Utah State University
DigitalCommons@USU

All Graduate Theses and Dissertations | Graduate Studies

12-2011

Class-wide Respect and Social Support Skill Training to Increase Peer Interactions of Students with Autism Spectrum Disorders

Melanie Orton
Utah State University

Follow this and additional works at: https://digitalcommons.usu.edu/etd

Part of the Education Commons

Recommended Citation

Orton, Melanie, "Class-wide Respect and Social Support Skill Training to Increase Peer Interactions of Students with Autism Spectrum Disorders" (2011). *All Graduate Theses and Dissertations*. 1071.
https://digitalcommons.usu.edu/etd/1071

This Thesis is brought to you for free and open access by the Graduate Studies at DigitalCommons@USU. It has been accepted for inclusion in All Graduate Theses and Dissertations by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.

CLASS-WIDE RESPECT AND SOCIAL SUPPORT SKILL TRAINING TO INCREASE PEER INTERACTIONS OF STUDENTS WITH AUTISM SPECTRUM DISORDERS

by

Melanie Orton

A thesis submitted in partial fulfillment
of the requirements for the degree

of

EDUCATIONAL SPECIALIST

in

School Psychology

Approved:

Donna Gilbertson, Ph.D. Committee Chair	Andrew Samaha, Ph.D. Committee Member
Gretchen Gimpel-Peacock, Ph.D. Committee Member	Mark R. McLellan, PhD Vice President for Research and Dean of the School of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

2011

Copyright © Melanie Orton 2011

All Rights Reserved

ABSTRACT

Class-wide Respect and Social Support Skill Training to Increase

Peer Interactions of Students with Autism Spectrum Disorders

by

Melanie Orton, Education Specialist

Utah State University, 2011

Major Professor: Dr. Donna Gilbertson
Department: Psychology

The demand for effective social skills interventions for children with autism spectrum disorders is a pertinent issue for school-based professionals. One approach to increase appropriate social skills is to involve peer support by training a few socially competent children to positively interact with a student with an ASD. Potentially, training larger groups of children could result in increasing the number of different peers who would actively support positive interactions with their classmates with ASD. Thus, the present study investigated the effect of a class-wide peer-training strategy on the percentage of positive social interaction and number of peer contacts for three elementary students with autism spectrum disorders. All peers in the three different classrooms received a brief lesson on respecting differences in others and how to support all classmates during classroom and recess activities. Next, each class was taught how to support other students in the class by modeling, role playing, and didactic instruction.

This training specifically targeted preferred recess activities and social skills goals of the student with an ASD. After training, peers received a verbal prompt to use skills before a recess period, implemented the procedures in the absence of direct supervision during recess, and participated for a chance to earn points towards a class-wide reward for participating in positive interactions with the student with an ASD. A multiple baseline across the three classrooms showed replicated positive effects of the intervention relative to a prior baseline condition. Results showed that the class-wide respect and social support skills training paired with a contingent reward contingency increased the level of positive social interactions as well as the number of peer contacts for all three students with autism spectrum disorders.

(91 pages)

PUBLIC ABSTRACT

Class-wide Respect and Social Support Skill Training to Increase Peer Interactions of Students with Autism Spectrum Disorders

Children diagnosed with autism spectrum disorders (ASD) typically do not exhibit appropriate social skills. Due to their lack of social skills, these children can be negatively affected throughout their development. It is especially clear that children with ASD need to learn appropriate social skills in order to thrive in a school environment. Thus, it is critical that school psychologists and researchers develop effective social skills interventions for children with ASD in order to help them gain social skills and thrive at school.

There have been many approaches over time that have shown to be effective. One approach to increase appropriate social skills is to train socially savvy children how to work and play with their classmates with ASD. These types of interventions of the past have typically involved training a few children with adequate social skills how to positively interact with a student with ASD. Potentially, if researchers were to train large numbers of children, it could result in giving the student with ASD a larger variety of peers with whom to practice appropriate social skills. The following thesis investigated the effect of a social skills intervention delivered class-wide on the percentage of appropriate social interactions for three elementary students with ASD. It also investigated the effect of said intervention on the number of different classmates who interacted with the students with ASD.

All peers in the three different classrooms received a brief lesson on respecting differences in others and how to support all classmates during classroom and recess activities. Next, each class was taught how to support other students in the class through modeling, role playing, and step-by-step instruction. After the class-wide training, peers received a verbal reminder to use skills before a recess period, and participated for a chance to earn points towards a class-wide reward for positively interacting with the student in their class with an ASD. Results showed that the class-wide respect and social support skills training paired with a reward increased the level of positive social interactions as well as the number of peer contacts for all three students with ASD.

Melanie Orton

ACKNOWLEDGMENTS

I would like to thank Dr. Donna Gilbertson for supporting me tirelessly throughout the completion of this thesis. Her guidance has propelled me through each step of the process, from choosing a suitable topic, to entering the foreign world of literature reviews, finding research participants, and finally, preparing for my defense. She is an exquisite professor, mentor, and friend. I would also like to acknowledge my committee members, Dr. Gretchen Gimpel-Peacock and Dr. Andrew Samaha, for their input and encouragement.

I am especially thankful for my dear family and close friends who have offered me continual support and love. I am blessed with excellent parents who have taught me to work hard and not take myself too seriously. Graduate school introduced me to my wise, talented, and perceptive cohort members, who have struggled through this process with me. Lastly, my sweet husband, Joseph, has been endlessly patient with my thesis-induced tears, and will continue to support me in my academic pursuits and adventures.

Melanie Orton

CONTENTS

Page

ABSTRACT iii

PUBLIC ABSTRACT v

ACKNOWLEDGMENTS vi

LIST OF TABLES ix

LIST OF FIGURES x

INTRODUCTION 1

REVIEW OF LITERATURE 4

Children with Autism Spectrum Disorders 4
Research on Peer-Mediated Interventions to Increase Social Skills 7

PURPOSE AND OBJECTIVES 19

METHODS 21

Participants and Setting 21
Observer Training and Interobserver Agreement 25
Response Definitions 26
Independent Variables 28
Procedures 31
Integrity of Experimental Procedures 33
Experimental Design 33

RESULTS 34

DISCUSSION 41

Findings 41
Limitations 45
Implications for Further Research and Practice 48

REFERENCES 51

Page

APPENDICES 58

Appendix A: Parent Packet 59
Appendix B: Informed Consent 61
Appendix C: Class Information Sheet 67
Appendix D: Direct Social Interaction Observation Form 69
Appendix E: Training Scripts 72
Appendix F: Instruction of Social Skills Integrity Checklist 80

LIST OF TABLES

Table Page

1 Descriptive Statistics for Participants for Baseline and Treatment 37

LIST OF FIGURES

Figure Page

1 Percentages of positive, negative, and alone interactions for each participant at recess observation sessions during baseline and the contingent reward condition following training sessions 35

2 The number of peer contacts for each participant at recess observation sessions during baseline and the contingent reward condition following training sessions 36

INTRODUCTION

Children diagnosed with autism spectrum disorders (ASD) suffer from varying levels of social skill deficits (American Psychiatric Association, 1994). Without sufficient social skill acquisition, these children will fail to acquire adequate peer support and are more likely to develop maladaptive social behavior later in life (Frea, 1995). The role of social skills in school success and adjustment has been well documented, and emphasizes the importance of school-based services that promote social development for students with ASD (McClelland, Morrison, & Holmes, 2000). School-based interventions targeting social skills deficits are in critical demand, considering the increasing amount of children with ASD who qualify to obtain special education services in the public education system (US Department of Education, 2009).

Appropriate social skills are learned during supported participation in positive social interactions with peers. Because the goal is to have peers positively interact with each other, peers have the potential to support acquisition of social skills if the peers have the knowledge and willingness to provide positive effective support. Thus, implementing peer-mediated interventions is one type of training approach that has been researched extensively in school settings addressing the social interactions between children with ASD and their peers (DiSalvo & Oswald, 2002). Peer-mediated interventions typically involve the training of socially competent peers to model and reinforce appropriate social behavior of students exhibiting social deficits (DiSalvo & Oswald, 2002; Odom et al., 2003). This research shows that when peers are trained to interact with students with ASD in a natural setting the resulting outcome is heightened social skill acquisition for

students with ASD and increased interactions between peers and students with ASD.

Many studies that have shown effective results regarding skill acquisition typically have focused on training and observing interactions between one to two peers at a time, using a peer buddy or tutor system, to interact with the target student with an ASD (Chan et al., 2009). An alternative approach to researching the effectiveness of peer-mediated interventions would be to include the entire class in the training process. Training larger quantities of children how to effectively interact with their classmates with ASD may increase the number of peers who know how to support interactions with classmates with ASD, which would in turn increase the number of trials or opportunities for children with ASD to respond appropriately. Consideration of peer expectancies about interactions with students with ASD is another critical component in encouraging social initiation from peers (DiSalvo & Oswald, 2002).

Understanding how to respond to the complex social needs of students with autism is justifiably difficult for peers. Thus, beyond teaching the specific interaction skills to the peers, teaching principles of respect and diversity may be a critical component in increasing social interaction between the peers and students with ASD. Recently, many schools have begun implementing school-wide interventions to teach social-emotional skills, such as respecting and supporting others, in order to increase and maintain prosocial behaviors (Elias & Arnold, 2006). One potential outcome of this training is for the trainee to develop empathy, recognition, understanding, and concern for another individual's stressful situation and to increase respect for others who may seem different and are experiencing difficulties (Zins, Weissberm, Wang, & Walberg,

2004). Linking this principle of class-wide respect training with individually tailored social skills lessons may increase positive interactions between classmates and children with ASD. Thus, the present study investigated the effects of a class-wide respect and social support skill training on the percentage of positive social interactions between students with ASD and their classmates, as well as the frequency of peer contacts between students with ASD and their classmates.

REVIEW OF LITERATURE

The purpose of this literature review is to summarize empirical research concerning social skills training, which addresses the facilitation of positive and appropriate interactions for school children with ASD. The current review will discuss the social deficits associated with ASD; the previous research on peer-mediated social skills training interventions; and the purpose of educating peers regarding respect and diversity in relation to their willingness to appropriately and positively interact with their classmates with ASD.

Children with Autism Spectrum Disorders

The demand for effective interventions for children with ASD is a pertinent issue for school-based professionals. The Center for Disease Control and Prevention estimates that the prevalence rate of ASD has reached between 1 in every 80 to 1 in every 240, with an average of 1 in every 110 children (Rice, 2009). The growth in prevalence has, in turn, affected the number of children in schools receiving special education services under the classification of autism. Recent special sducation data reported that in 1992, 15,580 children were served under the Individuals with Disabilities Education Act (IDEA) criteria for autism, whereas 297,739 children were served in 2007 (U.S. Department of Education, 2009). Though the exact reason for the growth of prevalence is unknown, it is possible that the increase may be due in part to the advances made in professional assessment (Volker & Lopata, 2008).

Children medically diagnosed with ASD present a broad range of symptoms that

are manifest in a similarly broad range of severity. The disorders within the autism spectrum are autistic disorder (or classic autism), Asperger syndrome, pervasive developmental disorder not otherwise specified, Rett syndrome, and childhood disintegrative disorder. Diagnostic symptoms of autistic disorder include cognitive or language delay, as well as a presence of stereotypic behavior and social skills deficits (American Psychiatric Association, 1994). These symptoms are manifest on a spectrum, and thus might affect one individual to the point of complete dependence on others, whereas another individual might be able to function adequately in society. Asperger syndrome is another autism spectrum disorder, and central diagnostic features include social skills deficits and inclination toward stereotypic behavior (American Psychiatric Association, 1994). However, individuals with this disorder do not typically experience cognitive or language delays and are often capable of attending universities and engaging in steady employment. Despite experiencing academic success, adults with Asperger syndrome report social isolation and frustration due to their uneasiness in grasping social norms and interactions (Cesaroni & Gerber, 1991).

The IDEA is a federal law that governs how schools identify and provide intervention and related services to children with disabilities (Rogers, 2000). The IDEA classification of autism is not entirely synonymous with either the medical diagnosis of autistic disorder, or autism spectrum disorders, but does show great similarities to both. Namely, the IDEA classification can include any disorder on the autism spectrum, that is, Aspergers, autism, pervasive developmental disorder not otherwise specified, and so forth. The classification criteria under IDEA states that autism is a developmental

disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age 3, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences (US Department of Education, 2004).

As noted above, a core identifying feature that negatively affects each child with an ASD is the significant deficit in social interactions. Specifically, the diagnostic criteria of ASD includes an impairment in the use of nonverbal behavior that would facilitate social interaction, failure to develop age-appropriate relationships, lack of showing interest or enjoyment with others, and lack of social reciprocity (American Psychiatric Association, 1994). Considering these symptoms, children diagnosed with ASD do not display typical age-appropriate social skills that would facilitate appropriate peer interactions.

These deficits become keenly evident when children with ASD begin to interact with other children in social situations in preschool or school settings. For instance, children with ASD have been found to engage in shorter durations of social interactions than typically developed peers (Roeyers, 1996), rarely initiate social interactions (Roeyers, 1996), and are less likely than their peers to be in close physical proximity of a classmate (McGee, Feldman, & Mottier, 1997). Beyond impacting a child's ability to make and maintain relationships, social skills have repercussions on other domains of functioning. For example, a child who does not use adequate social skills throughout

critical years of childhood will fail to obtain learning opportunities found in successful peer relationships. As a result from lacking the appropriate skills for social interaction, these children are more likely to develop maladaptive behavior (Frea, 1995). Thus, a focus on early social skill intervention is recommended for treating students with ASD in order to potentially prevent the acquisition of additional problematic outcomes. The demand for this type of intervention will continue to accrue as many children with ASD receive the majority of their education in regular public schools.

Research on Peer-Mediated Interventions to Increase Social Skills

Schools provide an ideal setting to implement social skills interventions given the abundant opportunities for socialization between peers and students with ASD on the playground and in the classroom. A meta-analysis of 55 studies was conducted by Bellini, Peters, Benner, and Hopf (2007) to examine the effectiveness of social skills interventions in school settings for preschool, elementary, and secondary students. In this study, intervention effectiveness was evaluated as the calculated percentage of nonoverlapping data points between each student's (N = 157) baseline and treatment condition. Results revealed that providing instruction in the typical classroom setting as compared to instruction in a pull-out setting was found to produce the most beneficial social outcomes across participants, settings, and play stimuli for children with ASD (Bellini et al., 2007; Gresham, Sugai, & Horner, 2001). Interestingly, no significant differences were found when examining relationships among the number of intervention

sessions, hours of intervention, length of treatment sessions, and treatment outcomes.

Moreover, research has shown that successful peer involvement in social skills interventions is accomplished by directly training peers on how to respond and support the social behaviors of other children (DiSalvo & Oswald, 2002). Such peer-mediated interventions used in social skills research for children with ASD have shown improvements in social communication (Koegel, Opender, Fredeen, & Koegel, 2006), initiations (e.g., Sasso, Munderschenk, Melloy, & Casey, 1998), maintaining interactions (e.g., Haring & Breen, 1992), turn taking or sharing (e.g., Blauvet-Harper, Symon, & Frea, 2008), and play skills (Blauvet-Harper et al., 2008; Pierce & Shreibman, 1997; Scattone, 2007).

Various researchers have proposed reasons for the success of peer-mediated interventions. In peer mediation, learning of the modeled behavior is facilitated only if the student with ASD pays attention to and remembers the modeled behavior, has the capability and opportunity to practice observed behavior, and has a behavior that can be maintained with contingent external or positive reinforcement (DiSalvo & Oswald, 2002). Thus, trained peers can play a large role in modeling appropriate social behaviors and in recognizing and responding to others' attempts at using positive behaviors in a manner that support and maintain social skill acquisition (Kamps, Barbetta, Leonard, & Delquadri, 1994).

In a recent review, Chan et al. (2009) analyzed 42 studies that specifically examined the effect of peer-mediated interventions on social skills of 172 participants with ASD (between 4 and 13 years old) who were supported by a total of 395 trained

peers. Results showed that 91% of the study outcomes were positive when high functioning children with ASD received support from one or more trained peers. Common peer-training components used in the studies were verbal explanation, trainer modeling, role-play, and practice. Interestingly, few studies included systematic prompting of intervention procedure or reinforcement for correct implementation. Peers were taught to initiate conversations or simple play interactions with children with ASD, to maintain interactions by responding to peers' attempts to communicate, and provide contingent reinforcement to participants following appropriate behavior. When queried in a few studies, peers reported they enjoyed participating in the program and learned important skills. Unfortunately conclusions on generalization were limited as few studies measured the generalization effects of social skills interventions across multiple social settings and with multiple persons. Although the Chan et al. (2009) analysis reveals positive results of peer mediation, the authors suggested that additional studies examining optimal intervention components and peer training would provide a more thorough understanding of how to further improve peer-mediation interventions.

There are various methods that have been successfully used within the field of peer-mediated interventions to promote generalization. Shafer, Egel, and Neef (1984) evaluated the effects of a peer-training strategy on the occurrence and duration of interactions between four students with ASD and 16 peer trainers in both training and generalization settings. Training consisted of the modeling of play interactions, play practice sessions with feedback, and reinforcement of appropriate interactions using the target child's preferred toys during training and generalization probes. This training

strategy resulted in increased levels in the occurrences and durations of positive social interactions between the peer trainers and the students with ASD relative to a baseline condition. This research finding suggested that generalization to an untrained setting is most likely to occur when the child with an ASD is engaged with preferred toys or activities and is reinforced by his peers.

Another method that has been shown to increase generalization is to conduct training in loosely controlled natural social settings such as recess or unstructured play settings. Blauvet-Harper et al. (2008), for example, used a multiple baseline approach across subjects to investigate the effects of a peer-mediated intervention on the social play skills of two third-grade children with ASD in two separate classrooms. Both students with ASD were fully included in general education classrooms, spoke in short phrases, and seemed to be interested in social contact, but would engage in inappropriate interactions such as parallel play and extraneous physical affection. Each of the participant's teachers recommended four peers to be trained who exhibited adept social and communication skills. After observing students during recess during a baseline condition, the selected peers were trained by the researchers on various naturalistic techniques to be used during free play time, namely gaining attention, varying activities, narrating play, reinforcing attempts, and taking turns. Peers continued to receive instruction until they demonstrated 80% mastery of four out of the five social skills being taught.

After training, the peer mediators were given cue cards to prompt the use of the trained social skills with the student with an ASD during recess. During the intervention,

researchers observed recess periods to assess whether peers were using the five taught skills and whether the target children were responding. Results showed that relative to baseline condition, both target children increased their amount of social interaction by training during free play and during a generalization phase in the recess setting without peer prompting specific to the trained strategies. For peer mediators, the average treatment fidelity in the recess setting was 93% for three peer mediators assigned to the first target student, and was 92% for the three peer mediators assigned to the second target student. The positive effect of this technique warrants further practical application in a school setting. By training peers to use supportive skills in natural settings, such as at recess, peers are more likely to use their newly acquired supportive strategies in multiple and flexible ways. As a result, children with ASD are provided with multiple cues and examples to use newly learned social skills in order to increase appropriate social responsivity (Pierce & Shreibman, 1997).

Class-wide Training

Although it is clear that the involvement of peer contact is critical in the development of social skills for children with ASD, much of the research on peer-mediated interventions involves a small ratio of peers to children with ASD. The recent systematic review of 42 peer-mediated intervention studies conducted by Chan et al. (2009) cited in the previous section showed that ratios of target children to peers in the included studies ranged from 1:2 to 1:10, with only one study that involved the training of an entire class. Of these 42 studies, 91% showed positive results, demonstrating that small group ratios of peers to target students have often been effective in increasing

social skill acquisition.

Although training a few peers effectively provides social support with those peers, training a larger ratio of children on specific social skills to promote and support positive interactions with children with ASD may provide a larger number of peers who would be able to confidently and appropriately interact with children ASD. By using a class-wide training format, it will take roughly the same amount of time to train over 25 peers that it would to train just a few peers, and thus may be a more efficient intervention format. Training more peers may result in broader social training opportunities for children with ASD to learn how to respond with a variety of different peers, social cues and situations. And importantly, peers may not only learn how to support one student in their class but will learn skills to help others with similar social difficulties.

Of the studies included in the Chan et al. (2009) review of the effects of peer-mediated interventions, Kamps et al. (2002) conducted a peer-mediation based study incorporating one of the largest number of peers as the ratio was 5 students with ASD to 51 (roughly 1:10) general education students. The purpose of this study was to evaluate the effects of various peer-mediated strategies on the amount of social interactions exhibited by students with ASD. Peers, ranging between 7 to 14 years old, participated in one of three conditions: a social skills group with a student with an ASD, a cooperative learning group with a student with an ASD, or a control group. Some peers were trained in cooperative learning groups, where the objective of peers was to tutor their partners with ASD in vocabulary and additional curriculum-based subjects. These peers were taught various types of group role responsibilities and basic social skills needed for

working in groups. Other peers were placed into social skills groups, in which their training focused on initiating, responding appropriately, and cooperating during play. Using a single-subject reversal design, observation of social behaviors were conducted during a no treatment phase when each peer was asked to participate in a 15-minute free play period with students with ASD in a special education classroom. For the treatment phase, peers were taught social skills and were observed again during the free play period. Peers earned points when the trained behaviors were exhibited. Both these conditions were conducted within an ABAB experimental design.

Dependent variables observed were frequency and length of social interactions as well as frequency of initiations to the target student by peers. An increase in length of interaction from less than 30 seconds during baseline to 190 or more seconds with treatment was observed for the cooperative learning group. Similarly, the social skills group showed increased interaction length from less than 56 seconds during baseline to a range of 152 to 262 seconds after training treatment. During the generalization phase, in which the data was collected in untrained settings several months after the intervention, both groups had shown considerable success, as the cooperative learning groups had tripled their interactions in comparison to baseline, where the social skills group data was doubled. Though this research showed positive effects when training a larger group of peer mediators per target child than other studies, the effectiveness of implementing a similar procedure on a class-wide scale remains largely unknown and alludes towards future and modified research for class-wide support.

As noted earlier, only one study included in the Chan et al. (2009) review

examined the effects of a class-wide peer training program on the social interactions of students with ASD. In this study, Laushey and Heflin (2000) used a class-wide training program involving kindergarten-aged peers of children with ASD, under the assumption that the training of an entire class would provide more peers to know how to provide appropriate social learning opportunities for a student with ASD in the class. An ABAB design was used to display the effects of this program on two kindergarteners with ASD that were integrated into two different general education classes. One student fell into the mild range on the ASD assessment, while the other student fell within a severe range. Prior to the onset of the study, the researchers consulted with a team of special education teachers and parents in order to develop a list of critical social skills associated with kindergarten success, and that are found challenging for children with ASD. The skills measured during free play were (a) asking for an object and responding according to the answer given, (b) appropriately getting attention of another, (c) waiting for his or her turn, and (d) and looking at or in the direction of a person who is speaking to him or her.

Following a baseline phase, all classmates were trained on the four critical skills and were trained to stay with, play with, and talk to a buddy. The children were taught to pair into dyads, though the pairs changed daily. During the training phase, the primary researcher introduced the instruction by incorporating simplified diversity training. In essence, the children were taught the ways in which people can be similar and different and the advantages of interacting with people who are different than we are. After training, the researchers randomly chose children dyads and allowed each classmate to be paired with the target student at least once during an observed free play session. Each

student was also given a daily tangible item for being a good buddy.

Four social behaviors were observed during free play center time: asking for an object and responding according to the answer given, appropriately getting the attention of another, looking at or in the direction of another person who is speaking to him, and waiting for his turn. Results of this study showed that both target students had more opportunities for practicing these social skills with treatment, relative to baseline phases. Moreover, the percentage of appropriate behaviors exhibited by the target students increased from a baseline mean of 29% to a treatment mean of 75%. These results emphasize that children with ASD exhibited more appropriate social interactions when the peer buddy system was in place. Moreover, in training all the peers in the classroom, target children had more opportunities to practice these skills and to generalize use across various peers, as they practiced with buddies one at a time.

Although limited, research findings suggested that peer mediation studies have been effective, with large groups of peers that are invited to interact on a rotation schedule with the target child on a one-on-one basis. Similar to Laushey and Heflin's (2000) research, an approach to investigating the effectiveness of peer-mediated interventions would be to include the entire class in the training process. Teaching large groups of children the skills to effectively interact with their classmates with ASD may increase the number of peers willing to participate in the intervention, which wouldm in turn, increase the opportunities for target children to access social interaction and hopefully increase the generalization of social skills for the child with an ASD due to the large amount of peers trained.

Peer Expectancies and Understanding of Differences in Others

An interesting aspect of the procedures used in the above Laushey and Heflin (2000) study was the simplified diversity training designed to teach students to respect differences in others. In addition to training peers on specific skills to support children experiencing social difficulties, these authors provided training on understanding individual differences and explained why it is important to initiate and support positive interactions with other students, specifically those perceived as socially different. Given the complex nature of social deficits that students with autism exhibit, DiSalvo and Oswald (2002) suggested that peers' expectancies and understanding of students with ASD with different social abilities may need to be considered to motivate peers to participate in the social skills intervention. Negative expectations about the success of potential interactions with a child with ASD may influence whether or not interactions with a peer occur or are deemed effective. Research has found that it is possible for individuals to overcome negative expectancy effects if they are properly educated about their expectations and are willing to overcome said expectations (Darley & Oleson, 1993). Considering the importance of peer willingness and motivation as components of peer-mediated interventions, peer expectancies about children with disabilities can be a critical consideration when developing training programs (DiSalvo & Oswald, 2002).

Instruction on understanding, respecting, and supporting others is often facilitated within a social-emotional learning (SEL) curriculum. These program are designed to promote behavioral and social competencies that enhance student's success in school and life. Specifically, SEL curriculum targets student skills such as emotional management,

development of positive relationships, concern and care for others, and problem-solving to handle challenging situations (Elias & Arnold, 2006). Because of the recent awareness of high levels of aggressive behaviors in school settings, there has been an extensive surge of research in this area in the past decade (i.e., 152 peer reviewed articles between 2000 to 2011) on the potential of schoolwide SEL programs to promote positive school climate and discipline (Osher, Bear, Sprague, & Doyle, 2010). Currently, many programs exist and several reviews of preliminary data on SEL programs indicate positive impacts on social, emotional, and academic behavioral outcomes when SEL skills are taught in schools (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Greenburg et al., 2003; Wang, Haertel, & Walberg, 1997; Zins et al., 2004). A recent meta analysis of findings from 213 school-wide universal SEL programs conducted by Durlak et al. (2011) show significant positive effects on targeted social-emotional competencies and attitudes about self, others, and school of elementary and high school students.

Caring for others is one of the recognized social-emotional skills contributing toward student success that is particularly relevant to this study. The three components of caring for others are defined by Elias and Arnold (2006) as

> empathy--identifying and understanding the thoughts and feelings of others; respect others--believing that others deserve to be treated with kindness and compassion as part of our shared humanity; appreciate diversity--understanding that individual and group differences complement one another and add strength and adaptability to the world around us. (p, #, 2006).

Generally an SEL school-wide program includes lessons that teach students skillssuch as taking others' perspectives and accepting others' differences. These

concepts, if properly instructed, could have critical implications for increasing peer support for students with ASD. If peer expectancies are changed to the point of peers developing respect for their classmates with social differences, they will be more likely to initiate positive social interaction with individuals with ASD, fostering a positive and thriving classroom environment.

PURPOSE AND OBJECTIVES

There is a strong research base showing that social interactions with peers who are trained specifically on how to support students' social skills deficits can lead to an increase in appropriate social interactions between children with ASD and the trained peers (Chan et al., 2009; Hume, Bellini, & Pratt, 2005; Odom, McConnell, & McEvoy, 1992). Peer training has often been conducted with small groups of peers in teacher-manipulated settings, but few studies have investigated the effect of peer-mediation training with large groups on social interactions (Kamps et al., 2002; Laushey & Heflin, 2000). One critical extension of prior studies examining peer-mediated interventions is to further examine the extent that a class-wide program increases positive interactions and peer contacts for students with ASD in the recess setting.

In formulating the research questions, we hypothesized that the systematic training of peers on both the target childrens' social goals, as well as social support skills to encourage the use of said goals, would provide the classmates of students with ASD the tools to support and positively reinforce newly acquired interaction skills in the natural environment. Further, consideration of peer expectancies are considered by adding respect training to help peers understand that other children face difficulties while learning social skills. Though this type of training is emerging in schools to increase social competency of all students, only one study has evaluated the effect of training of social support skills to an entire general education class in conjunction with respect and diversity training on social skills of a student with ASD (Laushey & Heflin, 2000). Thus, the primary purpose of this study was to examine the influence of a class-wide peer-

mediated intervention that incorporated both respect and social skills training on the frequency of social interactions between peers and students with ASD during recess.

The present research asked the following questions:

1. What is the effect of a class-wide respect and social support skills training on positive social skill interactions between a student with an ASD and his or her peers during recess?

2. What is the effect of a class-wide respect and social support skills training on the number of peer contacts for a student with an ASD during recess?

METHODS

Participants and Setting

Students in three general education classrooms were participants in this study that were recruited from two public elementary schools located in a semi-urban community of a northwestern state. The first school population was constituted of 94.3% Caucasian, 2.7% Latino, 1.2% African American, and 1.8% other ethnic minority students, while 50.8% were male and 49.2% were female. Additionally, 14.8% of the students received free and reduced lunch, 0.9% were English Language Learners, and 8% were students with disabilities. The second school population was constituted of 93.0% Caucasian, 4.7% Latino, 1.1% Pacific Islander, 0.1% African American, and 1.1% other ethnic minority students, while 51.7% were male and 48.3% were female. Additionally, 21.8% of the students received free and reduced lunch, 3.3% were English Language Learners, and 12.2% were students with disabilities.

Target participants, or, students with ADS who participated in this study, were chosen because they were enrolled in three separate class rooms, and were identified as meeting the following criteria: (a) had an IDEA classification of Autism, (b) was learning to use appropriate social skills and would benefit from a class-wide training to increase social interactions, (c) spent recess and a major portion of the day with his or her general education peers, and (d) had some existing language capability.

Several steps were taken to identify the target participants. First, the primary researcher contacted school psychologists and special education teachers in the school district that had been approved for research. The primary researcher verbally contacted

these individuals and offered explanations of the requirements of potential target participants. Nine students with ASD in nine different classrooms were initially referred by teachers and school psychologists to the primary researcher. Second, percentages of the referred students' social interactions were obtained during two 10-minute observations conducted during recess to confirm low levels of social interactions of 40% or less. Norms of elementary students reported in the Systematic Screening for Behavior Disorders Manuel (Walker et al., 1992) show typical social engagement ranging from 65% to 79% for boys and girls between 1-6 grades. Thus 40% was a full 25% lower than this norm, which suggested the need for intervention. Of the nine students observed, only four students had rates of positive social interaction at or below 40%, and formal parental consent and student assent were obtained for these three of these four, as one parent declined (Appendix B). Finally, the primary researcher met with the general education teachers of the three students to discuss the benefits of a class-wide training for all of the students and in order to get their verbal consent regarding the training of a full class on respect and social support skills. Teacher consent was obtained for the three students with ASD, namely Ashley, Carson, and Tyson, from the three separate classrooms. At this point, all students in the three classrooms were selected as peer participants in this study as these students were directly trained to support the target participant in the intervention.

A description of the peer participants' three classes and the specific goals and preferences of the target participants follows. The first selected classroom consisted of 29 fifth-grade students with Ashley as the target participant this classroom. Ashley, a 10-year-old Caucasian female, had been diagnosed with Asperger Syndrome, an Autism

Spectrum Disorder (ASD), at the age of 8, and similarly classified with the IDEA classification of Autism at the same age. By teacher report she was below grade level in writing and math performance, though on grade level in reading. She spent approximately 85% of her day in the general education class, and the other 15% receiving special education services. Her social skills goals as described by the special education team were to appropriately interact with other children, especially in conversation and initiations, and to stay engaged with an activity for a reasonable amount of time. She received 25 minutes weekly one-on-one with the school psychologist to address her social skills goals. Her preferred recess activities included playing tag, swinging, and climbing on the playground.

The second selected classroom consisted of 27 third-grade students with Carson as the target participant in this classroom. Carson was an 8-year-old Caucasian male who had been diagnosed with Autistic Disorder at the age of 5, and classified with the IDEA classification of Autism at the same age. According to teacher report, he was below grade level in reading, writing, and math and had existing language capacity, though he received services in speech and language. He spent approximately 50% of his day in the general education classroom and the remaining 50% with special education services. His social skills goals as described by the special education team were to use effective communication and self-discipline, to interact and cooperate with others by following rules and taking turns, to use appropriate language, and to engage in age appropriate activities. At the onset of the present research he was not receiving any services with the school psychologist to address his social skills goals. His preferred recess activities

included watching the animals through the fence and watching other children play sports.

Finally, the third selected classroom consisted of 28 fourth-grade students with Tyson as the target participant in this classroom. Tyson was a 9-year-old Caucasian male who had been diagnosed with autistic disorder at the age of 5, and similarly classified with the IDEA classification of Autism at the same age. Academically, he was at or above grade level in reading, writing, and math and had existing language capacity. He spent approximately 91% of his day in the general education classroom and the remaining 9% in special education services with the school psychologist, during which he received 30 minutes weekly of peer-mediated services to address his social skills goals. His social skills goals as described by the special education team were to initiate relationships, respond to others in appropriate ways, appropriately deal with conflicts, and manage his anxiety in social situations. His preferred activities included playing basketball and running.

Study procedures were conducted in two locations at each school: the playground and the general education classroom. The classrooms consisted of a range of 27-29 students including one target participant, the general education teacher, and one to two researchers. At both schools, three to six grades were at recess at a given time. Typical recess activities included swinging or climbing on the playground; playing tetherball, dodge ball, basketball or foursquare on the pavement; playing running sports such as soccer, football, or tag on the field; snow activities; or standing around talking with friends in clusters in any of the aforementioned locations.

Observer Training and Interobserver Agreement

The primary researcher and two undergraduate psychology research assistant students observed social interactions between the target participants and peer participants during recess using a Peer Social Behavior Recording Form (Appendix D). Before data collection began, observers were trained to collect data through both verbal and written instruction, as well as through modeling from the trainer (primary researcher). The observers practiced the observation system using the Peer Social Behavior Recording Form to code behavior along with the primary researcher, while observing a randomly selected child on the playground during a 10-minute recess increment. At the end of a session, interobserver agreement (IOA) for each observed social interaction event for target and peeer participants was calculated on an interval-by-interval point basis. Agreement steps (in which both observers agreed that a behavior did or did not occur) were divided by agreements plus disagreements with the remainder multiplied by 100%. For peer contact, the lower number was divided by the higher number and multiplied by 100%. The trainee and trainer reached IOA agreement of over 90% for two consecutive sessions before the trainee was considered trained.

During all the treatment phases of the study, IOA of social interaction and peer contact data was collected for 26.5% of the overall recess observation sessions simultaneously and independently by two trained independent observers. Specifically, IOA was collected for 26.3% of baseline recess observation sessions, and 29.6% of recess observation sessions during the contingent reward condition. Agreement rates regarding the observed social behavior averaged 99% during baseline (range, 96.7% to 100%) and

92% (range, 84% to 98.3%) during the contingent reward condition. Agreement rates regarding the number of peer contacts averaged 99% during baseline (range, 97% to 100%) and 94% (range, 89% to 100%).

Response Definitions

Dependent variables measured during recess observations were the observed social behaviors between peer participants and target participants, and the number of peer (participant) contacts. All variables are described below.

Observed Social Behavior

Three types of social behavior were directly observed between target and peer participants including positive interactions, negative interactions, and alone. Specifically, the social interactions are defined as follows: (a) positive interactions, in which at least one peer participant talked, played, or cooperated during a game with a target participant; (b) negative interactions, in which either peer or target participants yelled at, argued with, became aggressive towards, refused to share materials with, or broke game rules while interacting with each other; and (c) alone interactions, in which a target participant was not within 5 feet of any peer participant or engaged in parallel play (i.e., he or she engaged in similar activities as the peer participant while standing in close proximity, but did not interact either verbally or nonverbally). These behaviors were recorded using a modified version of the Peer Social Behavior Recording Form provided in the Systematic Screening for Behavior Disorder manual (SSBD; Walker et al., 1992).

Direct observation of behavior was conducted during recess to estimate the type

and percentage of time that social behavior was demonstrated between peer participants and target participants. To do this, the target participant was observed to determine the degree that peer participants interacted with him or her. Each social interaction behavior observation was measured for 10-minute sessions using a 10-second momentary time sampling procedure to obtain estimates of behavior rate and duration (Harrop & Daniels, 1986). At the end of each 10-second observation interval, a trained observer (either the primary or a secondary researcher) looked at the target participant for about 3 seconds and recorded on the Peer Social Behavior Recording Form whether the target participant received a positive or negative interaction with one or more peer participants, or if he or she was alone. Only one behavior was recorded for each interval. The percentage of intervals that the target student spent engaging in negative, positive, and alone interactions per session was calculated by dividing the total number of intervals observed by the number of intervals that a specific behavior was observed and multiplying the result by 100.

Number of Peer Contacts

During each 10-minute recess observation session, a trained observer recorded a tally mark for each new peer participant that the target student was positively or negatively interacting with during the session. Once a peer was coded as new, he or she was no longer included in the tally of new peers for the entire observation session. Numbers of peer contact were counted whether the peer interaction was positive or negative. The total number of tallies was counted to quantify the number of unique peer contacts during the 10-minute observation session.

Independent Variables

Baseline

During baseline, data was collected for each target student to assess his or her trends in social interactions and peer contacts at recess prior to any student training.

Class-wide Respect and Social Support Skill Training

The treatment phase commenced and consisted of three components (Appendix E). First, the class received respect and diversity training. Second, the class received social skills and social support skills training. Third, the class entered the contingent reward condition, in which they received prompting and the chance to earn a class-wide reward after a prescribed number of recess observations in which the target participant had positive interactions for at least 40% of the session. Each step is described below.

First, a 30-minute lesson was dedicated to teaching the concepts of respect and diversity. Similar to Laushey's work (2000), respect training focused on accepting other students' differences. The specific respect and diversity components of the lesson were adapted from The Tough Kid Bully Blockers curriculum (Bowen, Ashcraft, Jensen, & Rhode, 2008). This curriculum included implementation of visual aids, class activities, personal reflection, class discussion of accepting other students' differences of expression and abilities, and problem solving ways to include students who were considered different. Instruction was implemented through direct instruction, modeling, and discussion. The purpose of these lessons was to promote respect and empathy towards students who seemed socially different and were isolated at recess. Also, a purpose of

these lessons was to discuss how socially isolated students may have required the support of others, namely their classmates.

Second, two additional 30-minute class-wide lessons addressed the training of peers participants on how to support students who struggle making friends and help them to have positive social interactions. As aforementioned in the participants section, the schools' special education teams informed the primary researcher of the specific social skills goals of each target participant. The primary researcher then created lesson plans addressing the targets' goals relating to social interaction. In addition, peers were taught support skills that would facilitate the acquisition and maintenance of social interactions for the target participant during recess or other social settings. For instance, if the target student had a goal to use appropriate language, the class-wide lesson would be focused on both teaching the skill of using appropriate language, as well as teaching the support skill of how to ignore inappropriate comments and encourage the use of appropriate language. As Ashley, Carson, and Tyson shared similar social skill goals, all three classrooms received training topics such as joining in during play, inviting others during play, taking turns, using appropriate language (giving compliments and not interrupting), ignoring inappropriate language, and making compromises. In Tyson's classroom, the skills of managing anxiety and recognizing anxiety in others at recess were also addressed class-wide, as they were applicable to his goals, and the goal of ignoring inappropriate language was not addressed.

The social skills were taught through direct instruction, live modeling, role-play, performance feedback, and praise. Direct instruction included the introduction of a skill,

a discussion about when to use the skill, and the presentation of the sequential steps in performing the skill. In an effort to increase behavior change, students were asked to demonstrate the skill both through role-plays and during games while receiving praise and feedback (Chandler, Lubeck, & Fowler, 1992). For several of the class role-plays, the researcher suggested that the children act out a social scenario while engaging in one of the target's preferred activities. For instance, during the class-wide lesson in Tyson's class, the researcher suggested that the children pretend to be playing basketball, as this was one of Tyson's preferred recess activities. Though subtle, hopefully the inclusion of the participant's preferences during the class-wide lesson assisted in maintaining the participant's attention and motivation (Shafer et al., 1984). The children demonstrated the skills in the classroom and outside during a "mock recess." Throughout the classroom lessons, the target was present, and was never identified in conjunction with the lessons. The language used during training focused on skills, diversity, and children who had a difficult time making friends, while the word autism was never used.

Immediately following the training component, the contingent reward condition (CRC) was implemented. Specifically, the class comprised of both target and peer participants were briefly prompted directly before each observed recess session as to be reminded of the principles of respect as well as the specific skills and support skills learned in the training lessons. The researchers then observed the target participants, using the same method employed during the baseline observations. Immediately after recess, the researcher praised students for their positive interactions and offered contingent reinforcement if the target had over 40% positive social interaction during the

observation session. The class earned a letter each time they met reinforcement criteria, and after eight administrations of letter distribution (P-O-P-C-O-R-N-! or S-U-R-P-R-I-S-E) the class earned their reward of a popcorn or class party, as determined by the general education teacher. If the target participant had less than 40% positive social interaction, the researcher would not offer the letter, but praise the students' effort and offer feedback on how to improve for the next observation.

Procedures

Recruitment and Participant Selection

As previously described, target participants were initially identified based upon teacher and school psychologist report. Each potential target, with verbal parental permission, was observed directly during his or her recess period to determine if the student, on average, interacted positively with peers less than 40% of the time. If so, he or she was selected as a study target participant. After meeting the additional criteria as explained in the above participants section, these selected students were given a packet to take home to their parents. The packet contained an explanation of the study with an attached form to obtain informed consent, a demographic form (Appendices A and B), and a return envelope. Students and parents were instructed to return completed forms in a sealed return envelope to be collected by the researcher.

After parental consent was ensured and student assent was obtained, the primary researcher met with the teachers and school psychologist to discuss (a) the current social skills exhibited by the target participants and their individualized goals regarding social

improvement, (b) specific behaviors and skills that peers could feasibly help with, and (c) two to three preferred games or themes that are commonly enjoyed by the participants that may be played during recess. This information was used for creating the class-wide respect and social support skills training lessons for each participant and his or her class. The primary researcher also met specifically with the general education teacher to obtain consent for using the rest of the students as peer participants, to gather information regarding class demographics (Appendix C), to schedule convenient times to administer the training sessions, and to discuss reinforcing activities that the class would potentially want to earn.

Implementing Experimental Conditions

After the target and peer participants were selected, baseline observations were conducted to establish behavior performance prior to the training. After baseline performance was established, the recess observations were discontinued and the training sessions were introduced in the classroom at a time established by the teacher. These were delivered by the primary researcher and trained research assistants. All children in the class, including the target child, were present during class-wide training (Appendix E). The primary researcher taught the lessons primarily with teacher and secondary researcher assistance in the classroom, but also for roughly 10 minutes outside, during a mock recess. The rationale for training the children in their typical classroom setting, as well as practicing the taught social skills with feedback at the recess location, was to increase generalization of classroom training to the recess setiing (Blauvet-Harper et al., 2008). Immediately after the class-wide training, the CRC with recess observations began

as students were prompted prior to the observations to remember to use the taught principals and skills from the lessons, were provided feedback, and had an opportunity to earn a reward.

Integrity of Experimental Procedures

Observers assessed procedural integrity during seven out of the nine classroom training sessions, across all three classrooms. Using a procedural checklist of experimental steps, the observer placed a checkmark next to each step that was completed during a session (Appendix F). Integrity data was collected on 39 out of the 51 total training steps (76.5%) and each step was followed with 100% accuracy.

Experimental Design

A nonconcurrent multiple-baseline across classrooms design was employed to assess the effects of the two phases, baseline and treatment, on the social interactions with peers for each of the three students classified with autism. The treatment phase consisted of both the class-wide respect and social support skill training lessons and the subsequent contingent reward condition. A multiple-baseline design was selected because it allowed for a comparison of treatments to be evaluated when target behaviors were likely to be irreversible with a treatment withdrawal because of irreversible learning or contact with natural reinforcing contingencies (Kazdin, 1982).

RESULTS

Figure 1 depicts the percentage of time during which each target participant exhibited positive social interaction, negative social interaction, or alone social interaction (alone or parallel play) behaviors. Figure 2 depicts the number of peer contacts during sessions observed during both baseline and treatment, specifically during the contingent reward condition (CRC). Table 1 presents each target participant's average percentage score, standard deviations, and range of social interaction behaviors as well as number of peers contacted during recess.

Overall, Ashley's, Carson's, and Tyson's classes each earned a class reward contingent on their observed rates of positive interaction. For each successful observation session--namely, when the target had 40% positive peer interaction during recess--the researcher distributed a letter in order to eventually spell a word (e.g., POPCORN! or SURPRISE). Upon completion of the word the children received a class party. Ashley's class earned the reward after 10 observations, and Tyson's class earned the reward after eight observations. Carson's class only met this goal 1 out of 5 days. In consideration of Carson's variable but consistent low level in positive social interactions, at the end of the fifth session, Carson's class was told that they could earn two letters instead of one letter to spell POPCORN. Once this modification in the reward was in place, Carson had positive social interaction above 40% in three of the following four sessions and the class earned the popcorn party the ninth session during the treatment phase.

All three target participants showed gains in peer contacts and positive interaction after the class-wide respect and social support skill training had been delivered.

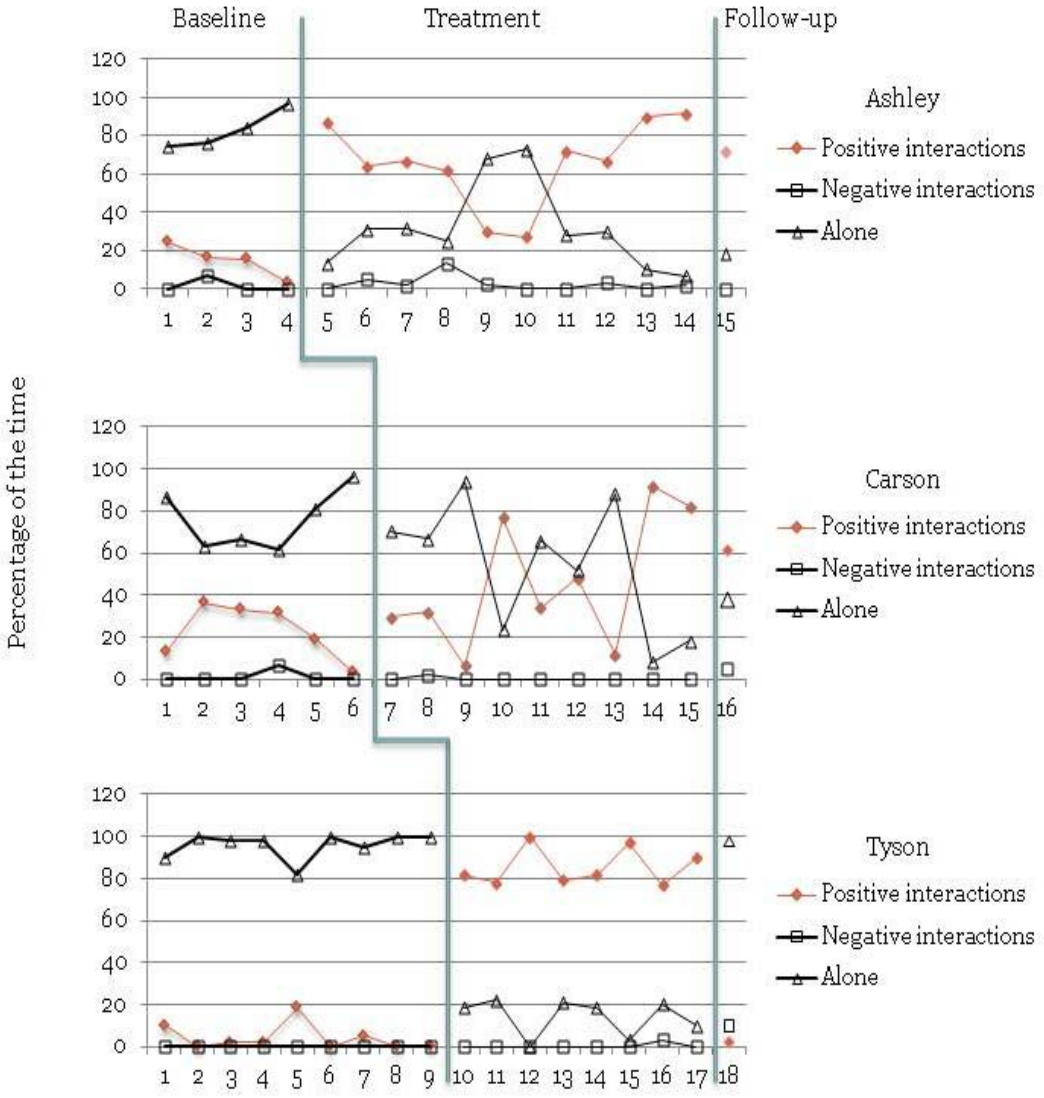

Figure 1. Percentages of positive, negative, and alone interactions for each participant at recess observation sessions during baseline and the contingent reward condition following training sessions.

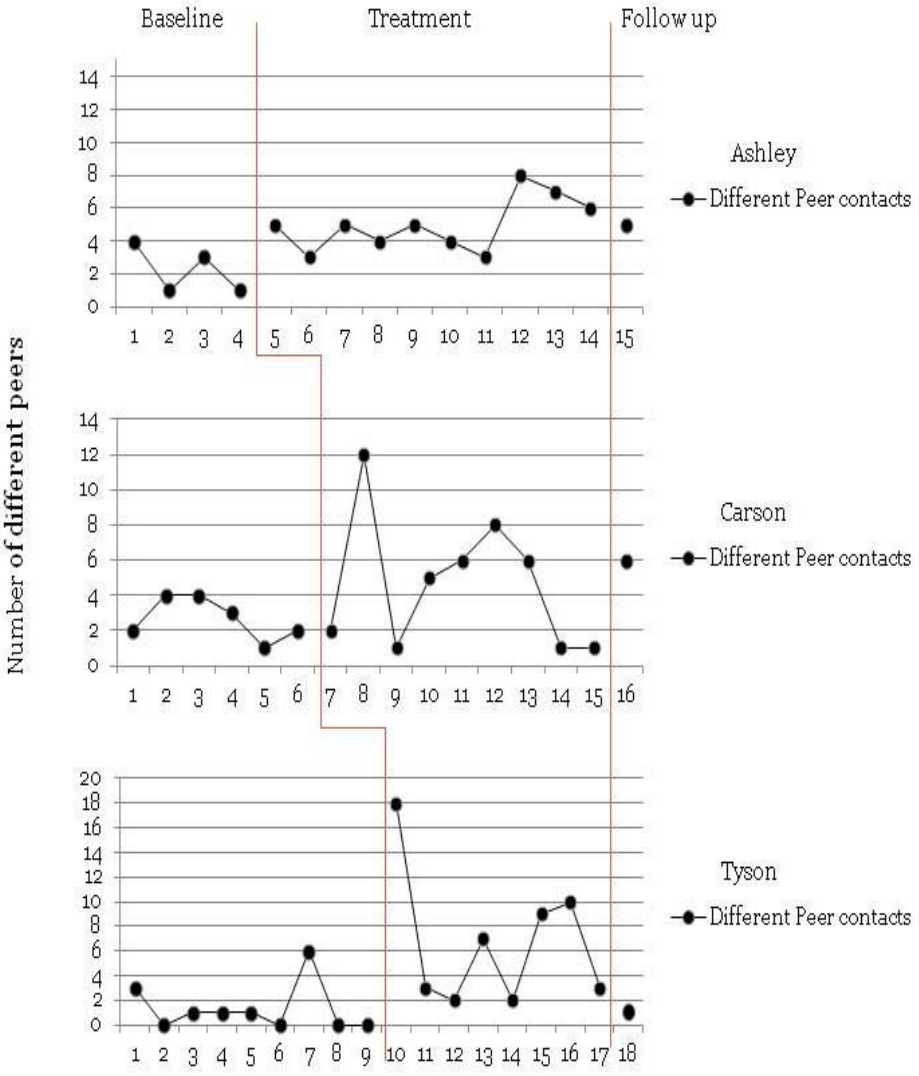

Figure 2. The number of peer contacts for each participant at recess observation sessions during baseline and the contingent reward condition following training sessions.

Table 1

Descriptive Statistics for Participants for Baseline and Treatment

		Positive %			Negative %			Alone %			Peer contact		
Participant		Baseline	Treatment	Follow up	Baseline	Treatment	Follow up	Baseline	Treatment	Follow up	Baseline	Treatment	Follow up
Ashley	Mean	15.2	66.6	72	1.7	2.7	0	83.2	31.7		2.3	5	5
	SD[a]	9.1	22.5		3.3	4.1		10	22.4		1.5	1.6	
	Range	3.0-25.0	27.0-91.7		0.0-6.7	0.0-13.3		75.0-97.0	10.0-68.0		1.0-1.4	3.0-8.0	
Carson	Mean	22.8	45.8	62	1.1	0.2	0	76	54	38.3	2.7	4.7	6
	SD	13.2	31.1		2.7	0.6		14.3	31		1.2	3.8	
	Range	13.3-36.7	6.2-90.2		0.0-6.6	0.0-1.7		63.3-96.6	8.0-93.8		1.0-4.0	1.0-12.0	
Tyson	Mean	4	85.6	1.6	0	0.4	0	95.9	14	98.4	1.3	6.8	1
	SD	6.2	9		0	1		6.3	8.6		2	5.5	
	Range	0.0-18.3	77.0-100.0		0.0-0.0	0.0-3.0		81.7-100.0	0.0-20.8		0.0-6.0	2.0-18.0	

[a] *= standard deviation*

further discussion. As shown in Figure 1, during baseline Ashley did not positively interact with peers more than 25% of the time and showed a decreasing trend to 3% prior to training. As shown in Figure 2, during baseline the number of peers she interacted with was variable, but her highest number of peer contacts during an observation period was 4. Overall, she was predominantly alone and she showed few negative interactions with her peers during the baseline condition.

During the contingent reward condition, Ashley's positive social interactions remained above 60% for 80% of the observation sessions and she was alone less than 40% of the time for 80% of the observation sessions. Ashley also showed an increasing trend in positive interactions during the last three observation sessions, while her negative interactions remained low during observations collected during both baseline and CRC. The number of peer contacts remained variable but showed a higher overall level of peers contacted relative to baseline, with a slight increasing trend over time with treatment. Her highest number of peers interacted with during the CRC was eight. Overall, in comparing her average baseline observations and her average observations during the CRC, there was a 51.4% increase in positive social interactions, a 51.5% decrease in her alone social interactions, a slight increase of 1% in her negative social interactions, and an increase in her number of peer contacts by an average of 2.7 children.

The second participant, Carson, did not reach percentages of positive interaction above 36.7% throughout the baseline phase and he was predominantly alone. His last five baseline observations showed a decreasing trend toward 13.3% positive interaction and he showed few negative interactions with his peers prior to class-wide respect and social

support skills training. When interacting with others during the baseline, Carson interacted with at least two peers for 83% of the observations, although the highest number of peers he interacted with was four.

During the CRC, Carson's negative interactions remained low. However, Carson's positive social interactions varied greatly for the first five sessions with only one of the five sessions above baseline performance. When the reward was modified to increase the chance to earn the reward was put into place, positive interactions steadily increased. Interestingly, Carson interacted with more than four peers per observation for 55% of the CRC observations, although he interacted with only one peer for 33% of the total observations. Overall, in comparing his average baseline and CRC observations, there was a 23% increase in his positive social interaction, a 22% decrease in his alone social interactions, a slight 0.9% decrease in his negative social interactions, and an increase in his number of peer contacts by an average of two children.

The third participant, Tyson, had the least amount of positive social interaction in the baseline phase in comparison to the other participants. His average positive social interaction did not exhibit an increasing or decreasing trend, but hovered near zero, as only two out of nine baseline observations reached 10% or above. When he did briefly interact with peers, no negative interactions were observed and he mainly interacted with only one peer at a time, although he did briefly interact with as many as six peers during one observation.

Tyson's level of positive social interactions immediately increased after training and remained above 75% during all observed CRC sessions. His negative interactions

remained low and the amount of time he was alone fell below 25% for all of the CRC sessions. The number of peers he contacted was variable but remained above two peers during all of the CRC observations, and reached up to 18 peers for the first observation. Overall, in comparing his average baseline observations and his average CRC observations, there was an 81.6% increase in his positive social interactions, an 81.9% decrease in his alone social interactions, a slight increase of 0.4% in his negative social interactions, and an increase in his number of peer contacts by an average of 5.5 children.

A brief follow-up observation was also conducted to assess maintenance after the CRC had been terminated for 131 days for Ashley and 72 days for Carson and Tyson. From the cessation of CRC to the date of the follow-up observation, Ashley did not have any changes to her special education service pattern. Carson received an additional four hours of social skills training in a group format for 30 minutes per week with one peer with autism and three typically developing peers. Tyson's service pattern dropped from 30 minutes per week to 30 minutes per month of peer-mediated social skills treatment with his school psychologist. At the follow-up observation, Ashley showed positive interaction at 72% and five peer contacts compared to the CRC at an average of 66.6% positive interaction and five peer contacts. She had 0% negative interaction and 18% alone interactions. Carson positively interacted 62% of the time with six peer contacts, in comparison to the CRC average of 45.8% positive interaction, and 4.7 peer contacts. He had 0% negative interaction and 38.3% alone interactions. Alternatively, Tyson's positive social interaction decreased substantially relative to the CRC average, from 85.6 % to 1.6%. He had one peer contact, 98.4% alone interaction, and 0% negative interaction.

DISCUSSION

Findings

Considering that socialization is a core deficit of children with ASD, and that increasing peer support is a well-supported and effective strategy to increase social interactions, additional research on improving peer-mediated interventions across multiple peers in natural settings is warranted. These findings extend to the growing research literature regarding the training of students in a regular education classroom for the purpose of increasing social interactions of children with ASD in naturalistic recess settings (Blauvet-Harper et al., 2008; Chan et al., 2009; DiSalvo & Oswald, 2002; Morrison, Kamps, Garcia, & Parker, 2001).

Specifically, the present findings indicate that a class-wide intervention teaching peers lessons on respect and specific social supportive skills when interacting with children experiencing social difficulties, combined with a group contingency reward, is effective in improving positive social interactions for students with ASD. All three target participants' improvement in positive interactions suggests that this peer mediated intervention was effective; a finding that is consistent with few prior research studies which implemented peer mediation training with large groups of children (Kamps et al., 2002; Laushey & Heflin, 2000). But importantly, these results were obtained in a common social environment in school settings that consisted of a typical population of students.

Another important finding of this study was evidence that this class-wide training

also increased the number of different peer contacts that interacted with each target student relative to the baseline condition. Increasing the number of peer contacts may have effectively provided the opportunity for a student with ASD to practice social skills with several peers with diverse response characteristics and modeling examples. A plausible reason why the intervention procedures used in this study increased peer contacts may have been that the purposeful targeting of skills that an individual student with an ASD was attempting to learn may have enhanced the awareness for peers regarding the specific social struggle that is occurring in their classrooms. Individual differences were also considered by taking into account each student's preferred activities in the modeled examples and role-plays during training sessions (Shafer et al., 1984). Focusing on specific supportive skills to use during specific activities in which the student with ASD would more likely participate may have provided a salient opportunity for peer participants to use supportive skills at recess.

Another plausible explanation for the intervention effects may be that the provision of class-wide group reward contingent on high levels of positive social interactions with the student with ASD may have established a common goal to assist students with social deficits (DiSalvo & Oswald, 2002). Teaching typically developing children the necessary skills to support others, along with ongoing prompting and rewards, may have made it easier and more motivating for peer participants to interact with the target participants. Providing motivation for a group reward may have also enhanced peers seeking out opportunities to support others.

However, given that approximately 28 students were trained per class, a small

percentage of the trained peer participants actually contacted the target participant during the contingent reward condition. Thus, the class reward was noncontingent for many students. In other words, the procedure may have been ineffective because it allowed some students to earn a reward that was not contingent on their interacting with a student who needed social support. Although non-contingent rewards pose a common issue with group contingencies, additional research on the function and need of a motivation strategy to facilitate peer support would provide important information on specific peer-mediated intervention procedures.

Although not measured, the respect and diversity training may have helped decrease discomfort and /or increase awareness of students needing social support. A possible concern frequently noted in the literature on peer-mediated interventions is the potential for singling out a student with social skill deficits and further excluding this student. In this study, this concern was addressed by training peers without targeting any specific disability, which could have possibly stigmatized individual students. Although the social skills goals and preferred social activities of each student with ASD were integrated within each lesson, the three students were not directly identified within the trainings. Instead, the intervention was introduced with a brief segment on respecting and being aware of individual differences that are common among any school population, and thus set the expectation that it is everyone’s responsibility to work together to become aware of students who may need some support and help all students participate, learn, and enjoy social experiences during recess (DiSalvo & Oswald, 2002).

It is also important to note that adding this brief segment on respecting differences

combined the evidenced-based principles of peer-mediated social skills training with the principles of prosocial education. The present study provided opportunities for children to increase social awareness of others and to contribute to their class and school community (Hawkins, Smith, & Catalano, 2004). Linking this respect lesson with the supportive skills training may have encouraged the peers' understanding, knowledge, and skills needed to interact with the student in their class who has social skills deficits. This type of training aligns with the recent universal school-based efforts to promote students' social and emotional learning (SEL) to enhance all children's success in school (Elias et al., 1997; Elias & Arnold, 2006). SEL is designed to teach students skills to manage emotions, be concerned for others, make responsible decisions, establish positive relationships, and handle challenging situations (Harlacher & Merrell, 2010). Teaching a SEL curriculum has been shown to significantly improve prosocial behaviors and attitudes about self, others, and school, as well as academic performance (Durlak et al., 2011). Thus, this type of training can occur in the classroom to not only prevent future problems but to assist students experiencing severe difficulties without naming specific students.

This study's results offers support for further consideration and investigations of integrating SEL programs for serving all students while supporting children with ASD. However, since this research specifically targeted three individual students' social goals and needs, it has yet to be determined to what degree this strategy would generalize to various student populations (e.g., ADHD, socially withdrawn). Moreover, the degree to which this type of intervention prevents teasing and stigmatization of students with ASD

by peers remains unknown.

Limitations

Though the present study contributes to the field of research regarding peer-mediated interventions for children with ASD as well as SEL, multiple limitations of this study suggest areas for further research. Clearly, generalization of the results to other students with ASD is limited given the small sample of students and the variation in grade level between subjects. Research supports that prosocial behavior and empathic development generally increase from early childhood to middle childhood (Groeben et al., 2011; Hughes et al., 1981). Thus, the training regarding the principles of respect could have been of higher interest to the older children. Carson, in third grade, had the least consistent gains in positive social interaction in the treatment phase, whereas the target participants in fourth and fifth grade both had consistently marked gains in positive social interaction in comparison to baseline. Moreover, variation in peer response may also have been due to the level of the targets' social and language ability; social skills goals; or interests, such as games, that naturally result in participation with groups of peers. Clearly, more research is required to examine explanations for response differences to the class-wide program in natural settings.

A second limitation was that the observations method used in this study did not allow an adequate assessment of verbal interactions and the degree that verbal interactions may have influenced variation in the data during the recess observations. Close proximity to target and peer participants is required to accurately observe and code

the students' verbal behaviors. However, observations were coded from a short distance in order to maintain target participants' anonymity and not reveal him or her as the purpose for the class-wide lessons and subsequent reward. Although the high inter observer agreement ratings suggested a reliable measure of the observed behaviors, the utilization of the momentary time sampling observational procedure may have also influenced the estimation of actual social behaviors that occurred. That is, as the observers looked up during the last few seconds of the 10-second interval, it is probable that the observer's ability to a estimate whether the interaction was positive or negative was less accurate relative to observation of social interactions during the entire interval.

A third limitation of the study was the lack of data on the type of contact exhibited by each peer contact. Because the number of peer contacts were tallied only once, it was not possible to determine the frequency and duration of each peer's positive and negative interactions with the target participant. Though overall rates of negative social interaction were low in both the baseline and treatment phases for all students, more accurate data collection measures would have yielded useful information on the degree that each peer contact positively supported the observed student.

A fourth limitation was the lack of understanding of which components of the intervention were primarily responsible for the increase in positive interactions. Given the importance of time and resources in a school setting, an analysis of the separate effects of the components or a comparison of a different mix of components may identify which steps are applicable for optimal yet feasible effects.

A fifth limitation of the study was that only one follow-up observation was

conducted per target participant, which did not offer a clear representation of progression or regression regarding positive social interactions in comparison to the treatment phase. Although an attempt was made to assess the lasting effects after the removal of the intervention, the research did not have control of the special education service pattern that the target participants received. Though Ashley did not experience a change in social skills services as provided by her school psychologist, both Carson and Tyson did. Namely, Carson received an additional four hours of social skills training in a group format for 30 minutes per week in a small group setting, whereas he was receiving no social skills services prior to or during the phases of the present study. Though Carson's positive social interactions appeared to have maintained at a high level since the time of the treatment phase observations, it is impossible to attribute the present study as the primary cause behind his and his general education class's success, as his additional service pattern likely was a contributing factor. Moreover, Tyson's service pattern dropped from 30 minutes per week to 30 minutes per month of peer-mediated social skills treatment with his school psychologist, whereas he had been receiving weekly social skills services prior to the onset of the present research. Though the follow-up observations showed a decrease of positive social interactions in comparison to the trend he exhibited during the treatment phase, it is impossible to predict that Tyson's positive interactions would have returned to his baseline trend after time had passed because his ongoing social skills treatment from his school psychologist had ceased. Additional researchers may find what types of fading strategies or ongoing levels of peer intervention are needed to maintain positive interactions for target children.

Finally, it is important to note the lack of comparison between participant outcome and baseline peer interactions during recess. The researcher did not specifically track which peer participants interacted with the target participant during baseline, and which peer participants interacted with the target participant after receiving training. Moreover, given that the dependent variable of positive social interaction was coded as such if either the participant or the peer was engaging in positive social behaviors, it is impossible to decipher specifically whether or not the target participants' behavior changed, or whether the peer participants' behavior changed. Thus, it is unclear if the maintenance of peer interactions were due to the peers' or the targets' correct implementation of specific social behaviors. But in consideration of this limitation, the presented data supports that the three students with ASD received increased practice in appropriate social interactions with their peers in an unstructured social setting.

Implications for Further Research and Practice

In spite of the limitations, the results of this study offer promising practical implications to improve peer interactions with children with ASD during unstructured recess settings. Even with consideration of the variability within and across target participants, increasing trends in positive social interactions and the number of peer contacts were reliable treatment effects relative to baseline performance. Yet, the structure of the intervention procedures affords flexibility to future researchers or especially practitioners such as school psychologists or counselors. The respect and social support skills lessons can be easily adapted to an individual child and his or her general

education classroom, as there are various programs targeting SEL (Zins et al., 2004), and a myriad of social skills (Bellini, 2006; Bowen et al., 2008) to choose from in lesson development. As each school psychologist becomes familiar with a particular student's social skills goals, as well as the climate of the student's general education classroom, he or she can tailor the lesson to the specific circumstances of the children in need of service.

The simplicity of this intervention within the general education setting is another noteworthy benefit of this intervention. First, the training delivered over 90 minutes is relatively short in comparison to social skills training or respect and diversity training programs that can take multiple sessions to complete and are delivered over several weeks. Some school psychologists may wish to offer class-wide lessons once a week for several weeks, with follow-up or "booster" lessons in order to ensure more time for guided practice and feedback with the target participants and their classmates, and potentially see more lasting or drastic results. Though the brevity of the training package could be seen as a limitation, it can also be seen as a strength, as it efficiently covered both SEL topics and social support skills for members of the class while taking up a reasonable amount of classroom time, suggesting the potential ease and practicality of its implementation in a school setting. Moreover, no peer was removed to be trained outside of the classroom setting; all students were included.

Regarding its class-wide delivery, the present study is similar in philosophy to the Response to Intervention movement, in that children at various skill levels will be affected by the training. Response to Intervention is a conceptual model that delivers

services or interventions at primary, secondary, and tertiary levels (Burns & Gibbons, 2008). For instance, students who require primary or universal levels of behavior support can access basic information and review through class-wide respect and social support skills training. Students requiring strategic or secondary levels of support can be given opportunities to practice social skills with appropriate modeling and feedback. Students at this level may not have individualized social skills goals that are served through special education like the target participants in this study, but they may have varying degrees of social withdrawal, impulsivity, bullying behaviors, disrespect towards diverse individuals, and so forth. Finally, students requiring tertiary levels of intervention would likely be the target students in subsequent research. These children would likely be receiving specialized support through special education, and thus the class-wide training would serve as a supplemental intervention. A class-wide respect and social support skills training package instructs children requiring varying levels of training, and promotes a positive class climate. While a primary goal of this study was to support children with ASD, incorporating this focus within an SEL curriculum also potentially serves as a universal program that benefits all students.

In conclusion, additional research is continually needed to address the social progression of children with ASD. The research addressing the effectiveness of various peer-mediated strategies must continue to be evaluated. Though the present study incorporated a class-wide delivery and SEL curriculum, additional possibilities for creating and refining lasting social skills interventions for children with ASD are vast.

REFERENCES

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Bellini, S. (2006). *Building social relationships: A systematic approach to teaching social interaction skills to children and adolescents with Autism Spectrum Disorders and other social difficulties* (1st ed.). Shawnee Mission, KS: Autism Asperger.

Bellini, S., Peters, J., Benner, L., & Hopf, L. (2007) A meta-analysis of school-based social skills interventions for children with autism spectrum disorders. *Remedial and Special Education, 2*(3), 153-162.

Blauvet-Harper, C., Symon, J. B. G., & Frea, W. D. (2008). Recess is time in: Using peers to improve social skills of children with autism. *Journal of Autism and Developmental Disorders, 38*, 815-826.

Bowen, J., Ashcraft, P., Jenson, W. R., & Rhode, G. (2008). *The tough kid bully blockers book: 15-minute lessons for preventing and reducing bullying.* Eugene, OR: Pacific Northwest.

Burns, M. K., & Gibbons, K. A. (2008). *Implementing response to intervention in elementary and secondary schools* (1st ed.). New York, NY: Taylor and Francis Group.

Cesaroni, L., & Gerber, M. (1991). Exploring the experience of autism through first hand accounts. *Journal of Autism and Developmental Disorder, 21*, 303-313.

Chan, M.J., Lang, R., Rispoli, M., O'Reilly, M., Sigafoos, J., & Cole, H., (2009). Use of peer-mediated interventions in the treatment of autism spectrum disorders: A systematic review. *Research in Autism Spectrum Disorders*, *3*, 876-889.

Chandler, L. K., Lubeck, R. C., & Fowler, S. A. (1992). Generalization and maintenance of preschool children's social skills: A critical review and analysis. *Journal of Applied Behavior Analysis*, *25*(2), 415-428.

Darley, J. M., & Oleson, K. C. (1993). Introduction to research on interpersonal expectations. In P. D. Blanck (Ed.), *Interpersonal expectations: Theory, research, and applications. Studies in emotion and social interaction* (pp. 45-63). New York, NY: Cambridge University Press.

DiSalvo, C. A., & Oswald, D. P. (2002). Peer-mediated interventions to increase the social interaction of children with autism: Consideration of peer expectancies. *Focus on Autism and Other Developmental Disabilities*, *12*(4), 198-207.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, *82*(1), 405-436.

Elias, M. J., & Arnold, H. (2006). The connection between academic and social-emotional learning. *The educator's guide to emotional intelligence and academic achievement* (pp. 4-15). Thousand Oaks, CA: Corwin Press.

Elias, M. J., Zins, J. E., Weissberg, K. S., Greenberg, M. T., Haynes, N. M., & Kessler, R. (1997). *Promoting social and emotional learning: Guidelines for educators*.

Alexandria, VA: Association for Supervision and Curriculum Development.

Frea, W. D. (1995). Social-communicative skills in higher-functioning children with autism. In R. L. Koegel & L. K. Koegel (Eds.), *Teaching children with autism: Strategies for initiating positive interactions and improving learning opportunities* (pp. 53-66). Baltimore, MD: Brookes.

Greenburg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., & Elias, M. J. (2003). School-based prevention: Promoting positive social development through social and emotional learning. *American Psychologist*, *58*(6/7), 466-474.

Gresham, F. M., Sugai, G., & Horner, R. H. (2001). Interpreting outcomes of social skills training for students with high-incidence disabilities. *Teaching Exceptional Children, 67*, 331-344

Groeben, M., Perren, S., Stadelmann, S., & von Klitzing, K. (2011). Emotional symptoms from kindergarten to middle childhood: Associations with self- and other-oriented social skills. *European Child & Adolescent Psychiatry, 20*(1), 3-15.

Haring, T., & Breen, C. (1992). A peer-mediated social network intervention to enhance the social integration of persons with moderate and severe disabilities. *Journal of Applied Behavior Analysis, 25*(2), 319-333.

Harlacher, J., & Merrell, K. (2010). Social and emotional learning as a universal level of student support: Evaluation of the follow-up effect of strong kids on social and emotional outcomes. *Journal of Applied School Psychology, 26*(3), 212-229.

Harrop, A., & Daniels, M. (1986). Methods of time sampling: A reappraisal of momentary time sampling and partial interval recording. *Journal of Applied Behavior Analysis, 19*(1), 73-77.

Hawkins, J. D., Smith, B. H., & Catalano, R. F. (2004). Social development and social and emotional learning. In J. E. Zins, R. P. Weissberg, M. C. Wang, & H. J. Walberg (Eds.) *Building academic success on social and emotional learning: What does the research say?* (pp. 135-156). New York, NY: Columbia University, Teachers College.

Hughes, R., Tingle, B. A., & Swain, D. B. (1981) Development of empathic understanding in children. *Society for Research in Child Development, 52*, 122-128.

Hume, K., Bellini, S., & Pratt, C. (2005). The usage and perceived outcomes of early intervention and early childhood programs for young children with autism spectrum disorder. *Topics in Early Childhood Special Education, 25*(4), 195-207.

Kamps, D. M., Barbetta, P. M., Leonard, B. R., & Delquadri, J. (1994). Class wide peer tutoring: An integration strategy to improve reading skills and promote peer interactions among students with autism and general education peers. *Journal of Applied Behavior Analysis, 27,* 49-61.

Kamps, D., Royer, J., Dugan, E., Kravits, T., Gonzalez-Lopez, A., Garcia, J.,… Kane, L. G. (2002). Peer training to facilitate social interaction for elementary students with autism and their peers. *Exceptional Children, 68*(2), 173-189.

Kazdin, A. A. (1982), *Single-case research designs: Methods for clinical and applied settings*. New York, NY: Oxford University Press.

Koegel, R. L., Openden, D., Fredeen, R. M., & Koegel, L. K. (2006). The basics of pivotal response treatment. In R. L. Koegel & L. K. Koegel (Eds.), *Pivotal response treatments for autism: Communication, social, and academic development* (pp. 3-30). Baltimore, MD: Paul H. Brookes.

Laushey, K. M., & Heflin, L. J. (2000). Enhancing social skills of kindergarten children with autism through the training of multiple peers as tutors. *Journal of Autism and Developmental Disorders*, *30(3*), 183-193.

McClelland, M. M., Morrison, F. J., & Holmes, D. H. (2000). Children at-risk for early academic problems: The role of learning-related social skills. *Early Childhood Research Quarterly 15*, 307-329.

McGee, G. G., Feldman, R. S., & Morrier, M. J. (1997). Benchmarks of social treatment for children with autism. *Journal of Autism and Developmental Disorders*, *27*, 353-364.

Morrison, L., Kamps, D., Garcia, J., & Parker, D. (2001). Peer mediation and monitoring strategies to improve initiations and social skills for students with autism. *Journal of Positive Behavior Interventions*, *3*(4), 237-250.

Odom, S. L., Brown, W. H., Frey, T., Karasu, N., Smith-Cantor, & Strain, P. (2003). Evidence-based practices for young children with autism: Contributions for single-subject design research. *Focus on Autism and Other Developmental Disabilities*, *18*, 166-175.

Odom, S. L., McConnell, S. R., & McEvoy, M. A. (1992). *Social competence of young children with disabilities: Issues and strategies for intervention.* Baltimore, MD: Paul H. Brookes.

Osher, D., Bear, G. G., Sprague, J. R., & Doyle, W. (2010). How can we improve school discipline? *Educational Researcher, 39,* 48-58.

Pierce, K., & Schreibman, L. (1997). Using peer trainers to promote social behavior in autism: Are they effective at enhancing multiple social modalities? *Focus on Autism and Other Developmental Disabilities, 12,* 207-218.

Rice, C. (2009). *Prevalence of Autism Spectrum Disorders--Autism and developmental disabilities monitoring network, United States, 2006. Surveillance Summaries, 58*(SS10), 1-20. Retrieved from htttp://www.cdc.gov/mmwr/preview/ mmwrhtml/ss5810a1.htm

Rogers, S. J. (2000). Interventions that facilitate socialization in children with autism. *Journal of Autism and Developmental Disorders, 30,* 399-409.

Roeyers, H. (1996). The influence of non-handicapped peers on the social interactions of children with a pervasive developmental disorder. *Journal of Autism & Developmental Disorders, 26,* 303-320.

Sasso, G., Mundschenk, N., Melloy, K., & Casey, S. (1998). A comparison of the effects of organismic and setting variables on the social interaction behavior of children with developmental disabilities and autism. *Focus on Autism and Other Developmental Disabilities, 13*(1), 2-16.

Scattone, D. (2007). Social skills interventions for children with autism. *Psychology in*

the Schools, 40(7), 717-726.

Shafer, M. S., Egel, A. L., & Neef, N. A. (1984). Training mildly handicapped peers to facilitate changes in the social interaction skills of autistic children. *Journal of Applied Behavior Analysis, 17,* 461-476.

U.S. Department of Education, Office of Special Education Programs. (2004). Section 300.8 (c)(1)(i). Retrieved from http://idea.ed.gov/

U.S. Department of Education, Office of Special Education Programs. (2009). *Annual report tables (data file).* Available at http://www.ideadata.org/AnnualTables.asp.

Volker, M. A., & Lopata, C. (2008). Autism: A review of biological bases, assessment and intervention. *School Psychology Quarterly*, *23*(2), 258-270.

Walker, H., Severson, H., Todis, B., Block-Pedego, A., Williams, G., Haring, N., & Barckley, M. (1992). Systematic screening for behavior disorders (SSBD): Further validation, replication, and normative data. *Remedial and Special Education, 11*(2), 32-45.

Wang, M. C., Haertel, G. D., & Walberg, H. J. (1997). Learning influences. In H. J. Walberg & G. D. Haertel (Eds.), *Psychology and educational practice* (pp. 199-211). Berkeley, CA: McCatchan.

Zins, J. E., Weissberm, R. P., Wang, M. C., & Walberg, H. J. (2004). *Building academic success on social-emotional learning: What does the research say?* New York, NY: Teacher College Press.

APPENDICES

Appendix A:

Parent Packet

Child Information Survey

1) Child's age: _____ Birth date: _____

2) Child's grade level: _____

3) Child's gender (Check one): _____ male _____ female

4) Child's ethnicity (Check one):

_____ Latino/a _____ African American _____ Caucasian

_____ Asian _____ Native American
_____Other_____

5) When was your child diagnosed with an Autism Spectrum Disorder?
_____

Appendix B:

Informed Consent

Department of Psychology
2810 Old Main Hill
Logan UT 84322-2810
Telephone: (435) 797-2034

v6 8/27/2009

USU IRB Approval: Oct. 24, 2010;
Page 62 of 91
Approval Terminates: 10/25/2011
Protocol #2565
IRB Password Protected per IRB

INFORMED CONSENT

Class-wide Skill and Empathy Training to Increase Peer Social Support for Students with Autism Spectrum Disorders

Dear Parents,

Introduction/Purpose: Professor Donna Gilbertson in the Department of Psychology at Utah State University is conducting a research study to find out more about classwide programs that will help classmates positively support social interactions with students classified with Autism who are experiencing social skill deficits during recess. This type of peer support program has been very effective when a few classmates have been trained to support students with Autism. Due to this effective support, we are further investigating if support from a larger group of trained peers would result in more peers learning how to support their classmates with Autism, which will in turn increase the number of opportunities for children with Autism to practice social skills. You have been asked to take part because your child has been classified as a student with Autism and is working on social skills. There will be approximately three participants at this site and in this research. Your child would be working with Melanie Orton, a master's student, under the supervision of Dr. Donna Gilbertson, to learn and practice supportive skills with your child's classmates in his or her class.

Procedures: If you agree to allow your child to participate in the intervention, the following will happen to your child.

1. First, we would like you to tell us a little bit about your child by filling out the attached brief survey. This completed brief survey may be turned in with the signed consent form. We will observe your child for 15 minutes during recess

times to assess the level of your child's social interactions with peers. We expect these observations to be conducted for four to ten recess times for three to four days a week. If your child is appropriately interacting with peers more than 40% of the time and participated in positive social interactions with no more than 2 different peers, then the proposed intervention may not be needed and your child will not be included in the study.

2. If your child is included, then your child's teacher will be interviewed regarding your child's specific social skills goals with other children. This interview will be conducted to determine what type of supports from your child's classmates would best benefit your child social interactions.
3. Next, your child, along with the other members in his/her class will participate in no more than four 20-minute training sessions to learn social-emotional learning that will emphasize empathy towards classmates and positive and appropriate skills to support other students in social interactions. These lessons will support the social skills that will be tailored to the current social needs of your child. Consequently, your child, along with the rest of the class, will miss a total of 80 minutes of class time. We will also work with his teacher to determine if your child would also benefit from a brief one-on one training either with us or his teachers to ensure your child also learns the skills. However, we will work with teachers to determine when the best time would be to work with your child and the class so that no school work will be missed.
4. Following this brief class-wide program, we will observe your child again during recess to assess the level of your child's social interactions after the class has learned how to support positive social interactions with their classmates. We expect these observations to be conducted for 15 minutes during recess for fifteen to twenty recess sessions for three to four days a week. With the monitoring of recess before training, training, and monitoring if training helped, your child would be participating in this project for about 4 to 6 weeks.

Risks: Participation in this research study may involve some added risks or discomforts. Because we are teaching peer support skills specifically for children with Autism your child may experience slight discomfort from participating in the lessons. There is also small risk that the observation information could be accidentally disclosed. We have worked out a variety of ways to minimize this risk, including using a code rather than a name on any data collection paper products or computer files and password protecting files and computers. If any other unforeseen risks are identified, we will immediately notify you.

Benefits: This program may or may not benefit your child by giving him/her the opportunity to learn about social-emotional skills such as empathy, as well as experience

increased frequency of peer contact. Additional benefits your child may experience include improved peer relations and increased social support. Also, the information gained by this study could potentially help us learn more about how to support children with Autism who may be experiencing difficulties with learning and keeping appropriate social interactions with classmates.

Confidentiality: Research records will be kept confidential and consistent with federal and state regulations. We will use a code number instead of a name on all collected data. Your child's name will be on the attached survey but upon receiving this sheet form you we will immediately insert this information into a computer program only using an identification code and destroy this sheet. Further, a restricted password will be used for all files stored on a computer. All other information with codes collected from this study will be kept in a locked file cabinet in a locked room of Dr. Gilbertson at USU. Only Dr. Gilbertson and Melanie Orton will have access to the data. Final reports will be in summary form with group data information; no participant will be identified.

Voluntary Participation and Right to Withdraw: Your participation in this study is completely voluntary. You and your child have the right to ask questions at any time and may withdraw participation at any time without consequence. As mentioned above, you may be withdrawn from this study without your consent by the investigator if your child was not showing low levels of interactions with his or her classmates during recess.

New Findings: During the course of this research study, you will be informed of any significant new findings (either good or bad), such as changes in the risks or benefits resulting from participation in the research, or new alternatives to participation that might cause you to change your mind about continuing in the study. If new information is obtained that is relevant or useful to you, or if the procedures and/or methods change at any time throughout this study, your consent to continue participating in this study will be obtained again.

Explanation & offer to answer questions. Melanie Orton has explained this research study to you and answered your questions. If you have other questions or research-related problems, you may reach Professor Gilbertson at (435)797-2034 or donna.gilbertson@usu.edu or Melanie Orton at (801) 915-4231.

IRB Approval Statement The Institutional Review Board for the protection of human participants at USU has approved this research study. If you have any pertinent questions or concerns about your rights or a research-related injury, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu. If you have a concern or complaint about the research and you would like to contact someone other than the

research team, you may contact the IRB Administrator to obtain information or to offer input.

Copy of Consent: This package contains two copies of this Informed Consent form. Please check if you would like your child to participate, sign both copies, keep one for your files. Please have your child return one signed copy with the survey you choose to complete in the attached envelope to his or her teacher.

Investigator Statement "I certify that the research study has been explained to the individual, by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered."

_____	_____
Donna Gilbertson, Ph.D.	Melanie Orton, M.S.
Principal Investigator	Graduate Researcher
(435) 797-2034	(801) 915-4231
donna.gilbertson@usu.edu	omelanie@gmail.com

Signature of Participant's parent By signing below, I agree to have my child participate.

_____ _____

Parent or guardian's signature Date

Printed Name of Child_____

Child/Youth Assent: I understand that my parent(s)/guardian is/are aware of this research study and that permission has been given for me to participate. I understand that it is up to me to participate even if my parents say yes. If I do not want to be in this study, I do not have to and no one will be upset if I don't want to participate or if I change my

mind later and want to stop. I can ask any questions that I have about this study now or later. By signing below, I agree to participate.

_____ _____

Name Date

Appendix C:

Class Information Sheet

Class Information Sheet for

Participant code: _____

Number of

_____ Boys in class
_____ Girls in class

_____ Latino/a
_____ African American
_____ Caucasian
_____ Asian
_____ Native American
_____Other_____

_____Special education students
_____Students with free and reduced lunch

_____Aides in class

Appendix D:

Direct Social Interaction Observation Form

Direct Social Interaction Observation Form

Date: _____ Observer: _____ Participant code: _____

Key: P = Positive N = Negative A = Alone

	Target	Peer Tally		Target	Peer Tally		Target	Peer Tally		Target	Peer Tally
1	P N A		2	P N A		3	P N A		4	P N A	
5	P N A		6	P N A		7	P N A		8	P N A	
9	P N A		10	P N A		11	P N A		12	P N A	
13	P N A		14	P N A		15	P N A		16	P N A	
17	P N A		18	P N A		19	P N A		20	P N A	
21	P N A		22	P N A		23	P N A		24	P N A	
25	P N A		26	P N A		27	P N A		28	P N A	
29	P N A		30	P N A		31	P N A		32	P N A	
33	P N A		34	P N A		35	P N A		36	P N A	
37	P N A		38	P N A		39	P N A		40	P N A	
41	P N A		42	P N A		43	P N A		44	P N A	
45	P N A		46	P N A		47	P N A		48	P N A	
49	P N A		50	P N A		51	P N A		52	P N A	
53	P N A		54	P N A		55	P N A		56	P N A	
57	P N A		58	P N A		59	P N A		60	P N A	

Number of peer contacts: _____
Positive interactions: ___ tallies/ 60 * 100 = ___%
Negative interactions: ___ tallies/ 60 * 100 = ___%
Alone interactions: ___ tallies/ 60 * 100 = ___%

Appendix E:

Training Scripts

Lesson One- Respect /Diversity

Introduction: My name is Ms. Orton, and I'm here to teach this class know how to build respect for one another, and how to be good friends. We're going to practice different social skills and play games later, but right now we are going to talk about respect.

Q: First of all, what is respect? (Class Answer-CA)
-Respect means to show regard or consideration for others-treating everyone with dignity or kindness

-Something that has to do with respect is another principle called diversity
Q: What is diversity? (CA)
-Diversity means differences or being distinct from other people
Q: What are ways we can be different from each other? (CA)
-(Mention if not covered by class answer: height, weight, color of skin, language we speak, how much money our families have, religion, the way we walk or talk, the way our brains work…)
-We each have talents as well: some have a hard time with sports or math while others are good at them. Some are good at making friends, while others might not know how.

Q: Who here is completely the same as everyone else? (Feign surprise when no one raises hand)
-Everyone get paper and pencil. I want you to make two columns. On the first column, write or draw five ways in which you are similar to other kids, and five ways in which you are different.

-Now I want to turn to your neighbor and compare lists: how are you different and similar (Wait for three minutes while they talk)
Q: How were you different or the same as your neighbor? (CA)

-So now we know that we're not all the same, let's talk about respecting other's diversity.
-Everyone clasp your hands with cross fingers, like this (show them)
- By show of hands, who has the left thumb on top? Who has right on top?
-Take your hand and switch it so that the opposite hand is on top.
Q: What does that feel like? (CA- say things like awkward, weird…)
Q: Which is the correct way to do it? (CA)
- You're right, there is no correct way! It depends on your preference and what is comfortable

- Respecting the diversity in others means you are still free to do it the way that feels comfortable as long as you recognize that your way of doing things (what you wear, eat or listen to on the radio) it isn't necessarily right or better than another person, it's just different.

-I've talked about two things- respect and diversity.
Q: How do you think we can show respect to our classmates, especially those different from us?
-One of the ways we can show our classmates who might be different from us that we respect them is by trying to get to know them better; like playing with them at recess.

Okay- let's switch gears – **Q:** Who knows the definition of Disability
- It means inability due to impairment.

-Everyone close your eyes and find eraser in your desk without opening your eyes.
Q: How did that feel? (CA)
-People with visual impairments learn skills without the ability of sight. They practice and adapt.
-(Write the following on the board: Thec at cha sed the do gout of theh ouse)
Q: Will somebody please read that? (CA)
-People with learning disabilities work hard at some things that might come easy to you.

Q: If someone has a disability in one way, do they have a disability in every way? (CA)
Q: Are kids who don't have disabilities better than kids who do? (CA)
Remember, different does not mean better or worse- but it can take getting used to

Introduce two presents (nothing inside a beautiful box, toy inside a plastic bag)
Q: Can I have a volunteer to open a present? (kid picks box- probably pretty one)
Q: Why did you pick this one?
-Lots of kids would pick the prettier one because it looks perfect and how a present "should" be.
-This one doesn't seem like a good present from the outside, even though it might have something wonderful on the inside

Q: What does stereotype mean?
-Expect certain groups of people to be a certain way. We don't really get to know them.
-Here are some stereotypes. Raise your hand if you can prove me wrong.
-All boys are better at math than girls.
-All Americans eat hamburgers and steak.
-All presents that have boxes and bows have cool stuff inside.
-Kids who don't have lots of friends at recess are mean, dumb, or boring.

Q: What happens when we judge a book by its cover, or when we listen to stereotypes? (CA)
-We don't give them a chance; we don't get to know them, we might have a lot in common, even if they look or act different than us or come from different family backgrounds.

Q: So what have you learned about respecting those different from us? (CA)
Q: Why is respect important anyway? (CA)

Lesson 2- Inviting/Joining in

Q: Who can remember what we talked about last time? (CA)
-Yep, we talked about respect, which is treating other people with dignity, and diversity which is the differences between people.

-Today we are going to learn about skills that we can use to show each other that we respect each other. We are going to learn how to join in when you want to hang out with other kids, or how to invite someone when you want another kid to play with you.

-Before I do that let's play a game. Stand up if you like to ride roller coasters that go upsidown. Stand up if you are freaked out by those.
-Stand up if you like to try new foods. Stand up if you are picky eaters and want to eat stuff you already know you like?
-Stand up if you're good at baseball. Stand up if you're not that great at baseball.

-I saw some different kids standing up with the different questions. Everybody has some stuff that they like or is easy for them, when it's scary and hard for others. A lot of kids think it's easy to play with other kids at recess but a lot of kids think it's hard or scary to ask to join in with other kids the right way.

-So this will be a review for a lot of you but let's talk about it: **Q:** What does join in mean?
-It means one person approaches someone else and ask "permission" if he or she can do what they are doing…like you join to play kickball, do a board game or even just talk.

Q: Why do we want to join in –why is it important? (CA)
-Helps us build friendships, learn new things like sports, feel included, build community
Q: Who has ever asked to join in and someone said no? How does it feel? (CA)

I will explain the steps, and then role-play for you.
1. Look to see what others are doing. Keep your eyes peeled!
2. Approach the people you want to join
3. Use their name, and ask to join in "Hey Tiffany, can I come play basketball with you?
(Role-play with research assistant)

The hard part is that answer might be no sometimes. Maybe they are playing a game with a specific amount of players. Maybe they are having a private conversation.
Q: When are times it is appropriate to ask to join in?
Q: When are times it is inappropriate to join in?

-Another hard part other than knowing when to join is knowing how to join in
(Role-play being rude, asking over and over, standing too close, not making eye contact)
Q: How was that an inappropriate way to ask to join in? (CA)
Q: Remind me from the steps you learned, what is an appropriate way to ask to join in? (CA)
-So asking to join in is maybe an easy skill for some of you. Remember, not all kids have an easy time knowing how to make friends. So let's talk about kind of the alternate skill…
Q: What does invite mean? To approach someone doing something different from you and ask if they want come and do what you are doing.
Q: When are some times and places where you can invite someone? (CA)

I will explain the steps of inviting and then role-play for you.
1. LOOK. Keep your eyes open for people who are alone.
2. Approach the people you want to join
3. Use their name, and ask to join in "Hey do you want to play tag with us?"
These are almost the exact same steps as joining in!
(Role-play with research assistant)

-This skill is harder, because you might in the middle of the game, or the middle of playing tag on the playground equipment, or in the middle of a story that you are telling, and its hard to remember to look around for other kids.
Q: Even though it's hard sometimes- why is it important to invite others to play with us? (CA)

-Let's have some volunteers for role-plays. I want you to be by yourself, and you three to be part of a group playing games (offer choices). Remember to use the steps to invite him over there.
(Three class role-plays with feedback and praise)

-Now everybody we are going to break up into three groups- you are with me, you are with _____ (Research assistant) and you are with _____(teacher). In each group we are going to play a game of your choice (hang-man, duck-duck goose, or pretend sports), and you will get a chance to practice looking around and making sure that everyone is being included.

-Okay, to sum it up, in Mrs./Ms. _____ class we are working on building respect for others, even those different than us. One of the ways we are going to do that is asking to

join in and asking to invite others. Both involve looking around you, especially the ones who are inviting. Next time we are going to talk about another skill to help us show respect for each other

Lesson 3- Turn taking and using appropriate language

-Last time we talked about joining in and inviting others.
Q: Who can tell me briefly some things you learned about those skills last time?

One of the skills we are going to learn about today is taking turns.
Q: When are times when we take turns? (Basketball, board games)
I have two other types of turn taking I want to talk about. You guess from my bad example

(Role-play interrupting a kid incessantly and only talking about myself)
Q: In what way I did not take turns? (Letting him speak)
Q: (To the kid in the demonstration) How did that make you feel? (annoyed, sad)

I will explain the steps of appropriate conversation and then role-play for you.

1. Face the person and look them in the eyes
2. Ask them a question about themselves
3. Listen and wait while they talk (don't interrupt)

(Role-play with research assistant)

One class role-play with appropriate conversation

Here's a second way we take turns…
(Role-play with RA- Fighting about what we are going to play- turning down each others' ideas)
Q: What kind of turn taking is this? (Compromise- or taking turns with our time and ideas)
Q: When are times that we have to compromise (CA)
Q: Why is it important to compromise? How does it feel when your idea never gets picked?

Here are the steps to compromising…
1. Take turns telling each about what you want to do
2. Listen and stay calm
3. Both offer suggestions that involve both people's wishes
(Role-play with research assistant)

One class role-play with compromising

The last skill we are going to cover quickly is appropriate talking
Q: While you are playing, what can you say to make it a good experience for everybody? Compliments- (Good job! Nice Throw! Good Try), Being a Good Sport- (Maybe next time….)

Sometimes kids who have a hard time with making friends might have a hard understanding the rules, or they may say random things that don't make sense.
Q: What should we do? (CA)
We can patiently remind them of the rules, give compliments for their efforts and don't pay too much attention to the annoying stuff and compliment the good stuff.

Q: What is stuff you shouldn't ignore (Bullying, comments about hurting someone else). In that situation, walk away and tell an adult.

One class role-play with ignoring inappropriate comments and encouraging appropriate language

So I am going to review everything we've talked about so far: Respect, Diversity, Disabilities, Stereotypes, Joining in, Inviting others, Turn taking with conversation and compromise, Appropriate talking and how to ignore inappropriate talking. Hopefully if we use these skills we can help understand our classmates and make more friends.

Now we are going to go outside and break into three groups. As a group are going to decide together on a game to play (red rover, tag, wheelbarrow races, basketball) and you are going to practice all these skills. The three adults will be giving feedback and pointing out when each kid is using good skills or needs some practice. (Go outside)

(Back inside) Thanks for letting me come and teach you about respect and social skills in your class. Over the next few weeks either my assistant or I will come and watch you at recess to see how you are doing with your skills. We will remind you before recess on the days we will be watching you. For each day that we think you do a good job at including each other and playing well, we will give you a letter spelling out the word "POPCORN" and when you earn all the letters, we're going to throw a popcorn party. Good luck!

Modification For Tyson's class (Lesson 3): Addition of anxiety information, deletion of ignoring inappropriate comment information.

The last skill we are going to cover quickly is appropriate talking
Q: While you are playing, what can you say to make it a good experience for everybody?
Compliments- (Good job! Nice Throw! Good Try), Being a Good Sport- (Maybe next time….)

Sometimes kids who have a hard time with making friends might get nervous when they are around other kids, or they might not understand the rules.
Q- How can you tell if someone is anxious? (avoid eye contact, speak softly, irritated easily)
Q: Have you ever gotten nervous around new people before?
Let's practice some deep breathing to help calm us down (practice breathing)

1. Freeze- Take deep breaths
2. Say to ourselves in our head- "I can do it:
3. Unfreeze- respond to your peers

Q: When we can tell one of our friends is nervous?
We can compliment them, just like we would to ourselves in our head, ask them privately (not loudly in front of everyone) if they need help remembering the rules

Class role-play

Appendix F:

Instruction of Social Skills Integrity Checklist

Instruction of Social Skills Integrity Checklist

Trainer: _____ Reliability: _____

SKILL: _____

	Date: Initials:	Date: Initials:	Date: Initials:	Date: Initials:	Date: Initials:
1. There was a brief review of the previous skill.	Y N	Y N	Y N	Y N	Y N
2. There was an introduction of the new skill with a discussion about the importance of the use of the new skill.	Y N	Y N	Y N	Y N	Y N
3. There was an introduction of the new skill with a discussion about the relevant times one can use the new skill.	Y N	Y N	Y N	Y N	Y N
4. The facilitators modeled several examples of the correct use of the skill.	Y N	Y N	Y N	Y N	Y N
5. Class was involved in role-playing using the skill several times.	Y N	Y N	Y N	Y N	Y N
6. Class was given feedback and praise on their performance.	Y N	Y N	Y N	Y N	Y N