

8-2017

Teaching Social Skills to Students with Autism

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Teaching Social Skills to Students with Autism

by

Shylla Webb

A Starred Paper

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree

Master of Science in

Special Education

May, 2017

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Chapter 1: Introduction

Autism Spectrum Disorder is a developmental disorder characterized by atypical social functioning and communication skills, in addition to restricted, repetitive, and stereotyped patterns of behavior (American Psychiatric Association, 2013). Classic autism most often refers to *Autistic Disorder* as defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) (American Psychiatric Association, 2013). The DSM-V-TR defines a spectrum of autistic disorders under the broad category of *Neurodevelopmental Disorders*, which include autism spectrum disorders (ASD) as typically referred to in educational settings. Recently, the Centers for Disease Control and Prevention (2012) reported that as many as 1 in 68 children are diagnosed with ASD, which is an increase of approximately 218% during a 12-year period.

The major characteristics of autistic disorder include impairments in social interaction skills, deficits in verbal and nonverbal communication skills, and repetitive behaviors (American Psychiatric Association, 2013; Prelock, 2006; Webber & Scheuermann, 2008). For both social functioning and communication skills, the principal deficits arise from a lack of reciprocity with others (American Psychiatric Association, 2000). For individuals with autism, these problems may manifest as failures in forming relationships, stereotypical language and interests, invariant patterns in play, or ritualized behaviors (American Psychiatric Association, 2013).

The U.S. Department of Education (2017) mandated that students with disabilities be educated with their non-disabled peers as much as possible through the Individuals with Disabilities Education Act (IDEA). According to Watkins et al. (2015), “In 2000, 18.3% of students with ASD served under IDEA spent 80% or more of the school day in general education

classes. By 2010, the number had grown to 38.5% of students with ASD spending 80% or more of the school day in general education classes” (p. 1071).

Because children with autism experience such significant impairments in the area of social interaction, it is difficult for them to develop and maintain relationships with others. Fewer than 5% of students with autism make contact with their peers as a means of making a social connection or a friendship-related activity within the classroom (Owen-DeSchryver, Carr, Cale, & Blakley-Smith, 2008). Their lack of social skills does not allow them to modify and adjust their behaviors toward others in social situations. Deficits in these skills include maintaining positive interactions, initiating social discourse, and interpreting the social thinking of others. The inability of children with autism to consider multiple perspectives, interpret social communications, and recognize the emotional state of others “has been attributed to their lack of theory of mind” (Feng, Lo, Tsai, & Cartledge, 2008, p. 228). When a person is able to explain or predict another person’s behavior, it increases the likelihood of appropriate social reciprocity (Feng et al., 2008).

The efficacy of teaching social skills to children with autism has been debated (Autism Society of America, 2008). Barrett (2008) argued that the most effective forms of social skill training are school-based (Licciardello, Harchik, & Luiselli, 2008). Others contend that social skills training is more beneficial if delivered by same-age peers. Therefore, the purpose of this paper was to review the literature that examines outcomes of social skills interventions using peer mediation for students with autism.

Research Questions

To determine whether peer-mediated intervention (PMI) is effective in improving the social interaction skills of elementary-age children with autism, I examined the literature to determine what outcomes are reported regarding the efficacy of peer-directed skill interventions for students with autism. Two questions guide this review of literature:

1. What peer-mediated social skills interventions are reported in the literature for students with autism spectrum disorder?
2. What evidence is reported to support the efficacy of peer-mediated social skill interventions?

Focus of the Review

This review is purposefully delimited to studies conducted since 1998 that included students in kindergarten through sixth grades in clinical settings or public schools. This paper focused upon students who fall within the diagnostic classification of *Autistic Disorder* and excludes participants with Asperger's Disorder. Findings of studies conducted in the United States and other countries are included. In order to be included in Chapter 2, articles must have provided pre- and post-test performance data.

Both computational and manual searches were conducted to identify materials appropriate for this review. The following descriptors and combinations of descriptors were used in the computational search: *autism, social skills, school-based instruction, social initiation, social response, peer-mediated interventions, peer initiation, peer intervention, and social thinking*.

Overview of Social Skills Training

Social competence is necessary in order to lead a healthy and typical life (DiSalvo & Oswald, 2002). Lack of social competence results in: (a) an increase of socially unacceptable behavior problems that contribute to unhealthy or reduced social interactions; (b) a decrease in positive developmental support and learning opportunities experienced through healthy peer relationships; and (c) an increase in likelihood of flexible thinking and maladaptive behavior later in life (DiSalvo & Oswald, 2002). In any given social situation, socially competent individuals are able to modify their behavior toward others.

Social skills are the “specific behaviors that an individual uses to perform competently or successfully on particular social tasks” (Gresham, Sugai, & Horner, 2001, p. 332). Gresham et al. (2001) cited four primary objectives of social skills training: (a) promoting skill acquisition; (b) enhancing skill performance; (c) removing competing problem behaviors; and (d) facilitating generalization and maintenance.

Social skills are taught in pull-out sessions in a resource room and in small groups of four to six children. Rogers (2000) observed that these types of social skills lessons are often too brief and lack integration with other programs. Thus, he/she called for a change from short, isolated lessons to long-term, intensive, and more naturalistic programs that have a greater probability of behavior generalization. With this apparent need, many different research-based strategies have developed over the years effective to aid in the generalization of skills.

Generalization of skills is necessary in order for an individual to use learned skills in one particular environment and transfer them over to a different environment (Dunn Buron & Wolfberg, 2008). A collaborative approach using teacher and peer mediation helps to ensure that

interventions will be practiced and used within a variety of contexts (Dunn Buron & Wolfberg, 2008).

Two models of social skills training have been developed for students with autism. Adult-mediated strategies rely upon teachers, therapists, and other professionals to deliver social skills training. This model represents the most common approach historically (Owen-DeSchryver et al., 2008). More recently, peer-based training has been recommended as an effective approach for children with autism (Chang & Locke, 2016; Dunn Buron and Wolfberg, 2008; Owen-DeSchryver et al., 2008; Prelock, 2006; Simpson, 2005). In this type of intervention, interactions with nondisabled peers improve behaviors of the student with autism (Owen-DeSchryver et al., 2008; Sperry, Neitzel, & Englhardt-Wells, 2010; Watkins et al., 2015). The nondisabled peer is trained first and then prompted and rewarded for their interactions with children with ASD (Chang & Locke, 2016). This approach is used to promote generalization of social competence for children with ASD in their natural environment.

Peer-Mediated Social Skills Instruction

Peer-mediated interventions are used to teach social behaviors to students with autism. With most peer-directed models, peers who do not have disabilities are taught to interact with their peers with autism using specific strategies to teach and practice new social skills. Typically developing peers know how to “initiate, prompt, and reinforce social behaviors” (Webber & Scheuermann, 2008, p. 209). Children with ASD may be paired with an individual peer or be included in a peer group.

Several types of peer models have been developed during recent years for students with disabilities; many of these have been adapted for use with children with autism. Table 1 provides a summary of these peer intervention approaches and a brief description of each.

Table 1

Peer-Mediated Interventions

TYPE OF INTERVENTION	DESCRIPTION
Cooperative Learning Groups/Peer Networks	Pairing students with autism with nondisabled peers within the natural learning environment (Kamps et al., 2015; Morrison, Kamps, Garcia, & Parker, 2001)
Peer Training	Teaching nondisabled peers to initiate interaction with the student with autism (DiSalvo & Oswald, 2002)
Naturalistic Environment/Setting	Social skill instruction within the child's typical environment with naturally occurring stimuli (Webber & Scheuermann, 2008)
Peer Tutors	Pairing a nondisabled peer with a student with autism and using a buddy system to promote incidental learning of social behaviors within the natural environment (Rogers, 2000)

Peer-mediated approaches use neurotypical peers or peer groups to initiate interactions with a child with autism by sharing, prompting, partnering with, and providing assistance in the natural environment (Kamps et al., 2015; Prelock, 2006). In this situation, the socially competent peer is taught to prompt or engage in social interaction and provide reinforcement for the child with autism (Chang & Locke, 2016; Prelock, 2006; Sperry et al., 2010). In some cases, non-disabled peers are taught to use strategies such as *direct instruction*, *pivotal response training*, and *social stories*.

Direct instruction. Direct instruction is a common approach used with students who have autism. The lessons usually include skill identification, modeling, practice, social reinforcement, and programming for generalization (Sperry et al., 2010; Webber & Scheuermann, 2008). Using

a direct-instruction approach, target skills are taught in a “highly structured and predictable environment of the special education classroom” (Webber & Scheuermann, 2008, p. 207).

Pivotal response training (PRT). PRT is a training technique that has been used to increase motivation in children with autism in the area of play (Stahmer, 1999). Using this method, the trainer focuses on a specific pivotal behavior that is applicable to a wide range of social situations. Typically, the technique is taught in a one-on-one teaching environment or in their natural classroom environment and the children are rewarded using natural reinforcers throughout the activity (Stahmer, 1999; Webber & Scheuermann, 2008).

Social stories. Unlike other approaches that focus on increasing desirable behaviors and decreasing aberrant behaviors, social stories help students with autism gain insight regarding how their behavior affects others. Social stories help children with autism learn to manage their own behavior during a given social situation by describing “where the activity will take place, when it will occur, what will happen, who is participating, and why the child should behave in a given manner” (Scattone, Wilczynski, Edwards, & Rabian, 2002, p. 535).

Social stories will help define a specific behavioral response to a common social event. A social story can help establish a desired routine or a rule that can be applied to a particular social situation (Scattone et al., 2002). These can be used for a non-intrusive delivery of instruction or to support social skill instruction, such as direct instruction.

Summary

Peer mediated interventions involve the use of typical developing peers and training them to initiate, prompt, and reinforce the desired social behaviors. Using direct instruction, pivotal response training, and social stories, a neurotypical peer can assist in the generalization of those

taught skills in the natural environment for children with autism (Prelock, 2006; Webber & Schuermann, 2008).

Rationale

Social competence is essential in leading an adaptable and healthy life. Not only is this skill necessary to develop positive peer relationships, it also requires peer related interactions which can have an impact on academic skill acquisition (Scattone et al., 2002). Specifically, children with autism typically demonstrate severe impairments during social interactions within the academic setting.

Common past approaches involve a direct instruction model of teaching the desired social skill to a child with autism. Typically, a special education teacher pulls a small group of students from their classroom to set guidelines and practice a new social skill in a smaller environment. However, the effectiveness of direct instruction only model continues to be highly debatable.

The results from this paper may contribute to understanding the psychological variables associated with autism. Specifically, this paper may provide insights into developing social skills in the population of children with autism and into the relation between the condition and social characteristics.

My experience as a special education teacher in the elementary setting indicates that social deficits are among one of the greatest challenges for students with autism. It is especially difficult for a child with autism to generalize a social skill after receiving direct instruction from a special education teacher. Based on my experience, generalization of a skill will typically only occur when the child is given a consistent opportunity to practice the skills in a natural

setting. This indicates that in order for generalization to occur, there is a need for multiple approaches to teaching a social skill that goes beyond the special education classroom. It must also happen using a naturalistic setting through the use of same-aged peers. As a result, I hope to learn more about the efficacy of peer-mediated social skill training and the impact it has on students with autism.

Glossary

Generalization of skills occur when social skills taught in structured situations carry over into other settings with other persons (Dunn Buron & Wolfberg, 2008).

High-functioning autism. Autistic disorder generally accompanied by an IQ above 70 (Dunn Buron & Wolfburg, 2008).

Joint attention. Shared, mutual attention to an external event (Webber & Scheuermann, 2008).

Natural environment. Environment child is typically in with naturally occurring stimuli (Webber & Scheuermann, 2008).

Neurodevelopmental disorders are a group of conditions with onset in the developmental period. The disorders typically manifest early in development, often before the child enters grade school, and are characterized by developmental deficits that produce impairments of personal, social, academic, or occupational functioning (APA, 2013).

Peer networks. A small group of typically developing peers specifically selected to provide support for the generalization of social skills for students with social deficits in their naturalistic environment (Kamps et al., 2015).

Pivotal response training. Generalized intervention approach that combines a number of effective strategies (Simpson & Myles, 1998).

Reciprocity. Give-and-take (Dunn Buron & Wolfberg, 2008).

Social competence. Ability to understand social nuances and respond to them accordingly (Webber & Schuermann, 2008).

Social initiation is the instigation of interaction with another individual (Owen-DeScryver et al., 2008).

Social Reciprocity is the back and forth nature of social interactions (Sperry et al., 2010).

Social thinking is how someone interprets and processes other the behaviors of other people (Dunn Buron & Wolfberg, 2008).

Theory of mind is the ability to understand and recognize someone's thoughts or actions as a way to make sense of behavior and predict what they will do next (Dunn Buron & Wolfberg, 2008).

Visual prompts (also known as *Visual Cue Card*) are gestures, pictures, symbols, or sequences to provide a visual cue to prompt a desired social skill (Webber & Scheuermann, 2008).

Chapter 2: Review of Literature

Social skills deficits are a core area of need for children with autism. Using peer-mediated interventions, a school setting can close the discrepancy of lagging skill between a child with autism and their typical same-age peers. Peer networks can help to initiate, reinforce, and prompt students with autism for a higher generalization effect.

Chapter 2 summarizes extant literature on peer-mediated social skills training. Each study has been summarized or organized categorically based on the intervention described in its content.

Pivotal Response Training

Harper, Symon, and Frea (2008) conducted a study that employed a multiple baseline across two participants designed to evaluate the effects of pivotal response training (PRT). Peer-mediated PRT strategies were used to develop two social skills in two students with autism who attended a kindergarten through sixth grade elementary school located in an urban school district in California. The participants of this study attended a full-inclusion third-grade classroom. Both children received full instruction from their general education teacher in conjunction with minimal pullout from a special education teacher. The second participant listed in this study, Gaven, also received additional support from a teacher's aide for instructional and behavioral purposes in the mainstream classroom. For Brian, turn-taking and gaining peer attention were evaluated, and for Gaven, turn-taking and play initiations were evaluated. Baseline data were collected during recess for Brian (13 days) and Gaven (18 days) until stability was reached. Following baseline, seven consecutive daily training sessions were conducted with peers. Each

day the peers were introduced to PRT components. A visual training card and cue card was used for each strategy.

The intervention phase consisted of triads of two third-grade peers and one participant with autism. For 7 consecutive school days before recess the trainers asked peers to identify and explain the strategies they used and provided them with cue cards. Finally, four or five generalizations probes were conducted during a return to baseline phase.

Results demonstrated that both Brian and Gaven improved peer interactions during recess. During baseline, both boys had low levels of the target behaviors. During an intervention, they improved and maintained skills during the return to baseline. Specifically, Brian's turn taking improved from 0 during baseline to a mean of 12.5 per 10 minutes during intervention and maintained at 10.2 during generalization. Gaven also did not take turns with peers during baseline but improved to an average of 1.5 per 10 minutes during intervention. These gains increased further to a mean of 2.5 during generalization.

During baseline, Brian did not attempt to gain peer attention. Following the intervention, he increased to a mean of 4.8 per 10 minutes and maintained during generalization for 4.6 occurrences per 10 minutes. Data collected on Gaven's play initiations indicated he had 0 initiations during baseline, which increased to a mean of 3.25 following intervention. The authors reported he continued to improve during generalization, although no data were provided.

The authors concluded PRT was effective at improving social contact between typical peers and peers with autism. They also noted that the components of "proximity, mutually reinforcing events and reciprocity" (p. 823) could contribute to actual friendships. Finally, the

authors cited the importance of PRT in fostering greater independence in a natural and inclusive school environment.

Licciardo et al. (2008) evaluated a social skills intervention for students with autism at a public elementary school. Paraprofessional staff were trained to pre-teach skills, prompt, and offer rewards for desired behavior to the child with autism while in their natural, play setting. The study was conducted with four kindergarten through fourth-grade children diagnosed with ASD: Carrie, Andrew, Wes, and Mike. Although all four students received instruction in their general education classrooms, the other three were provided one-to-one assistance.

The social skills intervention consisted of teaching pivotal play skills using pre-teaching, prompting, and praise/reward. Classroom assistants were used to teach peers how to be play partners daily during recess time on the school's playground. During the daily play period, the assistants provided verbal prompts in order to encourage participant interaction. Assistants praised the student each time the participant with ASD initiated or responded to a prompt.

A multiple baseline design across participants was used to evaluate student performance. Trained observers used ten-second interval recording to evaluate two dependent measures: social initiation and social response behaviors. Social initiation was recorded when a participant commented about a joint activity, looked at, verbalized, or appropriately touched a peer for attention. Social response was recorded after a verbal or physical response was made to a peer's initiation. All four students increased the percentage of both social initiations and social responses. Baseline and intervention data are provided in Table 2.

Table 2**Baseline and Intervention Data**

	CARRIE		ANDREW		WES		MIKE	
	Baseline	Intervention	Baseline	Intervention	Baseline	Intervention	Baseline	Intervention
Social Initiation	11.4%	19.6%	4.4%	43.9%	4.8%	20.7%	3.7%	29.6%
Social Response	11.0%	39.8%	76.2%	26.7%	31.8%	45.1%	16.5%	37.0%

The results suggest that the intervention was effective with increasing social initiations and social responses of all four students as each intervention measure increased from the initial baseline. Because the intervention required only a few minutes each day, the authors concluded that this was a practical and efficient procedure for all classroom staff to implement.

Summary

Two research studies examined the effectiveness of PRT in the development of social skills. The findings of these studies are presented in Table 3.

Table 3**Summary of PRT Studies**

AUTHORS	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Harper, Symon, & Frea (2008)	Quantitative	-Two fully included students in third grade who were diagnosed with autism at an elementary school in an urban school district outside of Los Angeles, CA	-Peers were taught PRT for seven consecutive days -Peers were prompted by an adult before recess to use strategies taught	-Both participants improved their social peer interactions during recess
Licciardello, Harchik, & Luiselli (2008)	Quantitative	-Three boys and one girl diagnosed with autistic disorder at the same public elementary school located in a suburban community	-Typical peers were pre-taught play skills, prompting, and to reinforce student with ASD -During the play period, the classroom assistants used visual prompts to encourage interaction	-Intervention combined with pre-teaching, prompting, praise, and rewards increased social interactions and social responses of all four children with autism

Naturalistic Setting

Three of the peer-mediated social skills interventions were conducted in naturalistic settings. These studies are reviewed in this section. Whitaker (2004) investigated shared play between children with autism and their mainstream peers. Ten children (nine boys, one girl) who had a diagnosis of severe autism and who were between the ages of 6 and 7 years participated in this study. All students were educated in a separate unit attached to the mainstream setting. The study was conducted in the school's autism unit during 20 weekly interaction sessions designed to promote shared play and communication. All the children attending this school had received training on autism before the study began and the peer tutor was in two classes among the children with autism.

Whitaker (2004) used a multiple baseline design across participants to evaluate student performance or outcomes. Baseline was measured by having the peer tutor get the child with autism to simply play with them using strategies and techniques they knew independently without training. The peer tutors were invited to the unit to determine if they could get their partner with autism to play with them for a period of 20-30 minutes each session. During the session, the peer tutors were encouraged to participate with limited structure and join whatever activity the peer with autism was doing.

In this case, the adult's role was to simply provide general encouragement and reassurance to the groups. During the course of the study, they met with their partners once a week for a 20-30-minute session. The intervention was administered for 20 weeks. These sessions were supervised by a paraprofessional and limited to two pairs of children per adult.

After observational baseline data were collected during the first four sessions, the peer tutor training began. An adult taught the peer tutors how to support interactions during a single session of training using explanation, role play, and modeling. Peers were asked to follow five simple principles: close proximity, follow his/her lead, use simple language, talk slow, and make it fun. Regular play sessions then occurred with each participating in 20-24 sessions. During play sessions, the supervising adult monitored and took an active role in prompting the peer tutors when appropriate, and provided them with encouragement.

Data were analyzed through video recording of play sessions with interviews of peer tutors and their parents. Whitaker (2004) reported that the students with autism displayed "clear signs of anticipation and pleasure" (p. 218) when the peer tutors came to the sessions. The students with autism only rarely attempted to remove themselves from the peer activity. By the

end of the study, shared play increased from an average of 42% to 66%, although this was not statistically significant.

The data also revealed an increase in the number of spontaneous requests from students to their peer tutors. Even though this difference was statistically significant, Whittaker (2004) cautioned it still only occurred in 10% of the intervals.

Nine of the 10 tutors rated the sessions as very enjoyable. All 10 of them would encourage any mainstream peer to participate. The parents without reservation recommended the experience to other parents. Both the peer tutors and parents noted the importance of staff support during the peer tutoring process.

Morrison, Kamps, Garcia, and Parker (2001) conducted a study on the effectiveness of using peer mediation and monitoring strategies to promote social interaction from children with autism. Participants in this study attended two suburban and two urban public school districts. They were selected based on criteria of parent and teacher interest, access to the general education peers for a minimum of three times weekly, along with communication and comprehension skills needed to respond to peer mediation.

In this study, the peers were used to teach three social skills during game play: requesting, commenting, and sharing. Self-monitoring and peer-monitoring conditions were compared. The effects of these strategies were monitored for the child with autism on the number of social interactions, the use of skills taught, and the number of inappropriate behaviors.

Four students with autism and a group of nondisabled peers were taught to use and monitor social skills while playing games. Karen, Stewart, Rick, and Jason were from two different suburban schools; two social groups were formed in each school. Each group consisted

of one student with autism and two to three students without disabilities. The ages of students with autism ranged from 10-13 years old.

A multiple baseline design across skills (requesting, commenting, and sharing) was used by Morrison et al. (2001) in the study; each new skill was introduced when the intervention produced a change in skill usage. A counterbalanced reversal design (peer-monitoring vs. self-monitoring) was used to document effects for student interactions with peers. Alternating conditions for self-monitoring and peer monitoring of skill usage were implemented as means to compare the two strategies.

The authors reported adult teaching and peer mediation of skills, along with a reinforcement schedule of desired skill, increased initiations, and social interaction time with peers during intervention. Specifically, Karen increased initiations to peers from a mean of 16% to 44%. Rick and Jason both improved from a baseline of 2% to 27% and 36%, respectively, during self-monitoring and 36% and 33% during peer monitoring. Stewart increased initiations from a mean of 13% to 52% during self-monitoring and 45% during peer-monitoring. All four increased responses during intervention; means ranged from 89% to 100%. Peer responses also increased from baseline averages of 57%-72% to 95%-99% during interventions. The percentage of time students engaged in social interactions increased for all four students and inappropriate behavior decreased during the intervention. Karen and Stewart increased initiations to peers during lunch and recess, although neither Rick nor Jason showed skill generalization.

The authors concluded that teacher instruction was a key factor in helping non-disabled peers model, prompt, and reinforce social interaction. They also noted the skill of commenting

was more easily maintained with Karen and Stewart, who were more verbal. They speculated that commenting is an important skill for both disabled and nondisabled peers.

Owen-DeSchryver et al. (2008) evaluated the effectiveness of using a peer-training intervention with three students with autism attending a public elementary school setting. Two of the participants had a diagnosis of autism, and one student with a diagnosis of Asperger syndrome. Although the three students varied with academic and intellectual abilities, they all showed significant impairment with their social interactions based on interviews with consultant, parent, and teacher reports. The first student, John, was a 7-year-old boy who attended his second-grade general education classroom accompanied by a classroom aide. The child with Asperger's, David, was a 10-year-old boy in a fourth-grade classroom without an aide. The third participant was George, a 7-year-old boy with autism who received his academic instruction in an inclusive classroom setting.

The ASD students in this particular study did not receive additional social skills training nor were they made aware of this research project. The school staff members were not encouraged to directly teach social skills, and they did not provide any additional prompting to the students who participated in this study.

The participating general education peers were selected based on the researcher's observations and recommendations made by classroom teachers and assistants. Students were selected based on the following set criteria: (a) student's interest level of participation; (b) consistent attendance record; (c) the student's ability to recoup from academic instruction missed while in group, and; (d) their compliance with tasks. A total of 11 peers were selected for the three students: four for John, three for David, and two pairs for George. The authors reported

the necessity for using two pairs of peers with George due to difficulties obtaining parent permission and lack of evidence supporting improvement with the first set of peers selected.

The duration of this study was 6 months. Baseline data were collected for students with ASD for 3-6 weeks at the beginning of the study, bi-weekly during intervention, and upon completion of the peer training. Researchers collected data during lunch and recess time because it allowed the most opportunities for peer interactions within a natural setting. During an observation, the researchers kept as much distance as possible that would allow them to hear verbal exchanges. All observations were conducted in the student's natural play settings.

Two of the authors trained the general education peers separately in three sessions ranging from 30-45 minutes each phase. In the first phase, students participated in activities that helped them understand the importance of developing friendships with classmates who have disabilities. The objective of the second phase was to increase knowledge and awareness of having a classmate with ASD. The final phase of peer training provided direct instructional strategies on how to interact with a child who has autism, such as teaching them how to play, facilitating conversations, and providing examples of activities to do during play time.

Throughout the course of the study, graduate students conducted observations on random days during the lunch and recess periods. Due to the fluctuation of start and ending times to these periods, the time was also recorded during each observation. The observer recorded data using a frequency data checklist.

Findings showed that the peer initiation increased for all three participants following training. Peer initiations toward John increased from an average 0.06 per minute during baseline; this increased to 0.23 initiations. Peers made no initiations toward David during

baseline and had an average of 0.25 per minute following intervention. During baseline, peers averaged 0.01 initiations toward George, which increased to 0.32 per minute.

Responses also increased for the three students with ASD following intervention. John's average rate of responses increased from 0.13 per minute during baseline to 0.45. David increased from 0.04 to 0.60 per minute. George increased from 0.13 responses to 0.42 responses.

The authors also evaluated initiations of students with ASD toward their peers. John's initiation rate remained approximately the same during baseline and intervention (0.28 to 0.33). David increased from 0.01 initiations per minute to 0.43 per minute after intervention. George initiated only 0.07 times per minute during baseline, which increased to an average of 0.29.

Peer responses to initiations by students with ASD constituted the final area in which data were collected. John's peers averaged 0.08 responses during baseline, which increased to 0.23 after intervention. David's peers increased from 0.01 to 0.53. George's peers average 0.04 per minute to 0.20.

According to the authors, the findings of this study confirm that peer training is an effective strategy for increasing interactions between typical peers and students with autism. The authors emphasized that these social behaviors took place in natural public school settings such as lunch and recess, indicating that it addressed ecological validity issues relevant to typical school settings.

Mason, Kamps, Turcotte, Cox, Feldmiller, and Miller (2014) investigated the impact of using peer networks to improve communication among elementary students with autism

spectrum disorder and their neuro-typical peers. The authors questioned whether there can be a functional relationship between social skills instruction for students with autism and their level of communication interactions with their typical peers at recess.

Three male participants ranging from ages 6-8 years old who attend first or second grade inclusive settings participated in this study. All participants met criteria for autism spectrum disorder educationally or medically. The participants have received peer-mediated social skills instruction previously. The communication skills among all three study participants ranges from low to above average. Neuro-typical participants who participated in the peer-mediated interventions group were asked to participate in this study. Four to six students were chosen from each child's classroom to participate. It should be noted although the typical developing peer has participated in previous peer-mediated intervention social skills groups, the interactions within the social skills groups did not generalize to natural settings specifically recess.

The first participant, Sam, was an 8-year-old, second grade male. Although his receptive language and academic skills are rated average to above average, Sam struggles to communicate with his peers at recess time. He would attempt to become part of a group, but did not participate in typical social reciprocity with his peers. Ed, the second participant, is an 8-year-old, second grade male. Ed's communication skills are also considered to be average. While at recess, Ed does not initiate social interactions with his peers and appears antisocial. The third participant, Brian, was a 6-year-old male with autism. His communication skills were considered to be lower than the other two participants, and he is known to perseverate on topics. Ed is often accompanied by a paraprofessional or his teacher during recess time. During the baseline observation, Ed typically stayed near the adult supporting him and had minimal

social engagement with his peers. During the observation and when he was prompted to engage with his peers, he would often respond with physical aggression such as hitting, kicking, or punching.

In this study, school staff were trained to implement the intervention. With the exception of one participant due to extenuating circumstances, the implementer was a member of the research team. All sessions took place out at recess time with the participant's peers. Materials included visual cue cards for the specific skills being taught, a reinforcement card with 20 blank squares to reward social engagement, and a box containing prizes. Approximately three intervention sessions were conducted each week totaling to 13 altogether; each one with an instructional session of social skills prior to recess. Following all social skills sessions, the researcher used a fidelity checklist which rated if the implementer followed the script, used appropriate levels of prompting, and provided reinforcement correctly.

The results of this particular investigation are favorable among all three participants when measuring total communicative acts within a 10-minute time sample during recess time. Sam's baseline data suggests he had a mean of seven communicative acts and with the intervention, his mean increased to 31. Ed's results improved from a baseline mean of 4.8 to 29.9. Lastly, Brian who showed resistance to communicating with his peers during the baseline stage increased his interactions from 3.8 to 23.6. In addition to this observational data, all three implementers noted positive changes in social engagement between the participants and their typically developing peers. They also noted both parties reported they looked forward to participating with each other at recess time. In a follow-up survey with the implementers, they noted the participant's

interactions continued for Ed and Sam; however, it did not for Brian, who demonstrated physical aggression when prompted to interact with a peer during baseline collection.

This study confirms the benefits of using peers without disabilities to promote social reciprocity for students with autism in their natural settings. “The presence of peers without disabilities on the playground should be seen as a potential instructional asset” (Mason et al., 2014, p. 342). The results in this study were more favorable to the students who were considered to be higher functioning and have average communication skills.

Summary of Naturalistic Interventions

In this section, I reviewed four studies that used naturalistic approaches in teaching social skills to students with autism. I provided a summary of these findings in Table 4.

Table 4

Naturalistic Settings

AUTHORS	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Whitaker (2004)	Quantitative	-Ten students with autism (9 boys, 1 girl) between ages of 6 and 7	-Students were taught social skills separate from classroom -All students received training on autism prior to study -Sessions were 20-30 minutes in duration 1 time weekly for 20 weeks -Peer tutors were encouraged to participate with little structure	-Participants increased in the number of spontaneous requests from students with autism -Participants increased in shared play

Table 4 (continued)

AUTHORS	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Morrison, Kamps, Garcia, & Parker (2001)	Quantitative	-Four students diagnosed with autism -The participants were grouped into two or three nondisabled students with one student with autism -Ages 10 to 13 years old -The students were from suburban and urban public schools	-Peers used to teach requesting, commenting, and sharing -Skill sessions were away from regular education classroom -Sessions were 20-30 minutes each, three times a week -Generalization settings were lunch and recess	-All the participants increased initiations to peers during the intervention -All the participants increased responses during the intervention -All participants made improvements on their social engagements
Owen-DeSchryve, Carr, Cale, & Blakeley Smith (2008)	Quantitative	-Two students diagnosed with autism and typical peers were selected to participate in the peer training intervention at a public school in suburban Long Island, NY	-Typical peers were trained 30-45 minutes in a separate setting from regular education classroom -Three phases of training: understand importance of developing friendships with classmates with ASD, knowledge of having a classmate with ASD, and direct instruction strategies	-Peer initiations increased for both the participants -The initiations toward the students with ASD increased for untrained as well as for trained peers following the intervention
Mason, Kamps, Turcotte, Cox, Feldmiller, & Miller (2014)	Quantitative	-Three children with ASD in the public school setting -Four-six neuro-typical peers	-One ASD student and two typical peers were pre-taught skills by an interventionist -They were offered enforcers to produce desired skill during play -Interventionist provided 10 minutes of feedback and praise following play session	-All three participants improved in total communicative acts -All implementers noted positive changes between peers -Interactions continued for Sam and Ed, but did not for Brian

Peer Learning Groups/Peer Networks

Laushey and Heflin (2000) conducted a multiple baseline study using peer-mediated approaches to teach and foster develop of social skills when students with autism were placed with their typical peers. The purpose of this study was to determine whether teaching all

classmates in the general education classroom to use peer-mediated strategies would increase the generalization of skills for the child with autism.

The researchers collected data during two different treatment phases. Both participants attended kindergarten at two separate schools, which were geographically located in middle to upper class suburban areas.

Two 5-year-old male students with autism who participated in this study attended general education classrooms with approximately 20-25 typical peers. The classmates ranged from 5-6 years of age. Each student with autism was initially assigned a paraprofessional, this level of support was phased out throughout this study.

The first treatment phase consisted of using a peer tutoring model, and the program was implemented during free play times throughout the day. The authors described this treatment phase as a “buddy system treatment” (p. 186). All peer networks rotated through the buddy system. Each day the teacher arranged for a new buddy to be placed with the child with autism. All students in both classes were taught to “stay with, play with, and talk to a buddy” (p. 186). During the times of play for purposes of this study, the teacher announced it was buddy time.

The second treatment phase consisted of measuring four dependent variables: asking for an object and responding according to the answer given, appropriately getting the attention of another, waiting for his turn, and looking at or in the direction of another person who is speaking to him.

Observational data on these four variables were taken for 10 minutes every 10 days during free play. Baseline data were collected for six sessions over a 4-week period of

time. During the first 11-week treatment phase data were collected for six sessions for John and only three sessions for Pat because of absences. During the 6-week return-to-baseline phase data were collected for four sessions for both John and Pat. Near the end of the school year, data were collected for four sessions after a follow-up treatment of 7 weeks.

The results indicated the buddy program was more effective in eliciting social skills than simple proximity. Specifically, John's performance improved from a baseline mean of 29% to 75%; Pat's improved from 28% to 66%. During return to baseline, the students' progress regressed, but when treatment was reinstated, gains similar to the first treatment phase were reported. The authors concluded the training in the "stay, play, and talk method" increased skills usage not only with one peer, but with multiple peers (p. 190).

Kamps et al. (2002) reported findings from two studies designed to increase participation of students with ASD in natural settings.

Study 1. In the first study, the authors examined the effects and generalization of social skills, cooperative learning, and control groups in which peer training was embedded in the intervention. A single subject reversal design was used. Three dependent variables were examined: frequency, mean length, and duration of interactions. These data were then used to assess generalization effects.

Five students with autism and 51 general education peers participated in this study. All students attended an elementary school located in a low-to-middle income urban neighborhood; 70% of students were from minority groups. Seven males and eight females in fourth-grade participated in cooperative learning groups with Ann and Matt, two students diagnosed with ASD. Eleven males and five females in third grade participated in social skills groups with

Roberto and Carla. The fifth student with autism, Tony, participated in mainstream art. Ten males and nine females in fourth grade served as the control group.

In the cooperative learning group, peers were trained to tutor their partners with ASD. The groups met 3-4 times per week. For 2 weeks of baseline, 4 weeks of groups, 2 weeks of baseline, and 4 weeks of groups, peers in the social skills groups were taught to initiate and respond to peers during play activities. Groups were conducted 3-4 times per week following the same timeline as the cooperative learning groups.

A total of 153 generalization probes were collected during the fall and 153 were collected in the spring to measure maintenance and generalization. Results revealed that both groups increased the amount of time the students engaged in social interaction. During cooperative learning groups interactions increased from less than 30 to more than 191 seconds during a 5-minute time sample, which was similar to nondisabled peers. During the social skills group, students with ASD increased the number of interactions with peers, from a range of seven to 56 interactions to a range 152 and two hundred 62 interaction. Peers in the cooperative group more than tripled their baseline interactions whereas peers in the social skills groups doubled their interactions. Interestingly, control group peers also increased interaction skills in this study. Among the three groups, the cooperative learning group showed greater skill generalization.

Kamps et al. (2000) attributed increases in the control group to familiarity with the students over a period of 4 years. They also provided several hypotheses as to why the cooperative group had greater generalization. The cooperative groups in comparison to the control group and social skills group had a multi-component intervention including social skills

training, whereas the other two groups did not. In addition, the tutoring component of this group also consisted of repeated, consistent interactions whereas the social skills group consisted of a “free time” approach. Two limitations that may have also contributed were the ages of the cooperative learning group were 1 year older (third-graders vs. fourth-graders) and six of the pupils in the cooperative groups had previously participated in a social skills intervention group.

Study 2. The authors hypothesized that students with autism who participated in both types of peer groups would have better outcomes than students who had only single interventions. Therefore, in this second study the authors examined the effects of multiple peer groups for each participant over a 3-year period.

A total of 34 students with autism participated in this study (24 males and 10 females). Students ranged 7-14 years old and attended public school programs in six school districts. Videotape probes were used during the first and final year to determine progress. Approximately 130 peers participated the first year and 120 during the final year. The groups included: (a) trained peers; (b) familiar peers who were in the same general education class but not trained; and (c) stranger peers who were not in the same classroom nor trained.

Generalization data were collected over 2 years while peer mediation programs were implemented. Peer mediation programs included social/play groups, lunch buddy groups, recess buddy programs, and peer tutoring activities. Four dependent measures were evaluated: duration of social interaction, reciprocal interaction, toy play, and on-topic social interactions. A total of 61 probes were conducted with trained peers: 11 probes with familiar peers and 50 with stranger peers.

In the second study, the findings concluded three social behaviors increased with trained peers: duration of interaction, reciprocal interaction, and on-topic language, although smaller changes were reported for on-topic language. Similar findings were reported for the familiar peers for duration of interactions and reciprocal interactions, but no changes were noted for language. All behaviors occurred with less frequency in the stranger peer group and even decreased over time. Appropriate toy play remained stable regardless of the peer group, with means ranging from 58% to 78%. These results were statistically significant by peer group for social interaction time and reciprocal interaction.

The authors concluded that “significantly more social behaviors” occurred with trained peers than control group peers. Both students with autism and their peers were able to generalize social skills learned in the training.

Kamps et al. (2015) conducted a 2-year study that researched the efficacy of using peer training and direct social skills instruction to improve social communication skills for children with autism in their classroom (naturalistic) setting. The participants of this study included 80 males and 15 females total with ages ranging from 62 to 82 months (ages 5-6 years) old at the beginning of their kindergarten year. All children met educational criteria of autism spectrum disorder and were receiving special education services. In addition, the participants were attending kindergarten in public schools and participated in the regular education classroom with their typically developing peers.

A multiple baseline design was used to determine student outcomes or performance with the experimental group and the comparison group. Baseline data were gathered using the Peabody Picture Vocabulary Test-4 (PPVT-4), Childhood Autism Rating Scale (CARS), the

Vineland Adaptive Behavior Scale-Teacher Report (VABS), and the Social Responsiveness Scale: Parent/Teacher Report. Both the experimental and control group had similar baseline results at the beginning of this study.

Neurotypical peers were selected from a child's regular education classroom or a classroom within one grade level by teacher recommendation to participate in this study. The peers had to be willing to participate, to be well-liked by their peers, considered to be a role model for their peers, and have good school attendance. Parental permission was also given before the study began. Each intervention group had four to six peers assigned for rotation purposes and to form a triad within each group (2:1). In addition to intervention groups, when more than one student was eligible to participate in this study, all students were assigned to the same experimental group. Using a randomization approach, the students with high functioning autism were randomly assigned to the experimental group and the comparison group choosing teacher names.

All intervention groups took place at the child's school setting and typically outside of the regular education classroom due to noise levels or other environmental reasons. Each intervention group began in the fall of each year with approximately 6 months of interventions. Each group typically met 2-3 times weekly. Five specific skills were taught within the groups: (a) ask and share; (b) commenting about self; (c) commenting about other's interests or activities; (d) using manners; (e) setting up the games and rules. Due to time constraints, three participants did not receive instruction on the fifth skill. Each communication skill area was taught 4-5 weeks before the next skills was added to an intervention group. Each time a new skill was added, the focus of the intervention group would be on the newly added

skill and the skills previously taught. Each 25-30-minute intervention session followed a routine of 10-minute direct instruction by an adult on the target social skill with visual cues and direct peer-child practice monitored by the adult, 10-15 minutes of specific game playing with peers prompting the child with ASD to engage in specific social skills, and teacher reinforcement or feedback for the last 5 minutes. Lessons for the skills to be taught to each group were scripted for the adults and text cues for the active participants were provided throughout each intervention group. These lessons were typically led by speech language pathologists, paraprofessionals, school counselors, or special education teachers. The researchers for this research study provided all training for staff, observed the intervention sessions 1-2 times per week, collected data, and modeled the direct instruction steps for each group. Fidelity checklists were completed for a total of 679 sessions with 86% fidelity.

Children in the comparison group received special education services and programming as determined by their Individualized Education Plan. Interviews with the children's teachers or speech language pathologists revealed the children were not receiving weekly social skills instruction with peers. For group comparisons and data collection purposes, four to six peers were also recruited for each child in order to form a rotating triad.

Data collection consisted of observations, standardized testing, and teacher ratings in the fall, midway through the intervention, and spring. Data was collected at the same times for the kindergarten and first grade. For the children of the experimental group, their typical developing peers were trained whereas in the comparison groups, the peers were not trained and adult's role was mainly to provide supervision. For the comparison groups, the children were told they could have 10 minutes of free play with minimum rules: stay at the table, play with items at the table,

and to be nice. In this group, the adults did not intervene, provide feedback, prompt, or reinforce specific behaviors. Each session was videotaped by the researcher.

The findings of this study indicate students in the experimental group demonstrated more growth in the area of social initiations with a mean growth of 3.3 to 5.5 in a time point outside of intervention times and in their natural settings than the comparison group 3.0 to 4.4. While initiations among the experimental group showed significant gains, the results were not clinically significant. During the intervention phases of both groups, the children showed increases in total communications acts: 5.7 to 10.7 for the experimental group and 5.2 to 8.9 in the comparison group. The amount of time a child participated in the intervention and the number of communications were correlated. The PPVT-4 indicated growth in communication among participants while CARS did not. Results from the pre- and post-CELF-4 showed improving scores for all students and those in the experimental, intervention groups showed the highest gains. The VABS indicated student groups grew at the same rate regardless of the group during their kindergarten year, and those in the experimental group showed greater growth in communication during their first-grade year. The teacher's impressions of growth showed both grades and groups demonstrated growth; however, those in the experimental group showed more improvement than the comparison group. On average, the majority of the participants were observed to have a gain of communication acts in their naturalistic environment by the end of their kindergarten year whereas they showed average gains of 10 communication acts by the end of their first-grade year. These results suggest the longer the intervention group, the larger the growth when measuring generalization of social skills.

Summary of Peer Network Approaches

I reviewed two studies that incorporated buddy or peer network approaches. Table 5 provides a summary of these findings.

Table 5

Peer Network Findings

AUTHORS	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Laushey & Heflin (2000)	Quantitative	-Two, 5-year-old male students diagnosed with autism in two separate kindergarten classes -Placed with 20-25 typically developing peers	-Rotating peer tutoring model in the first phase -Second phase was specific: asking and responding, gaining attention, waiting, and correct gaze direction	-Social skills performance improved and benefited all peers participating
Kamps et al. (2002)	Quantitative	Study 1		
		-Five students with autism and 51 general education peers -All students attended an elementary school in and an urban area	-Cooperative Learning Group: peers were trained to initiate and respond to their peers with ASD -Data collected for 2 years on the frequency, length, and duration of interaction	-Increased amount of time engaged in social interaction for the students with autism
		Study 2		
		-34 students with ASD in a public school setting -Approximately 120-130 typical (trained, familiar, and stranger) peers	-Social groups, lunch buddy groups, recess buddy, and peer tutoring -Data collected over 2 years for duration of interaction, reciprocity, play, on-topic social interactions	-Improvements of all students for duration of interaction, reciprocity, and staying on topic
Kamps et al. (2015)	Quantitative	-80 males and 15 females with ASD in kindergarten through first grade in public school setting	-Experimental and control groups	-During the generalization phase, the means increased in all three areas: initiations, responses, and total acts of communication

Summary of Chapter 2 Research

In Chapter 2, I reviewed and summarized nine studies that were designed to improve the social skills of students with autism. Chapter 3 presents my conclusions and recommendations.

Chapter 3: Conclusions and Recommendations

Simply placing students with autism in an environment with neurotypical peers will not ensure sufficient and meaningful interactions will occur (Terpstra & Tamura, 2008). In order to increase the likelihood of social interactions between students with autism and their peers, social skills instruction is required. In the past, teachers were typically responsible for delivering this instruction to the child with autism in a location typically separate from the general education setting along with similar-type peers. Due to the lack of generalization in their natural setting after these skills are taught, in recent years, several researchers have examined the effect of peer-mediated social skills intervention. I reviewed nine studies that evaluated social skills training outcomes using peer-mediated approaches.

Conclusions

In general, the results of all nine studies supported the effectiveness of peer-mediated social skills instruction for children with autism. Four of the studies incorporated techniques that were conducted mainly in naturalistic settings such as recess and the lunchroom (Laushey & Heflin, 2000; Morrison et al., 2001; Owen-DeSchryver et al., 2008; Whitaker, 2004). Peer network approaches were examined in three studies (Laushey & Heflin, 2000; Kamps et al., 2002; Kamps et al., 2015). The use of PRT with neuro-typical peers were reviewed in two studies (Harper et al., 2008; Licciardello et al., 2008). Only one participant in these nine studies did not demonstrate social skills gains. A summary of these outcomes is provided in Table 5.

Table 5**Chapter 2 Summary of Findings**

Category of Content	Author	# of Students		# of Participants who Increased Social Interactions	
PRT	Harper, Symon, & Frea (2008)	2		2	
	Licciardo, Harchik, & Luiselli (2008)	4		3	
Naturalistic Setting	Whitaker (2004)	10		10	
	Morrison, Kamps, Garcia, & Parker (2001)	4		4	
	Owen-DeSchryver, Carr, Cale, & Blakley-Smith (2008)	3		3	
	Mason, Kamps, Turcotte, Cox, Feldmiller, & Miller (2014)	3		3	
Peer Learning Groups/Peer Networks	Kamps, Royer, Dugan, Kravits, Gonzalez-Lopez, Garcia ...Kane (2002)	Study 1	Study 2	Study 1	Study 2
		5	34	5	34
	Laushey & Heflin (2000)	2		2	

While these results are favorable, there is limited follow-up data to support the long-term benefits of interventions and consistent generalization of skills after the intervention has ended. In addition, the studies collected data for social interactions and initiations by tallying frequency with duration. I found it peculiar that not one study included information regarding the quality of social interactions and whether the training had any positive impact on the students' social relationships.

In addition, cross-environmental factors were not considered in many of the studies. That is, the studies were limited primarily to a particular subject area or class due to school

schedules. Most often, data were not obtained in multiple settings during the school day or outside of school to ensure generalization beyond the classroom setting. It seems the data would be more reliable if it were collected in multiple settings for each of the participants.

I noted another limitation is the fact that each setting provided students with varying opportunities in which social interactions could occur. For instance, I speculate that recess and lunch setting would foster more opportunities for peers to interact with one another versus a structured classroom setting. Other variables affecting the number of interactions would be the opportunities the general education teachers provide for peer interaction within the naturalistic setting, the amount of adult prompting needed, whether the participant was supported by an assistant, the range of language abilities among students with autism, and the amount of training peers had to promote *social reciprocity* (Sperry et al., 2010).

Most often, the use of interventionists, whether they were used, and how, was inconsistent among studies. Typically, the more severe students often had an interventionist while the higher functioning students did not. The use of reinforcements for a desired behavior varied greatly as well. The studies did not note any plan for fading of either supports and measure sustainability of skills learned without additional support.

Data collected for these studies were not consistent with regard to duration of the baseline, intervention period, and follow-up periods. It should be noted that not every study included follow-up data, which raises a question on the validity of generalization and whether there are long-term benefits. For the studies that included post-data, the majority of the participants maintained skills learned during intervention phase.

A further limitation is the overall support from school staff and from community members in using neurotypical peers to aid in teaching a child with a disability. The perception of the parent with a neurotypical child could potentially be “Why would my child need to do the job of a teacher?” In addition, the training for the typically-developing peer requires training away from their regular classroom setting. Either of these could reduce teacher and parental support needed in order to effectively implement these types of interventions within a school setting and ensure success.

Recommendations for Future Research

The sample sizes in the studies were quite limited. Each of the studies cited this as a limitation even though I understand that single subject design may be a preferred option for analyzing outcomes with this special population. I think the research would be enhanced with a more in-depth analysis of qualitative rather than quantitative variables, although both are important. There are so many nuances in the type of social interactions that occur, which makes it difficult to condense into numerical data.

Implications for Current Practice

As a busy teacher with a demanding teaching load, I need strategies that are not only effective but also relatively efficient and simple to implement. While evidence-based peer-mediated social skill interventions for children with autism yields the promising results for social skill generalization, this can be particularly challenging because these practices require significant training and resources that are not always available in the public school setting. The findings of these studies are promising, one must keep in mind there’s a multitude of factors that can easily impact the success in using this type of intervention.

As a special education teacher who holds an educational K-12 autism disorder licensure and attending many workshops specifically for teaching social skills to this population, I have not seen training specific to utilizing peers for social skills nor have I seen curriculum to guide teachers on using peer-mediation; not to say it does not exist.

This type of model requires training and implementation beyond a typical teacher's prep time. While I had support of the regular education teachers and parents when using peer-mediated interventions, realistically I know that wouldn't always be the case. In my setting, I personally chose teachers who are quick to learn, are optimistic, open to new ideas, and I had an established relationship with. For students I selected, I chose those with parents I felt confident I would receive support from. I also know within the school setting, it can be difficult to set up social skills groups coordinated with classroom schedules including gaining the support of the parents.

Chapter 3 Summary

Using a child's typical same-aged peers as a source to teach, remediate, and reinforce social interactions for children with autism has been determined an effective strategy to promote generalization of skills within the educational setting. Each of the studies reviewed collected at least baseline and intervention data for a specific skill set; all participants demonstrated gains with the exception of one individual. Overall, the studies concluded an increase in social interactions between students with autism and their typical aged peers regardless of the variable differences of skills taught and monitored.

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