questionnaire

Thank you for participating in the *Peer Network Plus* project! We would like you to complete the attached information about yourself. This will help us better understand the impact of our project.

Answer each of the items to the best of your knowledge. This information will help us learn how students benefit from the project. If at any point you ever have questions about this questionnaire, do not hesitate to contact us.

Please return the completed questionnaire to: _____ **by:** _____

Your Name: _____ School: _____ Date completed: _____

I. About You

We are thrilled that you are part of the Peer Network Plus project!

Can you share with us why you chose to be part of the project?

What is your gender? ₁Male ₂Female

I. School Activities

Which school activities are you participating in during this school year? *Check all that apply.*

- ₁ Band, orchestra, chorus, choir, or other music group
- ₂ School play or musical, drama club
- ₃ Student government
- ₄ Academic honor society (such as NHS or BETA club)
- ₅ School yearbook, newspaper, or literary magazine
- ₆ Academic clubs (such as debate, foreign language, or science clubs)
- ₇ Hobby clubs (such as art, computers, photography, or chess)
- ₈ Social activism club (such as an environmental or political club)
- ₉ Vocational or professional club (such as DECA, FTA, FHA, or FFA)
- ₁₀ Sports team or athletic club
- ₁₁ Service-learning or volunteer experiences
- ₁₂ I am involved in the following other school activities *not* listed above:

₁₃ I have *not* been involved in any school activities during this school year

Have you been a “peer partner” or “peer support” to a student with a disability in the past?

- ₁ Yes, when? _____ ₂ No

II. After School Activities

Below are activities often done outside of school. Please indicate whether you have done this activity in the last two weeks or in the past year. Leave blank any activities you have not done in the past year. In addition, indicate who else was involved in the activity.

Activity	Indicate if you have done this activity recently.	With whom did you do this activity? <i>Check all that apply.</i>
Going to the movies	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Going to the mall	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Doing chores at home (such as cleaning, caring for a pet)	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Doing hobbies, please list: _____	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Using the computer for games, e-mail, or web surfing	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Hanging out with friends in person	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Communicating with friends on the phone or computer	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Playing on a sports team (such as bowling or basketball)	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Taking sports lessons (such as karate or swimming)	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Taking music, art, or dance lessons; performing in a play	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Volunteering	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Attending worship services at a faith community	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Attending a youth group through a faith community	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Using the public library	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Going to an athletic club or a community recreation center	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Other: _____	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Other: _____	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others

Thank you for your participation!

**Appendix O:
Wave 2 Peer Questionnaire**



Follow-Up Peer Partner Questionnaire

Thank you for participating in the *Peer Network Plus* program! We would like you to complete the attached information about yourself. This will help us better understand the impact of our project.

Answer each of the items to the best of your knowledge. This information will help us learn how students benefit from the project. If at any point you ever have questions about this questionnaire, do not hesitate to contact us.

Please return the completed questionnaire to: _____ by: _____

Your Name: _____ School: _____ Date completed: _____

I. About You

What grade are you in? _____

What is your ethnicity?

- ₁ European American
 ₂ African American
 ₃ Native American or Alaskan Native
₄ Asian American
 ₅ Hispanic American
₆ Other: _____

II. School Activities

Which school activities are you participating in during this school year? Check all that apply.

- ₁ Band, orchestra, chorus, choir, or other music group
₂ School play or musical, drama club
₃ Student government
₄ Academic honor society (such as NHS or BETA club)
₅ School yearbook, newspaper, or literary magazine
₆ Academic clubs (such as debate, foreign language, or science clubs)
₇ Hobby clubs (such as art, computers, photography, or chess)
₈ Social activism club (such as an environmental or political club)
₉ Vocational or professional club (such as DECA, FTA, FHA, or FFA)
₁₀ Sports team or athletic club
₁₁ Service-learning or volunteer experiences
₁₂ I am involved in the following other school activities *not* listed above:

-
- ₁₃ I have *not* been involved in any school activities during this school year

III. After School Activities

Below are activities often done outside of school. Please indicate whether you have done this activity in the last two weeks or in the past year. Leave blank any activities you have not done in the past year. In addition, indicate who else was involved in the activity.

Activity	Indicate if you have done this activity recently.	With whom did you do this activity? Check all that apply.
Going to the movies	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Going to the mall	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Doing chores at home (such as cleaning, caring for a pet)	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Doing hobbies, please list: _____	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Using the computer for games, e-mail, or web surfing	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Hanging out with friends in person	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Communicating with friends on the phone or computer	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Playing on a sports team (such as bowling or basketball)	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Taking sports lessons (such as karate or swimming)	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Taking music, art, or dance lessons; performing in a play	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Volunteering	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Attending worship services at a faith community	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Attending a youth group through a faith community	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Using the public library	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Going to an athletic club or a community recreation center	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Other: _____	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others
Other: _____	<input type="checkbox"/> Past 2 weeks <input type="checkbox"/> Past year	<input type="checkbox"/> Friends <input type="checkbox"/> Family members <input type="checkbox"/> Others

Thank you for your participation!

Appendix P: Isaiah's Skill Sheet

Participant: Isaiah School: _____
 Date: _____ Primary Observer/IOA: _____/_____
 Observation # _____ Length of Observation: _____

Participant's Target Skills:

1. Maintains the "Give and Take" of Conversations:

a) There is an appropriate balance between conversational partners. The student has approximately the same number of initiations and responses as the peer(s) to whom he or she is interacting. In addition, the student spends approximately the same amount of time speaking as do his or her peers. There is also an appropriate balance between "role" in the conversation. The student sometimes initiates and sometimes responds and asks as well as answers questions.

b) There is an appropriate flow or uninterrupted continuity to the conversation. The student uses comments and questions to keep the conversation going and responds to the comments and questions of others within 3 seconds. On average, each interaction (an initiation with responses back and forth without a five-second pause between interactive behaviors) has more than five interactions back and forth on the same topic.

2. Joins a conversation with two or more people without interrupting: When others are talking, the student waits (by staying quiet while looking toward those talking) for an appropriate time to join the conversation (e.g., a break in the conversation, a brief pause, after someone finishes saying something) and joins the conversation using appropriate language and pragmatics (e.g., "Oh... are you talking about...", an on topic question or comment). Appropriate pragmatics occurs when topic matches, volume and tone matches, comment/question matches what was spoken prior, and appropriate openers and transition phrases are used as appropriate." Nonexamples: speaking over the peers, yelling from across the room

3. Talks about topics, including others' interests, other than the student's special interest, and maintains the neutral topic: The student allows conversation to turn to others' interests or neutral topics as evidenced by:

- a. Initiating questions and/or making positive statements about the topic without attempting to steer conversation back to a personal special interest.
- b. Responding to others' questions and comments that involve topics other than their special interest, with follow up questions or comment, without steering the conversation back to their special interest.

Please rate the participant on each of the target skills using the Likert scales listed below. If the behaviors displayed fall between two odd-numbered descriptors, select the even number score (i.e., if voice volume is between a one and a three, select two). **Fill out a new sheet during each ten minute interval.**

Maintains the "Give and Take" of Conversations:

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

<p>Conversations consistently do not have an appropriate balance or flow. The student either dominates conversation or does not participate equally. When the student does respond, he either responds too quickly (e.g., cutting others' off) or too slowly (more than 3 seconds).</p>	<p>Occasionally, conversations display either an appropriate balance or flow (but not both). Most conversations are lacking in both an appropriate balance and flow. Conversations may be one-direction (questions by one side, answers by the other).</p>	<p>The conversations generally have an appropriate balance or flow but not both. For instance, there may be an appropriate balance to the conversation (nearly the same proportion of back and forths) but interactions are short (containing less than 5 back and forths).</p>	<p>The majority of conversations consist of appropriate balance and flow. However, in less than half of opportunities, the student failed to maintain the "give and take" of the conversation by not responding to a question or comment, responding in more than 3 seconds, responding more or less than the conversational partner.</p>	<p>All criteria of the operational definition above are met. There is consistently an appropriate balance and flow between conversational partners.</p>
---	--	---	---	---

Comments:

Joins a Conversation with Two or More People without Interrupting:

1	2	3	4	5	6	7	8	9
<p>When others are talking, the student always interrupts the conversation abruptly (without waiting for a pause) and using inappropriate language or gestures (e.g., rude language, yelling) or typically fails to join the conversation altogether.</p>		<p>When others are talking, the student usually interrupts the conversation either abruptly or by using inappropriate language or gestures but often joins the conversation.</p>		<p>Most times, when others are talking, the student waits for an appropriate time to join the conversation. However, entering the conversation is awkward in terms of pragmatics (e.g., voice volume or tone doesn't match conversational partners, off-topic remark,</p>		<p>Every time, when others are talking, the student waits for an appropriate time to join the conversation. However, entering the conversation is awkward in terms of pragmatics (e.g., voice volume or tone doesn't match conversational partners, off-topic remark,</p>		<p>Every time, when others are talking, the student waits for an appropriate time to join the conversation and joins using appropriate, on-topic language and pragmatics (i.e., topic matches, volume and tone matches, comment/question matches what was spoken prior, appropriate openers and transition phrases are used as</p>

			speaker does not transition from what others are saying; not using an appropriate “opener” or transition phase).	speaker does not transition from what others are saying; not using an appropriate “opener” or transition phase).	appropriate).
--	--	--	--	--	---------------

Comments:

Talks about Topics other Than Special Interests

1	2	3	4	5	6	7	8	9
The student always actively resists changes in conversation away from his special interests by a) continuing to speak about his special interest when the topic has changed, b) saying a derogatory comment regarding the changed topic, or c) leaving or no longer engaging in the activity.		The student usually resists (either actively or passively) discussions about topics other than the student’s special interests by a) continuing to speak about his special interest when the topic has changed, b) failing to appropriately comment or ask a question about the other topic, c) saying a derogatory comment regarding the changed topic, d) leaving or no longer engaging in the activity, or e) engaging in less than three back and forths with the peer on the topic of conversation.		The student does not actively resist changes in conversation or discussions about topics other than the student’s special interests (e.g., does not attempt to steer the conversation back to the topic of special interests) but usually does not extend the conversation regarding others’ interests by adding detail, asking questions or making positive statements about the topic. The student does not contribute much to the conversation (adds less than three turns-questions, comments to the		In most instances, the student appropriately engages in conversations other than the student’s special interests. However, at times, the student does not continue the conversation on the other “non-special interest” topics as evidenced by less than five back and forths on the topic before switching back to a topic of the student’s special interests.		The student shows appropriate positive affect (i.e., smiles, nodding of head, laughs, appropriate orienting/looking, positive comments) when conversations turn toward other interests than the student’s self-interest. The student appears engaged and interested by initiating questions and/or making positive statements about the topic and responding to others’ questions and comments with appropriate enthusiasm. The conversation on the other interest maintains at least five back and forths before switching back to a topic of the student’s special interests.

			conversation topic).				
--	--	--	---------------------------------	--	--	--	--

Comments: _____

**Appendix Q:
Maddie's Skill Sheet**

Participant: Maddie School: _____
 Date: _____ Primary Observer/IOA: _____/_____
 Observation # _____ Length of Observation: _____

Participant's Target Skills:

1. **Responds to the invitations of peers to join them in activities/ conversation (responses):** When peers invite the student to join them in an activity (e.g., using words or gestures) or in a conversation (e.g., by asking a question, verbally inviting the student, mentioning the student during their conversation), the student joins in the activity or conversation within 3 seconds (e.g., by moving toward the activity/group or changing positions, taking turns in the game, by responding to the question or comment with a clear verbal or nonverbal communicative act, by adding a related question or a comment).
2. **Invites peers to join her in activities/ conversations (initiations):** The student appropriately initiates an invitation to peers to join her in an activity (e.g., using words or gestures) or in a conversation (e.g., by asking a question, verbally inviting the student, mentioning the student during conversation), after 3 seconds without conversation or activity, or through a clear change in topic/activity from the ongoing interaction.
3. **Asks questions to request information from a person (initiations/responses):** The student asks questions to request information from peers. The questions could be regarding interests (e.g., "What's your favorite sport?"), activities ("How do I do this?"), thoughts ("What do you think about this?"), or facts (e.g., "Do you know when George's birthday is?"). This excludes questions used as requests for items (e.g., "Can you give me that?").

Please rate the participant on each of the target skills using the Likert scales listed below. If the behaviors displayed fall between two odd-numbered descriptors, select the even number score (i.e., if voice volume is between a one and a three, select two). **Fill out a new sheet during each ten minute interval.**

Responds to the invitations of peers to join them in activities/ conversation (responses):

Note: If limited opportunities, score 1 point lower.

1	2	3	4	5	6	7	8	9
The student never responds to the invitations of peers to join activities or conversations (e.g., by ignoring, actively leaving the area, putting head down)		The student occasionally responds to the invitations of peers to join activities or conversations after prompts and/or a delay longer than 3 seconds.		At most opportunities, the student appropriately responded to the invitations of peers to join activities or conversations within 3 seconds of an		At most opportunities, the student appropriately responded to the invitations of peers to join activities or conversations within 3 seconds without		At each opportunity, the student responded to the invitations of peers to join activities or conversations within 3 seconds (see operational definition) without

			adult prompt.		prompting.		prompting.
--	--	--	----------------------	--	-------------------	--	-------------------

Comments: _____

Invites peers to join her in activities/ conversations (initiations):

NOTE: If meet criteria for higher score, but one or more questions were prompted, choose the even score below.

1	2	3	4	5	6	7	8	9
The student never invites peers to join her in activities or conversations. She does not initiate toward peers at all.		<p>One time during the observation period, the student invites peers to join her in activities or conversation without prompts but the invitations are unclear or not appropriate (e.g., awkward pauses, without eye contact).</p> <p>OR</p> <p>At any time, the student initiates conversation using language that is inappropriate for the school setting (e.g., of a sexual nature).</p>		<p>One time during the observation period, the student appropriately invites peers to join her in activities or conversations (after 3 seconds without conversation or activity or through a clear change in topic/activity from ongoing interaction) without prompts. Initiations are appropriate and clear. Initiations are made at appropriate times (when there is a break in the conversation, when the student would like to begin a new activity), at an appropriate voice level, with appropriate directed eye contact, and appropriate for school (e.g., not</p>		<p>Two times during the observation period, the student appropriately invites peers to join her in activities or conversations (after 3 seconds without conversation or activity or through a clear change in topic/activity from ongoing interaction) without prompts. Initiations are appropriate and clear. Initiations are made at appropriate times (when there is a break in the conversation, when the student would like to begin a new activity), at an appropriate voice level, with appropriate directed eye contact, and appropriate for</p>		<p>At least three times during the observation period, the student appropriately invites peers to join her in activities or conversations (after 3 seconds without conversation or activity, or through a clear change in topic/activity from the ongoing interaction) without prompts. Initiations are appropriate and clear. Initiations are made at appropriate times (when there is a break in the conversation, when the student would like to begin a new activity), at an appropriate voice level, with appropriate directed eye contact, and appropriate for school (e.g., not sexual health).</p>

			sexual health). OR Two times the student invites peers to join her in activities or conversation with prompts but the invitations are unclear or not appropriate (e.g., awkward pauses, without eye contact).	school (e.g., not sexual health). OR Three times the student invites peers to join her in activities or conversation with prompts but the invitations are unclear or not appropriate (e.g., awkward pauses, without eye contact).	
--	--	--	--	--	--

Comments: _____

Asks questions to request information from a person (initiations/responses)-

NOTE: If meet criteria for higher score, but one or more questions were prompted, choose the even score below.

1	2	3	4	5	6	7	8	9
The student does not ask any questions (or any statements that could be taken as questions) to request information from a person during the observation period.		One time , the student asks a question to peer(s) to request information without prompts but the question is NOT appropriately delivered. OR At any time, the student asks something that is inappropriate for the school setting (e.g., of a sexual nature).		One time during the observation period, the student appropriately asks distinct questions to peers to request information. The questions are asked at appropriate times (when the question matches the conversation or activity occurring, when there is a break in the conversation), at an appropriate voice level, and with appropriate directed eye contact, and		Two times during the observation period, the student appropriately asks distinct questions to peers to request information (see operational definition for types of questions). The questions are asked at appropriate times (when the question matches the conversation or activity occurring, when there is a break in the conversation), at an appropriate voice level, and		At least three times during the observation period, the student appropriately asks distinct questions to peers to request information without prompts (see operational definition for types of questions). The questions are asked at appropriate times (when the question matches the conversation or activity occurring, when there is a break in the conversation),

			<p>appropriate for school (e.g., not sexual health). The questions are asked without prompts.</p> <p>OR</p> <p>Two times the student asks distinct questions to peers to request information without prompts but they are NOT appropriate.</p>		<p>with appropriate directed eye contact, and appropriate for school (e.g., not sexual health). The questions are asked without prompts.</p> <p>OR</p> <p>Three times the student asks distinct questions to peers to request information without prompts but they are NOT appropriate.</p>		<p>at an appropriate voice level, and with appropriate directed eye contact, and appropriate for school (e.g., not sexual health).</p>
--	--	--	--	--	---	--	--

Comments: _____

Appendix R: Ryder's Skill Sheet

Participant: Ryder School: _____
 Date: _____ Primary Observer/IOA: _____/_____
 Observation # _____ Length of Observation: _____

Participant's Target Skills:

1. **Maintains the "Give and Take" of Conversations:**
 - a) There is an appropriate balance between conversational partners. The student has approximately the same number of initiations and responses as the peer(s) to whom he or she is interacting. In addition, the student spends approximately the same amount of time speaking as do his or her peers. There is also an appropriate balance between "role" in the conversation. The student sometimes initiates and sometimes responds and asks as well as answers questions.
 - b) There is an appropriate flow or uninterrupted continuity to the conversation. The student uses comments and questions to keep the conversation going and responds to the comments and questions of others within 3 seconds. On average, each interaction (an initiation with responses back and forth without a five-second pause between interactive behaviors) has more than five interactions back and forth on the same topic.
2. **Takes Turns during Games and Activities:** The student appropriately takes turns during games and activities, allowing his peer(s) to have equal time participating in the activity. During games, the student takes his turn and waits patiently (e.g., without leaving the area, without asking the peer to hurry up) while the other peer(s) take their turns. The student does not attempt to continuously participate or to take another's turn. The student remains engaged during others' turns (e.g., the student may pass materials back and forth and/or let the peer know whose turn it is).
3. **Provides Compliments to Others:** The student gives at least one but not more than five compliments to a peer in the ten minute period of time. These compliments are appropriate for friends (e.g., clothing, hair, academic or hobby skills) and are not inappropriate for the school setting (e.g., flirting, sexual references). The student uses an appropriate voice volume and tone (e.g., not joking or sarcastic) and level of eye contact when delivering the compliment. Compliment is not out of the blue and/or off topic. Compliments are directed at an attribute of a person (e.g., "You did great on that!", "I like your shirt," "Great job!") and not at an attribute of the day or activity (e.g., "It's nice out today", "Good game").

Please rate the participant on each of the target skills using the Likert scales listed below. If the behaviors displayed fall between two odd-numbered descriptors, select the even number score (i.e., if voice volume is between a one and a three, select two). **Fill out a new sheet during each ten minute interval.**

Maintains the “Give and Take” of Conversations:

1	2	3	4	5	6	7	8	9
Conversations consistently do not have an appropriate balance or flow. The student either dominates conversation or does not participate equally. When the student does respond, he either responds too quickly (e.g., cutting others' off) or too slowly (more than 3 seconds). Conversation does not occur without prompts and/or scripts.		Occasionally, conversations display either an appropriate balance or flow (but not both). Most conversations are lacking in both an appropriate balance and flow. Conversations may be one-direction (questions by one side, answers by the other). Student interactions rely heavily (more than 80%) on adults' prompts.		The conversations generally have an appropriate balance or flow but not both. For instance, there may be an appropriate balance to the conversation (nearly the same proportion of back and forths) but interactions are short (containing less than 5 back and forths). Adult prompts may be necessary for more than half of the student's interactions.		The majority of conversations consist of appropriate balance and flow. However, in less than half of opportunities, the student failed to maintain the “give and take” of the conversation by not responding to a question or comment, responding in more than 3 seconds, responding more or less than the conversational partner. Adult prompts are rarely used.		All criteria of the operational definition above are met. There is consistently an appropriate balance and flow between conversational partners. Prompts from adults and scripts are not used.

Comments: _____

Takes Turns during Games and Activities:

1	2	3	4	5	6	7	8	9
The student never appropriately takes turns during games and activities. He may stop engaging in the activity altogether when it isn't his turn or attempt to continuously take his turn; may resist letting the other		With prompts, the student is sometimes able to take turns during games and activities. He sometimes attempts to take more turns than he should have or fails to participate in the activity when it is his turn (i.e., doesn't take his turn). When others are taking their turn, he		The student struggles with appropriately taking turns during games and activities but does appropriately take turns when prompted by an adult or a peer. The student does not always (less than 80% of opportunities) remain engaged in the activity while others take their		Without prompts, the student appropriately takes turns during games and activities, allowing peer(s) to have equal time participating in the activity. However, the student does not always remain engaged in the		Without prompts, the student appropriately takes turns during games and activities, allowing his peer(s) to have equal time participating in the activity. The student remains engaged in the activity while others take their turn(s) and waits

student take a turn, Attempts to redirect the student are met with resistance (e.g., yelling, tantrum, throwing down pieces).	appears bored or disinterested by not being oriented/looking toward the activity, yawning, closing his eyes, wandering away, and/or engaging in something else.	turns and may appear bored or disinterested (by not being oriented/looking toward the activity, yawning, closing his eyes, wandering away, and/or engaging in something else).	activity while others take their turns or may not wait patiently. The student may passively engage in the turn taking. That is, with prompts by others, he becomes engaged in the turn taking activity again.	patiently for his turn. For most of the time (more than 80% of opportunities), the student actively engages in the turn taking by: initiating nonverbally and verbally for the other partner to take a turn at appropriate times, and readily initiating and responding that is their own turn.
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Comments: _____

Provides Compliments to Others:

NOTE: If meet criteria for higher score, but one or more compliments were prompted, choose the even score below.

1	2	3	4	5	6	7	8	9
The student does not give any compliments during the time period.		<p>The student gives 1 compliment. The compliment is appropriate in terms of content, but lacks appropriate pragmatics (i.e., without appropriate voice volume or tone) and comes “out of the blue” within a conversation and/or are off topic and doesn’t fit the situation.</p> <p style="text-align: center;">OR</p> <p>The content of at least one compliment/s</p>		<p>The student gives 1 compliment that is appropriate in terms of content and it is given at appropriate time with appropriate pragmatics.</p> <p style="text-align: center;">OR</p> <p>The student gives more than five (6+) compliments to one peer in the same time period. AND The compliments to a peer have generally</p>		<p>The student gives more than 1 but less than 6 (2-5) compliments to a peer with generally appropriate content; however, at least one may be said using inappropriate nonverbal pragmatics (i.e., without appropriate voice volume or tone) or come “out of the blue” within a conversation or are “off topic”</p>		<p>The student gives at least two but not more than five compliments to a peer. These compliments are appropriate for friends in terms of content (e.g., clothing, hair, academic or hobby skills) and are not inappropriate for the school setting (e.g., flirting, sexual references). The student uses appropriate pragmatics, such as an appropriate voice volume and tone (e.g., not joking or sarcastic) and level of eye</p>

	is/are inappropriate for the situation and setting (e.g., flirting, something that makes the peer uncomfortable, backhanded).	appropriate content; however, at least one is said using inappropriate nonverbal pragmatics (i.e., without appropriate voice volume or tone) or come “out of the blue” within a conversation or are “off topic.”	OR The student gives more than five compliments to one peer in the same time period AND they are given at appropriate times and with appropriate pragmatics.	contact when delivering the compliment. Compliment is not “out of the blue” and/or off topic (unless using it as a conversation starter/initiation or an appropriate transition phrase at an appropriate time. The compliments vary in sentence structure and content.
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Comments: _____

**Appendix S:
Aiden's Skill Sheet**

Participant: Ryder School: _____
 Date: _____ Primary Observer/IOA: _____/_____
 Observation # _____ Length of Observation: _____

Participant's Target Skills:

1. **Maintains the "Give and Take" of Conversations:**
 - a) There is an appropriate balance between conversational partners. The student has approximately the same number of initiations and responses as the peer(s) to whom he or she is interacting. In addition, the student spends approximately the same amount of time speaking as do his or her peers. There is also an appropriate balance between "role" in the conversation. The student sometimes initiates and sometimes responds and asks as well as answers questions.
 - b) There is an appropriate flow or uninterrupted continuity to the conversation. The student uses comments and questions to keep the conversation going and responds to the comments and questions of others within 3 seconds. On average, each interaction (an initiation with responses back and forth without a five-second pause between interactive behaviors) has more than five interactions back and forth on the same topic.
2. **Takes Turns during Games and Activities:** The student appropriately takes turns during games and activities, allowing his peer(s) to have equal time participating in the activity. During games, the student takes his turn and waits patiently (e.g., without leaving the area, without asking the peer to hurry up) while the other peer(s) take their turns. The student does not attempt to continuously participate or to take another's turn. The student remains engaged during others' turns (e.g., the student may pass materials back and forth and/or let the peer know whose turn it is).
3. **Provides Compliments to Others:** The student gives at least one but not more than five compliments to a peer in the ten minute period of time. These compliments are appropriate for friends (e.g., clothing, hair, academic or hobby skills) and are not inappropriate for the school setting (e.g., flirting, sexual references). The student uses an appropriate voice volume and tone (e.g., not joking or sarcastic) and level of eye contact when delivering the compliment. Compliment is not out of the blue and/or off topic. Compliments are directed at an attribute of a person (e.g., "You did great on that!", "I like your shirt," "Great job!") and not at an attribute of the day or activity (e.g., "It's nice out today", "Good game").

Please rate the participant on each of the target skills using the Likert scales listed below. If the behaviors displayed fall between two odd-numbered descriptors, select the even number score (i.e., if voice volume is between a one and a three, select two). **Fill out a new sheet during each ten minute interval.**

Maintains the “Give and Take” of Conversations:

1	2	3	4	5	6	7	8	9
Conversations consistently do not have an appropriate balance or flow. The student either dominates conversation or does not participate equally. When the student does respond, he either responds too quickly (e.g., cutting others' off) or too slowly (more than 3 seconds). Conversation does not occur without prompts and/or scripts.		Occasionally, conversations display either an appropriate balance or flow (but not both). Most conversations are lacking in both an appropriate balance and flow. Conversations may be one-direction (questions by one side, answers by the other). Student interactions rely heavily (more than 80%) on adults' prompts.		The conversations generally have an appropriate balance or flow but not both. For instance, there may be an appropriate balance to the conversation (nearly the same proportion of back and forths) but interactions are short (containing less than 5 back and forths). Adult prompts may be necessary for more than half of the student's interactions.		The majority of conversations consist of appropriate balance and flow. However, in less than half of opportunities, the student failed to maintain the “give and take” of the conversation by not responding to a question or comment, responding in more than 3 seconds, responding more or less than the conversational partner. Adult prompts are rarely used.		All criteria of the operational definition above are met. There is consistently an appropriate balance and flow between conversational partners. Prompts from adults and scripts are not used.

Comments: _____

Takes Turns during Games and Activities:

1	2	3	4	5	6	7	8	9
The student never appropriately takes turns during games and activities. He may stop engaging in the activity altogether when it isn't his turn or attempt to continuously take his turn; may resist letting the other		With prompts, the student is sometimes able to take turns during games and activities. He sometimes attempts to take more turns than he should have or fails to participate in the activity when it is his turn (i.e., doesn't take his turn). When others are taking their turn, he		The student struggles with appropriately taking turns during games and activities but does appropriately take turns when prompted by an adult or a peer. The student does not always (less than 80% of opportunities) remain engaged in the activity while others take their		Without prompts, the student appropriately takes turns during games and activities, allowing peer(s) to have equal time participating in the activity. However, the student does not always remain engaged in the		Without prompts, the student appropriately takes turns during games and activities, allowing his peer(s) to have equal time participating in the activity. The student remains engaged in the activity while others take their turn(s) and waits

student take a turn, Attempts to redirect the student are met with resistance (e.g., yelling, tantrum, throwing down pieces).	appears bored or disinterested by not being oriented/looking toward the activity, yawning, closing his eyes, wandering away, and/or engaging in something else.	turns and may appear bored or disinterested (by not being oriented/looking toward the activity, yawning, closing his eyes, wandering away, and/or engaging in something else).	activity while others take their turns or may not wait patiently. The student may passively engage in the turn taking. That is, with prompts by others, he becomes engaged in the turn taking activity again.	patiently for his turn. For most of the time (more than 80% of opportunities), the student actively engages in the turn taking by: initiating nonverbally and verbally for the other partner to take a turn at appropriate times, and readily initiating and responding that is their own turn.
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Comments: _____

Provides Compliments to Others:

NOTE: If meet criteria for higher score, but one or more compliments were prompted, choose the even score below.

1	2	3	4	5	6	7	8	9
The student does not give any compliments during the time period.		The student gives 1 compliment. The compliment is appropriate in terms of content, but lacks appropriate pragmatics (i.e., without appropriate voice volume or tone) and comes “out of the blue” within a conversation and/or are off topic and doesn’t fit the situation. OR The content of at least one compliment/s		The student gives 1 compliment that is appropriate in terms of content and it is given at appropriate time with appropriate pragmatics. OR The student gives more than five (6+) compliments to one peer in the same time period. AND The compliments to a peer have generally		The student gives more than 1 but less than 6 (2-5) compliments to a peer with generally appropriate content; however, at least one may be said using inappropriate nonverbal pragmatics (i.e., without appropriate voice volume or tone) or come “out of the blue” within a conversation or are “off topic”		The student gives at least two but not more than five compliments to a peer. These compliments are appropriate for friends in terms of content (e.g., clothing, hair, academic or hobby skills) and are not inappropriate for the school setting (e.g., flirting, sexual references). The student uses appropriate pragmatics, such as an appropriate voice volume and tone (e.g., not joking or sarcastic) and level of eye

	is/are inappropriate for the situation and setting (e.g., flirting, something that makes the peer uncomfortable, backhanded).	appropriate content; however, at least one is said using inappropriate nonverbal pragmatics (i.e., without appropriate voice volume or tone) or come “out of the blue” within a conversation or are “off topic.”	OR The student gives more than five compliments to one peer in the same time period AND they are given at appropriate times and with appropriate pragmatics.	contact when delivering the compliment. Compliment is not “out of the blue” and/or off topic (unless using it as a conversation starter/initiation or an appropriate transition phrase at an appropriate time. The compliments vary in sentence structure and content.
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Comments: _____

**Appendix T:
Peer Network Plus Observational Coding System**

Overview of Observational Codes

A. Lily (real-time measure)

Level 1: Focus Student and Peer Behaviors		
Focus Student and Peer Behaviors	<ul style="list-style-type: none"> ▪ SWD Initiation- Social ▪ SWD Response- Social ▪ Peer Initiation- Social ▪ Peer Response- Social 	Frequency
Level 2: Proximity		
Proximity (<i>not</i> mutually exclusive)	<ul style="list-style-type: none"> ▪ To peers without disabilities ▪ To adult support personnel (peer network facilitator, 1:1 support, etc.) 	Duration
Level 3: Engagement		
Engagement (mutually exclusive)	<ul style="list-style-type: none"> ▪ Engaged ▪ Not engaged 	Duration

Open a new Lily file for each 10 minute observation. If an observation period lasts for more than 6 minutes but less than 10 minutes, stop the observation when the session ends, save the file, and alert the primary investigator.

B. Social Skills Rating Scale (completed every 10 minutes)

Complete a social skills rating scale for each 10 minute observation. If an observation period lasts for more than 6 minutes but less than 10 minutes, mark the length of the observation on the observation sheet. Each student has his or her own social skills rating scale sheets. Please see these sheets for instructions.

C. Fidelity Form

Complete one fidelity form for each network meeting. Please answer yes (Y) or no (N) to each sub-question. If at least one sub-question is yes under the main questions, also circle yes on the main question. Please see fidelity forms for more instructions.

Observational Codes

Lily

Level 1: Focus Student and Peer Network Member Interaction Behaviors

Initiations and responses are defined as verbal or nonverbal (e.g., gestures, signs) communicative behaviors directed toward another student (focus student or peer network member). Each conversational turn is counted separately without regard to length of utterance.

Each communicative behavior is coded according to its source (i.e., student with disabilities, peer without disabilities) and function (i.e., initiation or response).

Behaviors such as reading aloud to oneself, echolalic behavior, and conversations with teachers, paraprofessionals, or other adults are not to be coded as initiations or responses. Facilitated communication (when an adult guides the hand of the student with disability to type or write) is also NOT coded as interactive behaviors as it does not involve communication from the student with disability.

Communicative behaviors are considered initiations if they are preceded by at least 5 seconds without an interaction or if the student with a disability joins a conversation between peers (which was not being coded). In addition, if multiple peers initiate to the student with a disability, these are all counted as initiations (e.g., “It’s your turn, Sam” from peer one and “Sam, it’s your turn to go” from peer two would count as two peer initiations). All other communicative behaviors are coded as responses.

Only code social exchanges that occur among the focus student and peer network members.

How do you code interactions involving both an adult and a peer?

Code any interactions that are clearly directed to a specific peer or group of peers. If an adult (peer network facilitator or paraprofessional) is present, but the focus student’s initiation or response is clearly directed to both the adult AND a peer, code the interactive behavior as a peer interaction. If both adult(s) and peer(s) are present and the focus student makes a general comment not directly toward a specific peer, do NOT count it. In other words, in a group setting, the default is to not count a comment unless there is compelling reason to think the focus student intended to elicit a response from a peer. This is discerned by considering the content of the comment, the person(s) to whom the focus student is looking, and/or the context of the activity.

Student or Peer Initiations

Initiations are any initial or new interactive behavior demonstrated by the focus student to specific peer(s), or by a specific peer toward the focus student with clear communication intent to evoke a response.

Initiations from the focus student or peers toward each other may occur with or without prompts from adults. If two students initiate toward each other at the same time (e.g., say hi simultaneously), the default is to code the focus student as the initiator.

Code a new initiation if 5 seconds elapse between two interactive behaviors or the focus student joins an ongoing conversation. In addition, if multiple peers initiate to the student with a disability, these are all counted as initiations (e.g., “It’s your turn, Sam” from peer one and “Sam, it’s your turn to go” from peer two would count as two peer initiations). Therefore, a new initiation may be a statement that is produced after 5 seconds of a previous response, a new statement that occurs 5 seconds after the first initiation, a new statement from a new peer prior to a SWD response, or when the SWD joins an ongoing conversation among peers that was not already being coded.

Note: When determining whether 5 seconds have elapsed, always begin counting at the END of the last person’s speech whether or not that person’s speech was coded.

How do you code initiations involving a group of students?

If a focus student initiates to a group of peers, code it as an initiation from the focus student toward peers.

If a peer initiates toward a group of students including the focus student, code as an initiation if the peer's interactive behaviors clearly directed toward or includes the focus student (i.e., the initiation is intended to elicit responses from the focus student along with other students).

*Rule of thumb: If you are not sure if an initiation is produced toward the focus student or peers, put yourself in the situation of the person in question and see if you would feel that the initiation is directed toward you. However, an initiation may not always be recognized by the intended respondent.

Examples of Initiations:

- A peer network member says to the focus student, "Hey, how was your weekend?"
- A peer network member asks a group of students, including the focus student, "Are any of you coming to the dance tonight?"
- A peer network member passes paper to the focus student and also says, "Here you go." (The phrase, "Here you go" is what is being coded as an initiation.)
- The focus student asks the network facilitator and a peer, "Hey, what do you guys think about my painting?"
- The focus student waves to a peer network member, who is looking down and does not respond
- The focus student raises his hand to initiate a "high five" with a peer network member.
- The focus student makes a comment toward the peer network members
- The focus student walks up to a peer network member and shows her something in a book by pointing and looking up at the peer
- A peer network member passes a marker to the focus student (not an initiation) and the focus student says, "Thanks!" (an initiation)
- A peer network member tells the focus student to open the magazine (an initiation) and the focus student follows the command without saying anything (not a response). After 5 seconds, the peer network member tells the student she likes her shoes (another initiation)
- The focus student passes a peer network member a note or a calculator with "hello" typed on it (an initiation)

Nonexamples of Initiations:

- The focus student is talking aloud to himself but the vocalization is not clearly directed toward any specific peers
- The focus student is scripting from movies and not directing this speech toward peers
- During a small-group discussion, the focus student is making a comment toward the peer network facilitator (adult). A peer laughs at the comment (not an initiation) and the focus student turns to the peer and says, "What's so funny?" (initiation)
- The focus student is walking by a teacher and a group of peers while making a comment not directed toward a specific person, "Oh, I forgot to bring back the permission slip for the field trip."

- A peer network member is talking to the adult facilitator and the focus student is looking or smiling at the peer
- While distributing markers to the peer network, a peer walks by the focus student and leaves a marker in front of the focus student
- The paraprofessional says to the focus student, “Say hi.” The focus student looks at the peer for couple seconds and turns his head away
- A peer network member who sits next to the focus student makes a comment to herself, “I wish I had remembered to bring the permission slip back today.”
- A paraprofessional is guiding the focus student’s hands over a keyboard (i.e. facilitated communication)

Student or Peer Network Member Response

A response is any speech, vocalization, gesture, or augmentative behavior demonstrated by the focus student or any peer network member(s) without significant disabilities that overtly follows and adds to an initiation or response from peers or the focus student. The response can be related or unrelated to the topic or question and is produced within 5 seconds of the completion of the last initiation or response. The response must have communicative intent. Responses from the focus student or peers toward each other may occur with or without prompts from adults.

How do you differentiate between acknowledging behaviors and responses?

Do not code behaviors that are just acknowledgments. Acknowledging behaviors are defined as gestural or verbal behaviors that do not add any new information to the ongoing conversation and simply demonstrate attention to the conversation. If you could replace the comment or gesture with a head nod or “I hear you” and have the same meaning, this is an acknowledging behavior and should not be coded. If the comment adds to the conversation or presents the speaker’s personal position on a matter, this **does** count as a response and should be coded. For example, if the person’s comments endorse, agree with, or disagree with the other speaker’s comments, these are responses.

During normal conversation, the ‘listener’ often says ‘yeah’, ‘uh-huh’, ‘right’ or uses other similar verbal statements or head nods just to show he or she is listening. If this occurs and the statement just shows that the listener is following the stream of conversation, these are acknowledgments and are NOT coded. However, these same statements can sometimes be framed in such a way that they are adding to the conversation. For instance, if a peer network member says “Math is stupid!” and the focus student responds, “That’s true!” the phrase “that’s true” would count as a response because it is showing the focus student’s personal position on the matter. Likewise, sometimes these comments and nods can be answers to questions. In this case, they are also coded. For example, if a peer network member asks the focus student, “Did you bring your book today?” and the focus student said “yeah” or nodded, these would count as responses because they are adding to the conversation. Finally, sometimes these comments are asked in a way that is asking a question and these would be coded as responses. For instance, if a student said, “I figured out what I’m writing for my paper” and the focus student responded, “Yeah??” in a way that seemed designed to elicit more information, this ‘yeah’ would count as a response.

If, in the moment, you can't decide whether a comment or gesture was an acknowledging behavior (which wouldn't be coded) or a response (which would be coded), default to NOT coding. It must be clear that an occurrence is truly a response in order to code it.

What do you do if a comment is interjected while the other person is still talking?

If a second person interjects while the first person is still talking, code a response from the person who interjected but do not code the original speaker again if the original speaker just continues their speech as if the second person hadn't said anything. Do code another response from the original speaker if they had stopped talking and restart talking or if their comment somehow reflects or changes because of the interjector's comment.

How do you code behavioral responses?

Do not code any behavioral responses as communicative responses. You should only code social responses with clear communicative intent as responses. For example, code an initiation if a peer network member asks the focus student to pass him a card. If the focus student simply follows this command by passing a card, do NOT code this as a response (it is considered a behavioral response, not a social response). However, if the focus student says, "ok" or "no way" or asks for help from the peer network member, code it as a social response.

How do you deal with group situations?

During group discussions involving multiple peers, after coding the first initiation (either from the focus student or from a peer network member), code any subsequent interaction behaviors (either initiations or responses) between the focus student and any other peers (e.g., different peers join the conversation later) as responses as long as the interaction behavior occurs within 5 seconds of the completion of the previous interaction/response and the topic is consistent.

In group settings, code as peer responses all statements that are explicitly directed toward the focus student. If a peer in the group responds to another peer's comment, do not code this. As always, if you put yourself in the shoes of the focus student and would feel the need to respond, this is a good indication that the previous speech may have been a response.

Examples of group situations:

Tom is the focus student; Kathy and Gina are peer network members

Example 1:

Tom "Hey, guys. How are you?" (SWD Social Initiation)

Kathy "I'm great!" (Peer Social Response)

Gina "I'm doing okay. How are you?" (Peer Social Response)

Tom "I'm doing good." (SWD Social Response)

Example 2:

Tom "Hey, guys. How are you?" (SWD Social Initiation)

Kathy "I'm great! I just got a new video game." (Peer Social Response)

Gina "You got a new video game? Which one?" (Do not code as it is not directed toward Tom)

Kathy “World of Warcraft” (Do not code as it is not directed toward Tom)
 Tom “Oh cool! I want that video game!” (SWD Social Response)

Helpful hint: If two people start talking at the same time, default to coding the student with disability.

Examples of Responses:

- A peer network member asks the student, “What type of music do you like to listen to?” (initiation). The focus student turns on her communication device and activates a message, “Lady Gaga” (response)
- The focus student asks a peer network member, “Can I borrow your pencil?” (initiation). The peer passes a pencil and says “Here” (response)
- A peer makes a comment toward the focus student and another classmate, “Don’t you guys think that’s pretty cool?” (initiation). The focus student nods and responds with vocalization, “Hmm” (response)
- A peer asks the student, “What do you like to do on the weekend?” (initiation). The focus student responds, “It is snowing outside” (response)

Non-examples of Responses:

- The focus student calls a peer, “Hey!” The peer turned his head and looked back to the student but did not say anything (a behavioral response, not coded)
- During a group discussion involving the focus student and three peers, the focus student turns to a fourth peer who is not involved in the conversation and asks, “Did you see that movie?” (initiation from the focus student)
- A peer asks the student, “What type of music do you like to listen to?” The focus student looks away (no response)
- A peer laughs at the focus student’s comments while the focus student is still talking
- A peer network member asks the focus student to go get a book (initiation from peer network member) and the student gets the book without saying anything (behavioral only; no response coded)
- In response to a peer’s question, a paraprofessional guides the focus student’s hands over a keyboard to type a response (i.e. facilitated communication; facilitated communication is never coded).

Proximity (duration)

Proximity of Peer Network Members

A peer network member is within 3 feet of the student with a disability and is in a position that allows him or her to interact with the focus student easily (e.g., facing toward each other or sitting next to each other and facing the same direction). Proximity will be coded if the focus student and a peer do not have to drastically reposition themselves in order to work or interact with one another.

Examples: A peer is sitting directly next to or across the table from the focus student. A peer is standing right behind the focus student in a line.

Nonexamples: A peer and the focus student are sitting back to back at different tables, or the peer network member is walking around the room and happens to be walking by the focus student. An adult stands next to the focus student and blocks the access for the focus student and peers to talk to each other.

Proximity of Adults

An adult (e.g., peer network facilitator, support person, special educator, speech and language pathologist) is within 3 feet of the student with a disability and is positioned in a way that allows him or her to interact with or provide instructions to the focus student.

Examples: The network facilitator is sitting directly next to the focus student and the peer network members. A paraprofessional sits with the focus student at the table while the network meets.

Nonexamples: The network facilitator is sitting at her desk, 10 feet away from the SWD and the peer network members.

Engagement (duration)

The following engagement measures will be coded for the focus student with disabilities. These measures are mutually exclusive and exhaustive. Code any changes in this variable only after 5 seconds have elapsed after going from one state to another.

*Rule of thumb: The code remains the same unless there is a compelling reason to change (i.e., the focus student's attention is clearly shifted from engaged to unengaged or from unengaged to engaged). Thus, if the student seems unengaged for more than 5 seconds but you have reason to believe that the student will be engaged again quickly, do not change the code (e.g., the student goes to get a tissue).

Engaged

The focus student is actively engaged in (i.e., attending to) the peer network meeting. This is defined as looking at peers or the adult facilitator; looking at materials for the group activity (e.g., art work, game), and/or initiating and/or responding to peers or adult facilitators.

Examples: The focus student is talking with peer(s) during the network meeting or is attending to their conversation. The focus student is actively playing games or engaged in the group activity.

Nonexamples: See Not Engaged.

Not Engaged

Code if the focus student is not actively engaged (i.e., attending to) the peer network. This is defined by not looking at the peers or adult facilitator; not looking at materials for the group activity; and not initiating or responding to peer(s).

Examples: Moving around the room during seated activities; looking around the room or staring “off into space”; not paying attention to a speaker (i.e., not looking at the adult or peers); working on assignments for classes; putting head down on table; sleeping. Also included is when no activities and/or conversation are occurring (the network members are just arriving and no conversation is happening).

Nonexamples: See Engaged.

Social Skills Rating Checklist

- Fill out a new Social Skills Rating Checklist for every 10 minute observation
- At the top of the page, list the participant, school, date, observer, observation # (is this the first 10 min, second 10 min, third 10 min, etc.), and the length of the observation.
- Each focus student has his or her own target social skills with Likert scales
- Read the operational definitions as well as the Likert anchors and choose the level that accurately reflects THAT 10 minute observation. If the behaviors displayed fall between two odd-numbered descriptors, select the even number score (i.e., if voice volume is between a one and a three, select two)

Fidelity Checklist

At the top of the fidelity checklist, record the student’s code, the meeting number, the intervention facilitator, the observer, the date, the names of the peer network members, and the total number of students at the meeting (including the SWD).

Different Peers Interacted

This variable documents the number of different peers who had interactions with the focus student (through initiations or responses) during the peer network meeting. Each new peer who interacts with the focus student is counted. If the focus student initiates toward multiple peers, only count the peers who respond to the initiation as peers interacted with unless the initiation is overtly directed toward every peer in the group.

Communication Modes Used During Peer Interactions

Check all of the following behaviors that the focus student used toward peers during interactions that appear to have communicative intent.

None: The focus student did not make any contributions to any interactions that occurred in the peer network meeting (i.e., the focus student did not initiate or respond to any peer during the entire peer network meeting).

Speech: Single words, short phrases, whole sentences, and word approximations that are understood by the listeners that serve communication purposes (if the observer cannot distinguish between a word approximation and vocalization, code as speech)

Example: the focus student produces a word approximation “Sure” in respond to a classmate’s question, “Can I borrow your eraser?”

Nonexamples: See other communication mode categories.

Vocalizations: non-speech sounds with communication intent in which the words are not intelligible to the listener.

Example: The focus student uses his voice to gain peer’s attention.

Nonexamples: See other communication mode categories (e.g., word approximations)

Facial expressions: generic or specific facial and visual behaviors that clearly serve communication purposes.

Gestures: body movements that clearly serve communication purposes, usually involving the use of the head or hands (e.g., headshakes, waving, high five, fist bumps, pointing). Signs also count.

Aided systems: any external communication devices (non-electronic or electronic).

Examples: A peer asks, “What’s your weekend plan?” The focus student points to a picture on her communication board, “Shopping.” The focus student activates a message from his device while facing the peer, “Want to hear a joke?”

Fidelity Questions

For each question, first answer the indented questions yes or no. If at least one of the sub-questions is yes, the main question is answered yes. The fourth question is only applicable when the social skills component has begun.

For question number two, record the total number of students who reported interactions during the week, how many total interactions were reported, and circle where the interactions occurred.

Additional Notes

Record any relevant information about the meeting, including the activities that occurred and any notes regarding the social contacts the peers have had, schedule conflicts, etc. If any negative interactions occurred, record this here.

Appendix U: Lily Collector Screenshot

SWD Initiations - Task(0)	Large Group	Engaged consistent activities	Peer Initiations - Task(0)
SWD Response - Task(0)	Small Group	Engaged inconsistent activities	Peer Response - Task(0)
SWD Initiations - Social(0)	Independent work	Not Engaged	Peer Initiations - Social(0)
SWD Response - Social(0)	1:1 Peer	Prox peer supports	Peer Response - Social(0)
	1:1 Adult		Support Initiations - Task(0)
	No Instruction		Support Response - Task(0)
	Gone	Prox peers w/o disabilities	Support Initiations - Social(0)
FIX(0)	Can't Hear	Prox direct support	Support Response - Social(0)

PN+ = buttons were used during peer network meetings

PN+ = buttons were used during peer network meetings

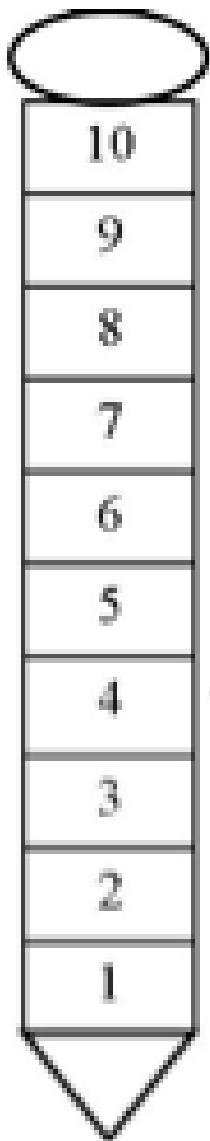
Appendix V: Maddie's SUDS Anxiety Meter

Student: Maddie

Date:

Network Meeting #:

Before Meeting



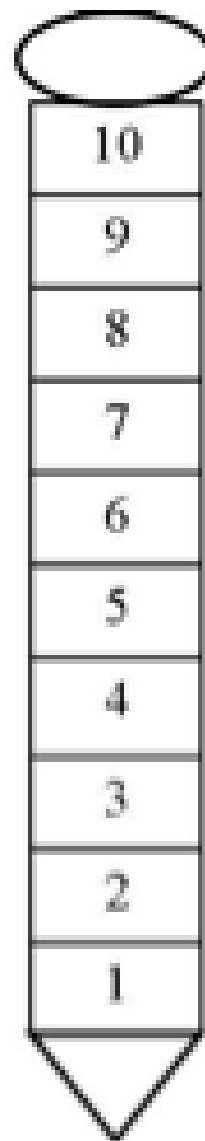
Most Anxious/ Nervous I've Ever Been

Pretty Anxious/Nervous

A Little Nervous/ Anxious

Not at All Nervous/ Anxious

After Meeting



Appendix W: Peer Network Plus Initial Meeting Checklist

Date of Meeting _____ Location of Meeting _____ Adult Facilitator _____

Names of students attending _____

During the initial meeting, be sure to cover all topics/activities below. This time should be more of a discussion and, although it will be led by the adult facilitator, the peers should be active participants in the discussion. Check off each topic/activity as you complete it. **Please return the completed form to the researcher.**

Completed	Topic/Activity
<input type="checkbox"/>	Introductions: Have students introduce themselves and play a fun introductory activity as desired
<input type="checkbox"/>	Background about student with a disability: Ask peers: What do you know about (the student)? Share some of the student's strengths and interests. Provide information about the ways in which the student communicates as it relates to social interactions.
<input type="checkbox"/>	Discuss peer group: Share with students overall goals of social group. Share with students ideas for how to work on goals and ask students: What are some other ways we can work towards these goals? What are the benefits of being part of this group? etc.
<input type="checkbox"/>	Discuss social skills component: Explain the social skills training procedure. Emphasize that this portion should be as natural as possible and encourage peers to reinforce positive social behaviors in meetings and other contacts.
<input type="checkbox"/>	Discuss confidentiality: Discuss with peers: What information do you think it is okay to share about the group? What do you think you should do if someone asks you personally questions about (the student)?
<input type="checkbox"/>	Schedule social contacts: Ask peers: When do you want to meet up with (the student) during the next week? Record the possible schedule of interactions and bring schedule to the regular group meetings.
<input type="checkbox"/>	Schedule regular meeting: Ask peers: when do you want to meet next? Schedule a time and place that works for the peer partners, the student with disabilities and you.
<input type="checkbox"/>	Discussion and Questions: Ask students: What are you excited about? What are your concerns? What do you hope to gain from this experience? What questions do you have?

Notes/Follow up for next meeting

Appendix X: Peer Network Plus Meeting Intervention Checklist

Student: _____ Meeting #: _____
Intervention Facilitator: _____ Observer: _____

Date: _____

Peer Network Members: _____

Total number of students at meeting: _____

Tally of different peers interacted: _____ **Total:** _____**Communication modes used by the focus student during peer interactions:** None Non-speech vocalizations Facial expressions Gestures Speech Aided systems

Circle Y (yes) or N (no) based on whether or not these behaviors occurred during the meeting.

1. Y N Are peer network members and the focus student interacting during the meeting?
- Y N Do students greet each other?
- Y N Does the focus student initiate interactions with peer network members?
- Y N Do peer network members initiate interactions with the focus student?
- Y N Do students engage in a game or activity together?
- Y N Do students engage in conversation together?

When do interactions occur during the meeting (circle all that apply):

Beginning

Middle

End

2. Y N Are peer network members and the focus student reporting that interactions occurred during the week (outside of the meeting)?
- Y N Does the focus student ever initiate interactions?
- Y N Do peer network members initiate interactions?
- Y N Are these interactions reciprocal?
- Y N Are interactions occurring at least once per day?
- Y N Are interactions occurring between more than one peer network member and the focus student?

How many students report interactions during the week? _____

How many total interactions are reported? _____

When were interactions reported as occurring (circle all that apply):

Before school

Between classes

In Class

Lunch

After school

Weekend

3. Y N Does the facilitator support peer partners and the target student?
- Y N Does the facilitator provide structure and facilitate the meetings as needed?
- Y N Does the facilitator check with peer partners weekly about interactions with the focus student?
- Y N Does the facilitator monitor interactions during the meeting?
- Y N Does the facilitator provide praise and feedback to students during or outside of the meeting?
4. Y N N/A Were the targeted social skills addressed/ worked into the meeting?
- Y N Were the **explicit steps** of the skill discussed?

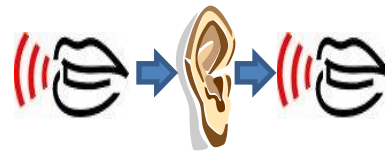
- Y N Did both **peers and the student** engage in a discussion about the skill?
- Y N Did peers **model** the skill?
- Y N Did the student engage in a **role play** around the skill?

Additional notes from meeting/weekly contacts:

Appendix Y: Isaiah's Conversational Skill Steps

If no one is talking...

1. **Think** about prior knowledge.
2. **Say** what you want to say.
 - a. Make a comment
 - b. Ask a question
3. **Ask** the other person what he/she thinks.
4. **Listen** to what the other person says.
5. **Say** what you think.
 - a. Answer a question
 - b. Make a comment/ Add new information
 - c. Ask a related question
6. **Repeat** Steps 3 and 4 (Listen and talk).
7. Make a **closing remark**.



If someone is talking...

1. **Listen** to what the other person is saying.
2. **Wait** for a good time to join the conversation.
 - a. Person finishes talking
 - b. Speaker pauses
3. **Say** something **related** to the conversation.
 - a. If needed, give a joining remark/question
Oh, are you talking about... ?
 - b. Ask a related question
 - c. Make a comment/ Add new information
4. **Listen** to what the other person says.
5. **Say** what you think.
 - a. Answer a question
 - b. Make a comment/ Add new information
 - c. Ask a related question
6. **Repeat** Steps 4 and 5 (Listen and talk).
7. **Make a closing remark**.



**Appendix Z:
Isaiah's Visual Reminders**

Remember:

1. Look at the person who is talking.



2. Listen and think about what is being said.



3. Wait your turn.



4. Stay on topic/ make a comment about the current topic.



Appendix AA:
Isaiah's Conversational Self-Monitoring Sheet

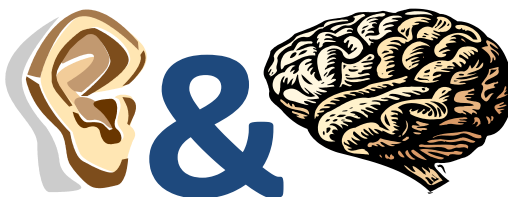
Am I...

1. Looking at the person who is talking?



--

2. Listening and thinking about what is being said?



--

3. Waiting my turn to talk?



--

4. Keeping the conversation going by

a. Asking on-topic questions?

--

b. Making on-topic comments?

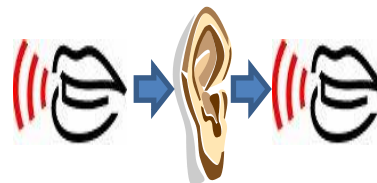
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Appendix BB:
Maddie's Conversational Skill Steps

If no one is talking...

8. **Think** about prior knowledge.
9. **Say** what you want to say.
 - a. Make a comment
 - b. Ask a question
 - c. Give a compliment
10. **Ask** the other person what he/she thinks.
11. **Listen** to what the other person says.
12. **Say** what you think.
 - a. Answer a question
 - b. Make a comment/ Add new information
 - c. Ask a related question
13. **Repeat** Steps 3 and 4 (Listen and talk).
14. Make a **closing remark**.



If someone is talking...

8. **Listen** to what the other person is saying.
9. **Say** something **related** to the conversation.
 - a. If needed, give a joining remark/question
Oh, are you talking about... ?
 - b. Ask a related question
 - c. Make a comment/ Add new information
10. **Listen** to what the other person says.
11. **Say** what you think.
 - a. Answer a question
 - b. Make a comment/ Add new information
 - c. Ask a related question
12. **Repeat** Steps 4 and 5 (Listen and talk).
13. Make a **closing remark**.



Appendix CC:
Maddie's Follow Up Questions Skill Steps

Follow Up Questions

Follow up questions help us:

1. Keep conversations going
2. Learn more about each other

Good times for follow up questions:

1. After someone asks you a question and you answer

e.g., Friend- "Do you like the movie Frozen?"

You- "Yes. Do you?" ←

Friend- "What's your favorite kind of food?"

You- "Pizza. What is yours?" ←

2. After someone says something about herself

e.g., Friend- "I am going up north this weekend?"

You- "What will you do up there?" OR "Where are you going?"

Friend- "I'm excited to go to the mall."

You- "What are your favorite shops?" ←

What....?

Why....?

When....?

How....?

Where....?



Appendix DD:
Maddie's Self-Monitoring Sheet

Am I...

- 1. Looking at the person who is talking or who I am talking to?



--

- 2. Listening and thinking about what is being said?



--

- 3. Keeping the conversation going by:

- a. Asking on-topic questions?

--

- b. Making on-topic comments?

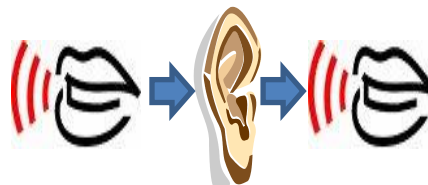
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Appendix EE:
Ryder's Conversational Skill Sheet

If no one is talking...

1. **Think** about prior knowledge.
2. **Say** what you want to say.
 - a. Make a comment
 - b. Ask a question
 - c. Give a compliment
3. **Ask** the other person what he/she thinks.
4. **Listen** to what the other person says.
5. **Say** what you think.
 - a. Answer a question
 - b. Make a comment/ Add new information
 - c. Ask a related question
6. **Repeat** Steps 3 and 4 (Listen and talk).
7. Make a **closing remark**.



If someone is talking...

14. **Listen** to what the other person is saying.
15. **Say** something **related** to the conversation.
 - a. If needed, give a joining remark/question
Oh, are you talking about... ?
 - b. Ask a related question
 - c. Make a comment/ Add new information
16. **Listen** to what the other person says.
17. **Say** what you think.
 - a. Answer a question
 - b. Make a comment/ Add new information
 - c. Ask a related question
18. **Repeat** Steps 4 and 5 (Listen and talk).
19. **Make a closing remark**.



**Appendix FF:
Ryder's Self-Monitoring Sheet**

Am I...

- 1. Looking at the person who is talking or who I am talking to?**



- 2. Listening and thinking about what is being said?**



- 3. Keeping the conversation going by:**

- a. Asking on-topic questions?**

- b. Making on-topic comments?**



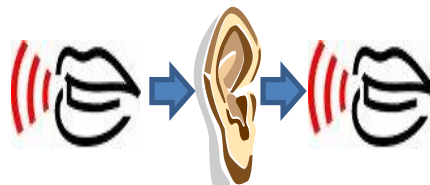
- c. Giving compliments?**



Appendix GG:
Aiden's Conversational Skill Sheet

If no one is talking...

8. **Think** about prior knowledge.
9. **Say** what you want to say.
 - a. Make a comment
 - b. Ask a question
 - c. Give a compliment
10. **Ask** the other person what he/she thinks.
11. **Listen** to what the other person says.
12. **Say** what you think.
 - a. Answer a question
 - b. Make a comment/ Add new information
 - c. Ask a related question
13. **Repeat** Steps 3 and 4 (Listen and talk).
14. Make a **closing remark**.



If someone is talking...

20. **Listen** to what the other person is saying.
21. **Say** something **related** to the conversation.
 - a. If needed, give a joining remark/question
Oh, are you talking about... ?
 - b. Ask a related question
 - c. Make a comment/ Add new information
22. **Listen** to what the other person says.
23. **Say** what you think.
 - a. Answer a question
 - b. Make a comment/ Add new information
 - c. Ask a related question
24. **Repeat** Steps 4 and 5 (Listen and talk).
25. Make a **closing remark**.



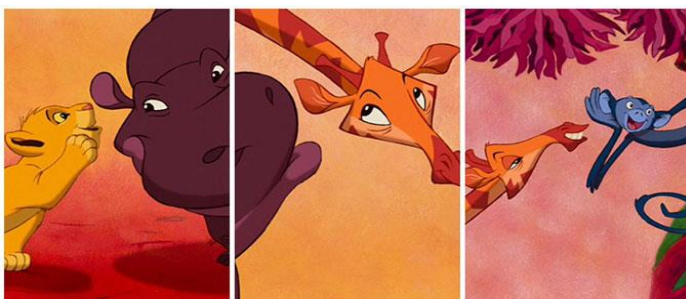
Appendix HH:
Aiden's Self-Monitoring Sheet

Am I...

1. Looking at the person who is talking or who I am talking to?



2. Listening and thinking about what is being said?



3. Keeping the conversation going by:

a. Asking on-topic questions?

b. Making on-topic comments?



c. Giving compliments?

**Appendix II:
Peer Network Plus Intervention Guide**



Peer Network Plus Interventions

What is a Peer Network?

Peer networks promote social interaction opportunities across and outside of the school day by establishing a social group around a student with a disability. Participating students are introduced to one another and receive regular guidance and feedback from an adult facilitator. The group also meets weekly to discuss social interactions throughout the week, brainstorm new strategies to improve these interactions, and plan for future social interactions.

What is a Peer Network Plus intervention?

Peer Network Plus refers to a peer network intervention with an added social skills training component. One of the purposes of this study is to determine whether adding in targeted social skills training boosts the effects of peer networks for students with autism spectrum disorders (ASD). To determine whether the addition of the social skills component improves outcomes, students in the study will start with a typical peer network and will eventually have the social skills training component added (the “Plus”). Social skills to be targeted will be determined based on parent and case manager feedback and consultation with the intervention coach. Curricula for the social skills training will be provided by the intervention coach. Training will occur for approximately ten minutes prior to network meetings and will be provided by the intervention facilitator (you). The intervention facilitator will also be coached in incorporating opportunities to practice these targeted social skills during the network meetings once this portion of the study begins.

What are the goals of peer networks?

- Provide an intentional way for a student with a disability to meet new people and, hopefully, make new friends
- Increase the number of peers a student with a disability knows and interacts with regularly
- Increase the number of social contacts a student with a disability has during the week
- Provide peers with a chance to get to know and interact with the student with a disability on a regular basis
- Increase the involvement of the student with a disability in clubs, at lunch, and in other school activities
- Help develop relationships that will last beyond the semester

What is your role as the facilitator of the group?

- Identify peers to be part of the group
- Invite those peers to join the group
- Have an initial meeting with the peers to explain and organize the group
- Hold weekly or bi-weekly peer network meetings that include the student with a disability
- Provide support and feedback to students about social interactions
- Provide additional support as needed to the student with a disability or other peer network members

- Coordinate, communicate, and schedule meetings
- Communicate with project team and complete required paperwork
- Incorporate targeted social skills training before and during network meetings **when this portion of the study begins**

What are the steps to setting up a Peer Network Plus intervention?

- **Identifying Peer Network Members:** You will identify 3-6 peers without disabilities to join the group as “peer network members.” Each will be required to (along with their parents) consent to participation.
- **Initial Meeting of Peer Network Members:** You will meet with the peer network members during a lunch period or immediately before/after school (typically 45 to 60 minutes). During this initial meeting, you will talk with peer network members about their schedules and help them plan social contacts with the student with a disability throughout the week (e.g., saying “hi” in the halls between classes, getting together at lunch, or meeting before or after school).
- **Regular Peer Network Meetings:** The peer network members and the student with a disability will meet together, along with you, weekly (typically 30-45 minutes) to interact as a group, talk about their social contacts during the previous week, and share any ideas for future social contacts.
- **Social Skills Training Component:** **When this portion of the study begins**, you will provide social skills training on targeted skills for approximately ten minutes prior to network meetings and will incorporate these lessons within the network meetings.
- **Weekly social contacts:** During scheduled and unscheduled times, peer network members are asked to connect with the student with a disability throughout the school day and, hopefully, outside of school.

Identifying Peer Network Members

Purpose

To identify peer network members who will be:

- Interested and excited to participate consistently in the group throughout the semester
- Motivated to develop an ongoing social relationship with the student with a disability
- A positive peer model for the student with a disability

Your Role as the facilitator you will be to:

- Identify potential peer network members with help from other adults and students
- Invite peers to participate
- Answer questions peers might have about the group

Starting points for identifying peers:

- Your first step should be to talk with the student with a disability about his or her interests and preferences related to peers
- Think about what will be the best method for identifying peers at your school based on information provided by your intervention coach about what has worked in previous semesters

Important Points

When looking for peer network members it is important to keep an open mind and think creatively; sometimes a great peer partner is a student you would not initially consider. If the student with a disability already has relationships with certain peers or shows a preference to a particular group or peer, start by talking to those students.

Talking to the focus student

Before identifying peers, talk to the student with a disability about the peer network. See what input he or she has about what peers to invite and discuss any questions or concerns the student may have about the peer network group.

How many peers should I invite?

Aim for identifying between 3 and 6 peer network members. You want this number of peers so that there are enough students to create a variety of social opportunities for the student with a disability, but not too many peers so that the student does not feel overwhelmed or left out of the group. Think about existing friendship groups or “cliques” into which the student with a disability might be introduced.

Who might make a great peer network member?

Consider some of the following questions when identifying peers. Remember, there are no preset requirements for participation in the peer network. Of course, being part of a peer network is a choice and so only students who express interest when invited should participate.

- Which peers are already the student’s friends?
- Who has shown an interest in getting to know the student in the past?

- Who sees the student regularly such as in class, in the hallways, or at lunch?
- Who has similar interests or things in common with the student with a disability?
- Who already has an established group of friends that could all take part in the group?

What are different ways that I can identify peer network members?

You may identify potential peers using whatever approaches work best in your school. The ideas listed below are just some of the strategies you might use to identify potential peer network members. Again, think creatively.

When deciding on an approach for finding peer network members, remember:

- Identify peers who would be interested in joining and who will be committed to the group for the entire semester
- When possible, you want peers who will become friends, not “helpers”
- Identifying an existing social group as peer network members may help keep the group together and increase interactions outside of school

Tip #1: *Ask the student:* If the student can communicate his or her preferences, ask some of the following questions:

- Who do you like to talk with at school?
- Are there people with whom you want to spend more time?
- Who do you look forward to seeing?
- Who do you consider to be your friends?

The following questions could be asked to help determine where you might recruit peers:

- What do you do after school?
- Where do you like to go after school and on the weekends?

* While some peers in the peer network can be existing friends, we also want to expand the friendship network of the student with a disability.

Tip #2: *Ask teachers, special education assistants (SEAs) or parents.*

Ask teachers:

- With whom does the student with a disability already interact in class or at other times?
- Do you know students who might be interested in participating in the peer network?
- Can you think of a group of students who would be great for the peer network?

Ask parents:

- Are there students from school your child sees outside of school?
- Who might your child have the opportunity to interact with outside of school?
- Does your child talk about certain friends he or she likes to see at school?
- Are there clubs of other school activities your child would enjoy participating in?
- Which peers interact positively with the student with a disability?

Tip #3: *Look Around:* Watch the student during transitions, lunch, and before or after school if possible.

Consider the following questions to help identify peers who could potentially be invited.

- Where does the student go?
- With whom does the student interact?
- What peer are around?
- Are there peers with whom the student often talks?
- Are there peers who say hi to the student?

- Are there peers the student often works with in class?

Tip #4: *Get to know students.*

- Get to know the peers who the student has class with, interacts with, or who are often around the student
- Talk to students in school whom you already know well
- Talking to students about the peer network may lead to inviting them to join

Tip #5: *Talk to clubs or a class:* Another idea is to approach students participating in established clubs like a peer partner club, peer tutoring club, National Honor Society, Key club, or a club related to an interest of the student with a disability. See information on the following pages on how to present the opportunity to a large number of students.

How do I invite peers to participate in the peer network?

- *Meet individually with students*

If there are one or two students who would be good peer network members you can approach them individually to ask if they would be interested. If they say yes, you could ask if they have friends who may also be interested. This conversation can happen between classes, during lunch, at a club meeting, or another time you would typically interact with students.

- *Meet with an existing peer group*

Meeting with a social group of peers to ask all to join the peer network may increase the likelihood that peers will express interest. Some examples of existing peer groups include a group of girls who always eat lunch together or a group who attend the same club and often hang out together. By inviting an existing group to join, this can help create a cohesive peer network where students are just adding another student rather than creating an entirely new social group.

- *Meet with a large number of students*

Present the opportunity to a school club (such as National Honor Society, Key Club, a club related to a student's interests), a class, or another large group of students to see who may be interested. The peer network should be presented as a general opportunity for students with and without disabilities to interact (do not provide information about specific students with disabilities), get to know new people, and help someone become more involved at school. Let students know they can come to talk to you afterwards to learn more if interested.

What do I say to peers when I invite them to participate?

- Invite the peer(s) to join a “social group” for the student with a disability.
- Participating in the social group involves interacting with the student with a disability (saying “hi”, walking to class together, talking, sitting together at lunch) a couple of times a week and meeting as a social group weekly for about thirty minutes to talk together as a group and discuss how things are going.
- There will also be an initial meeting for just the peer network to learn more about the focus student, ask questions, and discuss how the peer network can work best.
- Let the peers know you are available to answer any questions about participating and, if needed, give them time to consider and get back with you. Set a specific deadline for a decision.
- Let the peers know that if they are interested in participating, they need to return both the student assent form and the parent consent form in the envelope.

Inviting One Peer

The following is sample language you might adapt to invite one peer. Of course, this is just an idea and you should phrase the invitation however you see fit.

Hi (peer's name). Do you have a minute? I'm (your name). We are putting together a social group to help (student's name) become more involved at school. We are looking for students who would get to know and talk to him/her in between classes, at lunch, or before or after school a few times a week. As you know, interacting with other students at school is one of the best parts of school and (student's name) would like to get to know more students at schools. The group would get together weekly to hang out and discuss how things are going. Your teachers and I thought you would be great for this group because: you and (student's name) are both interested in (common interest); some of your friends are already joining; you are popular with lots of other students; you seem to like interacting with new people; (student's name) really likes hanging out with you, etc.. Is this something you are interested in?

If Interested: Great! Because we want to make sure that having students get to know other students can help (student's name) be more engaged at school, we are making this part of a research study—always good to get proof! So I have a short permission form that explains what we will be doing. You'll need you to take it home and read it along with your parents/guardians if you are under 18. You can either mail it back to the address or bring it to me in class. You'll have to sign the student form and have your parent(s) sign the parent form if you are under 18.

If you know anyone else in school who might want to do this, let me know. We are hoping to have at least three to six students participate. Once I get your permission form back, and the others at school, I'll set up a meeting with all of us to go over some ideas to help support and include (student's name) at school. We can meet over lunch, a study hall, or before or after class. What would be best for you?

I'm really glad you are interested. Thanks!

Inviting a Group of Peers

You might adapt the following sample language to invite a group of peers to participate.

Hi everyone. I'm (your name). We are putting together a group to help students with disabilities meet others they do not know as well and provide opportunities for them to interact together. The group will get together once a week to hang out and discuss when they could interact during the week: between classes, at lunch, or before or after school. If this is something you, or you and some of your friends, would be interested in learning more about, you can come talk to me in (place) during (time) or you can drop a note in my mailbox located in (room).

Initial Meeting for Peer Network Members

Purpose The initial meeting is for the peer network to:

- Discuss the goals of the peer network
- Share ideas for increasing interaction with the student with a disability
- Allow peers to get their questions answered
- Determine when interaction could occur during the school week
- Establish a regular meeting time
- Learn more about the student with a disability and his/her interests

Your Role As the facilitator you will:

- Encourage discussion by asking questions and sharing ideas
- Model how to respectfully talk about the student with disability
- Answer any questions
- Provide some general information about how the peer network works
- Help peers determine the weekly interaction schedule and a regular meeting time
- Keep track of students' social contacts
- Set a relaxed tone for the meeting and make it fun and enjoyable for students

To prepare for the meeting:

- Schedule it during a time that is convenient for all, or at least most, peer participants (anticipate it will take approximately 30 minutes)
- Have a copy of the focus student's schedule including where he or she is between classes, at lunch, and right before or after school (if appropriate)
- Bring this notebook to the meeting including the *Initial Meeting Checklist* and *Peer Network Interaction Schedule* forms

Introductions

- Start the meeting with introductions
 - This may include some fun ice breaker games
 - You can also simply have students introduce themselves and share how they know the focus student or what aspects of the peer network made them interested in being involved

Background about the Student with a Disability

Ask the students the following questions. Listed below each question are just some of the possible answers and information you may want to add to the discussion. Do not share confidential information with peers such as information about the student's disability, personal information or IEP information. Keep information very general.

What do you know about (the student)?

- Share strengths and interests of the student (e.g. what does s/he like to talk about? What does she like to do?)
- Share what you find enjoyable about interacting with this student
- Provide peers with ideas of how they might interact with the student
- Give specific ideas on how to emphasize the student's strengths in social situations

- e.g. bring up with peers a topic the student with a disability likes to talk about or suggest an activity the student is good at
- Instead of providing diagnostic information or other personal information not specifically relevant to the peer network, share with the peer network members characteristics about the student that are relevant to their interactions.
 - e.g. “Sometimes Jack does not look at you when he talks to you; this does not mean he is not interested or listening.” or “Occasionally Alexis will keep talking about the same topic. If you want to talk about something else, you can change the topic like you would with any other friend.”
- Let students know if an interaction seems challenging, think about of how you would respond to another friend who was acting that way

Have you talked to (the student) before? What do you know about how (the student) communicates?

- If the student with a disability uses an augmentative communication device (Picture Exchange Communication System (PECS), sign language, or voice output system) share this information with peer network members and make sure they understand how this communication system works. Ask the students for ideas of phrases that could be programmed into the student’s augmentative communication device for social interactions.
- If the student is verbal, but has limited language, talk about what the student can and cannot say and give some ideas for talking with the student such as saying hi, giving a hi-five or other appropriate social gesture, or asking questions the student knows.

Overview and Goals of the Peer Group

Share with the students the overall goals of the group:

- To increase the social opportunities the student with a disability has at school
- To create opportunities for other students at school to get to know the student with a disability
- To include the student with a disability in more school activities, like clubs or social events
- To help students develop new friendships
- To practice and model positive social skills

What are some specific ways we can we work toward accomplishing these goals? (You may want to start the group off by sharing some of these ideas first, then asking the group what ideas they have)

- Say hi to the student between classes
- Ask the student how he or she is doing if you are in class together
- Invite the student to sit with you at lunch
- Ask the student to join you during school assemblies or other school events
- Give compliments, high fives or knuckles, or share a joke
- Invite the student to attend a club meeting with you
- E-mail or Facebook one another periodically
- Introduce the student to some of your friends
- Some things can be done individually, others can be done as a group

What do you see as your role in this social group?

- Look for and talk with the student during school day
- Help include the student in activities
- Attend and participate in these meetings

- Invite other students to get involved

What is my role in this group?

- Help arrange times for you all to get together interactions
- Be available to all group members to answer questions
- Support the group as needed

What are some of the benefits of being part of this group?

- Learn about someone that you may not know much about and potentially develop a new friendship
- Become more confident in interacting with classmates with disabilities
- Learn from the strengths of the student with a disability and other group members
- Help create a more inclusive environment at your school for all students

Discuss Confidentiality

Ask: What information about the group do you think is okay to share with others?

- When answering questions from others about the group, consider what you would want shared, or not shared, about you
- Information about a student's strengths or interests can be shared in an appropriate social situation
 - o e.g. "Oh Vanessa you like that movie too, right?" or "Johnny might be able to help you with that video game, he's really good at it"
- If discussing the student with another group member, be sure to do so in a private area where others will not hear your conversation
- If you have friends who are interested in interacting with the student or joining a group activity, invite them along and introduce them to the student just as you would any other friend
- If you are not sure how to answer someone's questions or handle a particular situation, you can always talk to (the adult facilitator) about it

Discuss When Social Interactions Can Occur

We are going to try to schedule times each of you can get together or interact with (the student with a disability). When are times during the week could you interact with (the focus student)?

- Share the focus student's weekly schedule with the group
- Discuss when peer network members might be able to interact with the student during the week
- Talk with the peer network members about ways they might interact with the student (i.e. say "hi", invite the student to eat lunch with them)
- Encourage peer network members to catch up and talk with the student whenever they want, even at times they do not discuss during the meeting
- Record times that each peer network member might be able to interact with the focus student during the week on the *Peer Network Interaction Schedule* form
- Encourage peer network members to provide themselves with a reminder (assignment book, cell phone, etc.) about interacting with the focus student
- Encourage students to make a mental note or write down how social contacts went as they will be asked to share information about interactions at the next meeting
- Remind students the goals for these interactions is just to introduce him or herself to the student (if they do not already know each other) or just begin talking more to the student
- As the semester continues, the group will work on helping the student become more involved in school activities/ school community

What should I say about the social skills training?

It's important to mention that the group is a place to model appropriate social skills and allow the student with disabilities to practice appropriate social behaviors. Mention that, at times, you will be structuring parts of the network meeting to allow the student to practice social skills he or she is working on. Encourage peers to participate as a friend and model the social skills. Remind them that they do not need to take the role of a teacher but rather a friend who can help them develop these skills.

Scheduling Regular Meetings

These meetings are important so the group can discuss how things are going, share ideas, and plan future social contacts and activities. If a meeting time cannot be determined when everyone in the group can attend, you can proceed to schedule a meeting time in which the majority of the group can attend.

When would everyone like to meet next?

- Determine when and where the weekly meetings will be held
 - Be sure you know when and where would be convenient for the student with a disability, who will be joining the next meeting
- If the next meeting time and place cannot be determined, be sure to have a way to get in contact with all students to determine and share the meeting time and place (emails, text message, phone calls, etc.)

Information for next meeting

- Share with peers that the format of the weekly meetings will be a little different from this first meeting. It will be a time to interact as a group (including student with a disability) and discuss how things are going
- The format of the weekly meetings can be determined by the group and the facilitator will be there to help (over time, peers should take more responsibility in leading the group meetings)
- Remind peers that they will be asked to share information about the previous week's interactions at the next meeting
- Encourage peers to record when they might be able to meet up with the focus student
- Let students know that the student with a disability will be present at the regular meetings
- Tell peers to be sure to include the student with a disability in the discussion, even if he or she does not participate

Discussion and Questions

- What are you excited about?
- What are your concerns?
- What do you hope to gain from this experience?
- What questions do you have for me?
- Let students know how they can contact you to talk about any ongoing questions or concerns.

Initial Meeting Checklist

Date of Meeting _____ Location of Meeting _____ Adult Facilitator _____

Names of students attending _____

During the initial meeting, be sure to cover all topics/activities below. This time should be more of a discussion and, although it will be led by the adult facilitator, the peers should be active participants in the discussion. Check off each topic/activity as you complete it. **Please return the completed form to the researcher.**

Completed	Topic/Activity
<input type="checkbox"/>	Introductions: have students introduce themselves and play a fun introductory activity as desired
<input type="checkbox"/>	Background about student with a disability: Ask peers: What do you know about (the student)? Share some of the student's strengths and interests. Provide information about the ways in which the student communicates as it relates to social interactions.
<input type="checkbox"/>	Discuss peer group: Share with students overall goals of social group. Share with students ideas for how to work on goals and ask students: What are some other ways we can work towards these goals? What are the benefits of being part of this group? etc.
<input type="checkbox"/>	Discuss social skills component: Explain the social skills training procedure. Emphasize that this portion should be as natural as possible and encourage peers to reinforce positive social behaviors in meetings and other contacts.
<input type="checkbox"/>	Discuss confidentiality: Discuss with peers: What information do you think it is okay to share about the group? What do you think you should do if someone asks you personally questions about (the student)?
<input type="checkbox"/>	Schedule social contacts: Ask peers: When do you want to meet up with (the student) during the next week? Record the possible schedule of interactions and bring schedule to the regular group meetings.
<input type="checkbox"/>	Schedule regular meeting: Ask peers: when do you want to meet next? Schedule a time and place that works for the peer partners, the student with disabilities and you.
<input type="checkbox"/>	Discussion and Questions: Ask students: What are you excited about? What are your concerns? What do you hope to gain from this experience? What questions do you have?

Notes/Follow up for next meeting

Peer Network Meetings

Purpose

The regular meetings are for students to:

- Socialize and interact as a group
- Discuss the previous week's interactions
- Discuss potential interactions for the following week
- Discuss events and activities occurring at school and outside of school
- Plan other ways to connect (e.g. email, Facebook, text messaging)

Your role as adult facilitator is to:

- Answer students' questions
- Model how to interact with the student with a disability
- Record previous week's interactions
- Encourage students to begin interacting outside of scheduled interactions both at school and outside of school, as appropriate

To prepare for the meeting:

- Remind students of the upcoming meeting
- Bring this binder to all meetings, including the *Peer Network Plus Interaction Schedule* and blank *Peer Network Plus Meeting Intervention Checklist* form

Social Time and/or Activities

- Food can be a great incentive (candy, snacks, pizza, etc.) and may be provided at meetings when possible
- Students could plan small activities for the meeting (such as making posters for an upcoming football game; playing a quick game; making crafts, etc.) if they would like
- This time is for the peer network to interact as a group, so you may encourage them to chat about common interests, activities, etc. and students should be encouraged to socialize during this time

Discuss Previous Week's Interactions

- Some potential ways to collect information about the previous week's interactions are:
 - Discuss interactions as a group
 - Ask peer network members independently about their interactions with the focus student during the previous week
 - Ask the student with a disability about his or her interactions with peer network members during the previous week, if appropriate
 - Ask peer network members to write down interactions from the previous week and give to the facilitator during the meeting
- Be sure to record the total number of interactions (scheduled and unscheduled) on the *Peer Network Plus Meeting Intervention Checklist*

Discuss Next Week's Interactions

- Ask all the students: Are there additional times you can get together with the focus student during the upcoming week?

Social Skills Training Component (ONLY WHEN THIS PART OF THE STUDY HAS BEGUN)

- Weave opportunities for the student with disabilities to practice the targeted social skills into the network meetings. The intervention coach will work with you to brainstorm ideas on how to do this.
- Some students may benefit from visual reminders of the steps to displaying targeted social skills.
- Some groups might model and/or role play the skill with the student with a disability.

Informally Assess Group Satisfaction

- Some potential questions include:
 - How is everything going?
 - What would you like to change about the meetings or the ways in which you connect with each other?
 - Do you have any ideas for upcoming activities the group could do together?

Group Discussion (if needed)

- The adult facilitator may want to introduce some topics for discussion depending upon the needs and interests of the group
- Topics may be specific to the needs of the student with a disability and/or the peer network members
- Some topics for discussion may include:
 - Friendship vs. helping
 - Respect and honesty
 - Different ways to connect at and outside of school
 - Conversation topics students might discuss
 - Ways to include the student in larger group activities
 - Introducing the student to others at school

Extending Peer Network Outside of School

- Share opportunities for the peer network to interact outside of school (club meetings, sporting events, special events, etc.)
 - these are not required, but hopefully individual members of the group will begin interacting with one another outside of school, whether in person or using technology
- Encourage peer network members to share events and activities that they are attending outside of school that other group members may also want to attend (e.g. “I am going to the basketball game tonight, if anyone wants to meet up there”)
- Communicate with the parents of the student with a disability what social opportunities are available and when peer network members will be attending particular events (e.g. sharing with parents that many peer network members plan on attending the art show at school on Tuesday night)
- Encourage peer network members to communicate with one another through Facebook, email, instant messenger, text messaging or any other mode of communication commonly used by members of the group

Reminders

- Remind students when the next meeting will be

- If a student in the peer network was absent from the meeting, ask a student in the group to share with him or her (via email, phone, meeting up at school, etc.) what was discussed and the schedule of interactions

Peer Network Plus Meeting Intervention Checklist

Student: _____ School: _____
 Intervention Facilitator: _____ Coach: _____
 Date: _____
 Peer Network Members: _____
 Total number of students at meeting: _____

Circle Y (yes) or N (no) based on whether or not these behaviors occurred during the meeting.

1. Y N Are peer network members and the focus student interacting during the meeting?
 Y N Do students **greet** each other?
 Y N Does the **focus student initiate** interactions with peer network members?
 Y N Do **peer network members initiate** interactions with the focus student?
 Y N Do students engage in a **game or activity** together?
 Y N Do students engage in **conversation** together?

When do interactions occur during the meeting (circle all that apply):

Beginning Middle End

2. Y N Are peer network members and the focus student reporting that interactions occurred during the week (outside of the meeting)?
 Y N Does the **focus student ever initiate** interactions?
 Y N Do **peer network members initiate** interactions?
 Y N Are these interactions **reciprocal**?
 Y N Are interactions occurring **at least once per day**?
 Y N Are interactions occurring between **more than one peer network member** and the focus student?

How many **students report interactions** during the week? _____

How many **total interactions** are reported? _____

When were interactions reported as occurring (circle all that apply):

Before school Between classes Lunch After school Weekend

3. Y N Are you (facilitator) supporting peer partners and the target student?
 Y N Do you provide **structure and facilitate** the meetings as needed?
 Y N Do you **check with peer partners weekly** about interactions with the focus student?
 Y N Do you **monitor** interactions during the meeting?
 Y N Do you provide **praise and feedback** to students during or outside of the meeting?

Examples of feedback to give students:

- “Zoe really looks forward to seeing you each day after her Art class.”
- “James loves it when you talk with him about the movies he likes.”
- “Ella might not always respond to your questions, but she loves connecting with you and other students in the class. If you give her a bit of time to answer and she still doesn’t, you can ask her the question again.”

4.	Y	N	N/A	Was the targeted social skill addressed in the meeting?
		Y	N	Were the explicit steps of the skill discussed?
		Y	N	Did both peers and the student engage in a discussion about the skill?
		Y	N	Did peers model the skill?
		Y	N	Did the student engage in a role play around the skill?
		Y	N	Did the social skills component, facilitated by you, last ten minutes?

Additional notes from meeting/weekly contacts:

Social Skills Component

Purpose The added social skills component is designed to:

- Work on targeted social skills for the student with a disability before and within a peer network
- Allow the student to more fully, and more appropriately, engage in peer interactions and activities
- Determine whether adding a social skills training component boosts the effects of the peer network (Note: this is why we are adding the social skills component in after the peer network begins and at different times for different students)

Your Role as adult facilitator **when this component begins** is to:

- Go over social skills curricula (developed with intervention code) with student for approximately 10 minutes prior to peer network meeting
- Incorporate targeted social skills practice and feedback into peer network meetings (working with intervention coach)
- Reinforce positive prosocial behaviors

Notes

- This research study is using a multiple baseline across participants design to look at the impacts of adding a social skills training component to a peer network.
- To achieve this design, all participants will start with receiving the peer network intervention without any added social skills component. When **the data is consistent**, the social skills training component will be added. Unfortunately, this means that we will not know when we are adding this component before the semester begins. When we add in the social skills training will depend on what the network (and the networks of other participants) are looking like.
- It is very important to only begin the social skills training and incorporation of targeted social skills practice when the intervention coach asks you to. This is the only way the study will work as planned.

How will the skills be chosen?

- Parents and case managers will complete the Autism Social Skills Profile. From these measures, three independent skills will be chosen to be worked on during the intervention.
- Consultation between the case manager and intervention coach will also be used to determine intervention goals.

How will I teach the skills?

- The intervention coach, in consultation with you, will develop social skills training curricula for the three targeted skills. The intervention coach will talk with you regarding how to implement the curricula.
- Skill curricula will be based on lessons in the Skillstreaming the Adolescent curriculum.
- You will be asked to teach the social skills lessons for approximately 10 minutes prior to the intervention and to incorporate social skills training and practice into the network meetings. Your intervention coach is available to brainstorm ways to do this.

Weekly Social Contacts

Purpose The weekly social contacts are designed to:

- Increase the number of interactions between the student with a disability and peer network members
- Increase participation of the student with a disability in school events

Your Role as adult facilitator is to:

- Make sure students are getting together during the week (e.g. reminding students, being present at interactions as needed, or coordinating with other school staff)
- Check in with students occasionally to answer their questions and provide support
- Provide positive feedback to students for interactions

Preparing for social contacts:

- Schedule several social contacts at each weekly meeting
- Encourage students to interact whenever they would like to, even if not scheduled

Providing Feedback and Support

There are several ways to support students during interactions. You may:

- Observe interactions when possible
- Talk to other school staff who are present during these interactions (e.g. one-to-one paraprofessional, teacher who always passes by, etc.)
- Check in with students throughout the week to discuss interactions (outside of regular meeting time)

When observing or talking to students or another school staff member, consider the following questions:

- Are students meeting as planned?
- Do students appear to enjoy interacting with each other?
- Who starts the interaction? Does the other person respond?
- What happens during the interaction?
- What went well about the interactions?
- How could these interactions be improved in the future?

Decreasing Adult Support Over Time

As students in the peer network begin to interact more regularly (both during schedule times and several unscheduled times per week):

- The use of the schedule of weekly interactions can be decreased
 - peer network members should continue to interact with the student with a disability on a regular basis, however, these interactions will not be explicitly scheduled
- The schedule of regular meetings can be decreased if the group desires
 - if the group wants to continue to meet on a weekly or bi-weekly basis, they can continue to do so
 - while fading if more support is needed more meetings may be scheduled
- Continue to check in with students regularly, even as meetings and the schedule are decreased

Frequently Asked Questions

Here are a few common questions and answers, however, you can talk to the project coach at any time to discuss any concerns you have.

What if no one wants to join the peer network?

If students are not initially interested in becoming peer network members, you may want to ask them again and provide more information. Also, asking a group of students who are friends to join together may motivate them to participate. Another method of identifying peers is to begin asking other students who may not be the first students you thought about for the program. Work with your intervention coach to brainstorm solutions to the problem you are encountering.

What happens if peer network members decide they don't want to participate?

If One Peer Network Member Leaves The Group: Talk to the student about why he or she is leaving and make adjustments to the peer network to address any relevant concerns. Ask the remaining members if they have friends who they would like to invite to join. Contact the intervention coach as needed to discuss any challenges or concerns.

If All Peer Network Members Leave The Group: Talk to students individually about why they are leaving and make adjustments to the peer network to address any relevant concerns. Then start from the beginning or try a different approach for identifying peer network members. Be sure that all group members understand the commitment as well as the purpose and benefits of peer network interventions. Contact the intervention coach as needed to discuss any challenges or concerns.

What if social interactions are not occurring during the week?

If the social interactions are not occurring, it is important to first determine why they are not occurring. Is it that the students are not at the scheduled location at the scheduled time? Are students forgetting to interact? Is it that students are rushed to get to class and do not have time to interact? Is that students are not motivated to interact with one another? Is there another reason these interactions are not occurring?

During the regular meetings discuss with students why social contacts are not occurring and what they think needs to change in order for these to occur. Help students determine what will work and how to make these social contacts occur.

What do I say when peers ask about the student's disability?

If students ask about a student's particular disability, you can let them know that information is not important because a disability label does not tell you about that particular person. If students have particular questions about a student's behavior then you can answer in relation to that student without providing diagnostic information. For example, you could share, "Sometimes Josie will throw her paper when she is frustrated. This is a reminder that we need to offer Josie choices with assignments. She is working on other ways to let people know when she is frustrated with her work."

If the student has one-to-one adult support when social contacts are scheduled to occur, what role should that adult play in those interactions?

As much as possible, social interactions should be between the two students and should not involve the adult. However, adults can take steps to encourage interactions by facilitating interactions. The adult should then fade back as much as possible overtime, but still monitor the student during that time. If the students need to get to class, the adult can remind the students of this. If the student with a disability has a difficult time during an interaction, the adult can provide the peer with assistance as to how to respond (as they would with other peers). The adult should not take over for the peer and should never respond for the student with a disability during these interactions.

If the student with a disability is currently receiving other social skills intervention or support will that conflict with involvement in the peer network?

If the student is currently receiving other social skills interventions or support (e.g. social skills groups, individualized coaching on social skills), these interventions can continue as they are currently being provided as long as they do not interfere with the student being able to interact with peer network members. Additional social skills support can actually improve the impact the peer network has on the student's peer interactions. Also, the student's interactions with peers through the peer network may help identify social skills to address with the student during these other interventions. If these types of interventions or supports are being provided to the student, it is encouraged that there is communication between the adult facilitator and whoever provides these other interventions so these supports can compliment one another.

What if the student with a disability is having a difficult time interacting with peers?

If the student is struggling with peer interactions, it is important to understand why. After determining why the student is struggling, next determine what supports the student would need to be successful. Are there ways to change the interactions so the student can be more successful? Are there skills that the student can be explicitly taught and practiced outside of these interactions, so that the student can begin using these skills naturally with peers? Consider how you could teach the student the necessary skills to become more successful in interactions with peers and how and when this teaching could occur. These skills do not need to be taught by the adult facilitator, but the adult facilitator should help identify who could teach these skills. Consult with the intervention coach as needed.

Appendix JJ:
Peer Network Plus Adult Facilitator Feedback

Staff: _____ School: _____ Semester: _____

Thank you for your contributions to this project! We want to know your thoughts about being a peer network facilitator. Please read each of the following statements and **circle** the answer that best reflects your views.

1.	The amount of time required to use this strategy was reasonable.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
2.	The amount of time required for record keeping with this strategy was reasonable.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.	I feel I was effective in this role.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4.	I would need ongoing consultation to keep implementing this strategy.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5.	Implementation of this strategy required considerable support from other school staff.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6.	I implemented this strategy with a good deal of enthusiasm.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7.	I am motivated to continue using this strategy.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
8.	I would not be interested in implementing this strategy again.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
9.	This strategy was a good way to address the educational needs of the student with a disability.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
10.	This strategy fits well within this school.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11.	I understood the procedures of this strategy.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
12.	I would know what to do if I was asked to implement this strategy again.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
13.	The student with a disability benefitted <i>socially</i> from having a peer partner.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14.	The student with a disability benefitted <i>academically</i> from having a peer partner.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
15.	The student with a disability has more friends as a result of this project.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
16.	The peers without disabilities benefitted <i>socially</i> from being a peer partner.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
17.	The peers without disabilities benefitted <i>academically</i> from being a peer partner.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
18.	This strategy negatively impacted other students in the school.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

19.	I could use the strategies I learned through this project with other students.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
20.	The peer network was an effective medium for teaching social skills.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21.	The student with a disability's social skills improved in targeted areas .	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
22.	The student with a disability's social skills improved overall .	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
23.	Overall, I enjoyed participating in this project.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Think about your experience setting up a peer network this semester. Answer the following questions:

24. What went really well?

25. What could have been better?

26. Did you find that the peer network was an effective medium for teaching social skills? Why or why not?

27. What (if anything) has changed for the student with a disability as a result of being in this project?

28. What (if anything) has changed for the peers as a result of being in this project?

29. What (if anything) has changed for you as a result of being in this project?

**Thank you for taking the time to complete this questionnaire
and for participating in this project!**

Appendix KK:
Peer Network Member Feedback Survey
Peer Partner Feedback Survey

Student: _____ School: _____ Semester: _____

Thank you for being a peer partner! We want to know your thoughts about the project. Please read each of the following statements and **circle** the answer that best reflects your views. This information will help us improve the project experience for future students.

1.	At first, I was excited to become a peer partner.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
2.	I felt confident serving in this role.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3.	I had enough help from a teacher to do this role well.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4.	This was too much work for me.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
5.	I feel I was effective in this role.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6.	It was easy to get my own work done while part of this project.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7.	The initial orientation meeting with a teacher/project staff member was helpful.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
8.	Other students in the school should also do this.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
9.	I would be a peer partner again in the future.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
10.	I understand why the teachers thought peer partners would be helpful for my partner with a disability.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11.	Our school should have more peer partners for students with disabilities.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
12.	My partner benefited <i>socially</i> from having peer partners (e.g., talks more with peers, has more friends).	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
13.	My partner with disabilities benefited <i>academically</i> from having a peer network (e.g., participates more in class, learns new skills).	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14.	I benefitted <i>socially</i> from being a peer partner.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
15.	I benefitted <i>academically</i> from being a peer partner.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
16.	I consider my partner with disabilities to be a friend.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
17.	I would recommend being a peer partner to my other friends.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

18. My views about students with disabilities have changed for the better.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
19. I also spend time with other students who have similar disabilities at my school.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
20. I felt comfortable talking about/ working on social skills with my partner with disabilities.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21. My partner improved his or her social skills through our network.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
22. Overall, I enjoyed being in this project	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

23. What went really well?

24. What could have been better?

25. What (if anything) has changed for you as a result of being a peer partner?

26. What (if anything) has changed for your partner with a disability as a result of having peer partners?

**Thank you for taking the time to complete this questionnaire
and for participating in this project!**

**Appendix LL:
Peer Network Plus Student Feedback Survey**

Student: _____ School: _____ Semester: _____
Date: _____ Completed by: _____

Please read each of the following questions to the student with disabilities who had a peer network. **Circle** the answer that best reflects their response. Add any notes below if the student elaborates on their response.

1. Do you like going to school?	Yes	No	Unsure	Unclear
Comments:				
2. Do you have friends at school?	Yes	No	Unsure	Unclear
Comments:				
3. Did you spend time with [names of peer partners]?	Yes	No	Unsure	Unclear
If yes, what did you do?				
4. Did you like spending time with ____ [names of peer partners] in school?	Yes	No	Unsure	Unclear
Comments:				
5. Did spending time with ____ [names of peer partners] help you learn new things?	Yes	No	Unsure	Unclear
Comments:				
6. Are ____ [names of peer partners] your friends?	Yes	No	Unsure	Unclear
Comments:				
7. Would you like to keep hanging out with ____ [names of peer partners]?	Yes	No	Unsure	Unclear
Comments:				

Circle "unsure" if the student communicates he or she is not certain of the answer. Circle "unclear" if the student cannot communicate his or her perspective.