Social Skills Interventions for Students with

High Functioning Autism Spectrum Disorders:

A Review of Individualized Education Programs

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Abstract

While social skill impairments seem to be the defining characteristic of autism spectrum disorders, it is not clear what types of social skills interventions are being implemented in schools. The current study is a descriptive presentation and evaluation of the types of social skills interventions that schools are using to address these social skill deficits. The study included 88 Individualized Education Plans created for students with high functioning autism spectrum disorders from 14 schools from New York State. Results indicate that a majority of IEPs for students with a high functioning autism spectrum disorder are not listing a specific evidence based intervention technique and that schools seem to be utilizing a pull out service delivery utilizing service providers to implement and monitor the intervention. Current New York state regulations require students with a classification of autism to receive speech services outside of the regular education classroom.

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Introduction

Asperger's Disorder is a Pervasive Developmental Disorder (PDD) characterized by social impairments and a restricted range of interests and behaviors, without a significant delay in language (American Psychiatric Association, 2000). Many studies have demonstrated that individuals with Asperger's Disorder have difficulty appropriately negotiating social situations (Church, Alisanski, & Amanullah, 2000; Knott, Dunlop, & Mackay, 2006; Macintosh & Dissanayake, 2006; Spann, Kohler, & Soenksen, 2003). Some studies have even gone so far as to say that an impairment in social skills is the defining characteristic and biggest difficulty associated with Asperger's Disorder (Church et al., 2000; Knott, et al., 2006; Spann, et al., 2003). This inability to adapt to social situations has been found to affect many aspects of life including academic, emotional, occupational and social functioning (Bellini & Hopf, 2007; Licciardello, Harchik, & Luiselli, 2008; Myles & Simpson, 2001; Rao, Beidel, & Murray, 2008; Trimarchi, 2004). Some advocates have argued, and several courts have agreed, that in order for individuals with a pervasive developmental disorder to receive an appropriate education there needs to be an effort to improve their social skills (Etscheidt, 2003). Therefore the Individuals with Disabilities Act of 2004 and subsequent case law have required schools to address the social skills of student's with Asperger's Disorder IDEIA, 2004; Etscheidt, 2003).

Individuals with Asperger's Disorder struggle with many social skills including: sharing experiences/enjoyment, maintenance and repairing of relationships, perspective taking/empathy, awareness of surroundings, misreading of verbal/nonverbal social cues and the ability to understand the meaning and depth of emotional expressions (Church, et

al., 2000; Gustein & Whitney, 2002; Kaland, Callesen, Moller-Nielsen, Mortensen, & Smith, 2008; Macintosh & Dissanayake, 2006). Furthermore, individuals with Asperger's Disorder often engage in problematic behavior that confounds their social skills deficits and alienates them from peers. Some of the behaviors related to this lack of self control include: awkward speech and gestures, inappropriate volume of speech, aggressiveness, and annoying habits such as finger taping (Church, Alisanski, & Amanullah, 2000). These difficulties have been shown to affect many areas of functioning for individuals with this diagnosis.

While social functioning is obviously inhibited by immature social skills, occupational and academic functioning also seem to suffer. Several studies have found that individuals with inferior social skills did less well in the area of academics (Bellini & Hopf, 2007; Licciardello, et al., 2008; Myles & Simpson, 2001; Rao, Beidel, & Murray, 2008; Trimarchi, 2004; White, Scahill, Klin, Koenig, & Volkmar, 2007). Because lack of social skills seems to interfere with academic achievement and occupational functioning, it has been suggested that schools are compelled to target these social skills in order to improve academic functioning (Etscheidt, 2003).

According to the IDEA 2004, schools are obligated to provide free and appropriate public education to all students with disabilities in the least restrictive environment. For many students with Asperger's Disorder the regular classroom is the least restrictive environment, but in order to benefit from this environment these students need to receive instruction in how to interact with peers. Therefore, since inferior social skills have been consistently related to poor academic achievement, it is necessary to target social skills for an appropriate public education. According to a study by Etscheidt, (2003), disputes

between schools and parents of students with autism represent the "fastest growing and most expensive area of litigation in special education" (p. 51). In the case of an individual with a diagnosis on the autism spectrum, it is necessary to implement a social skills intervention in order for the school to be providing a sufficient education. Furthermore, there needs to be a specific methodology listed in the Individualized Education Plan of a student on the autism spectrum that is directly related to their social skill needs (Etscheidt, 2003).

There have been many studies investigating different social skills intervention programs. Support for several types of social skill intervention methodologies has been building consensus in the literature. These methodologies include: Group counseling/teaching of social skills (Kamps, et al., 1992), peer-mediated interventions (Garfinkle & Schwartz, 2002; Kalyva & Avramidis, 2005; Kohler, et al., 2007; Laushey & Helfin, 2000; Licciardello, et al., 2008; Owen-DeSchryver, et al., 2008) classroom-wide interventions (Cooper, et al., 1999), the use of social stories/cartooning (Myles & Simpson, 2001), as well as several one-on-one adult-mediated strategies (Bellini et al., 2007; Bock, 2007; Pierce & Schreibman, 1997; Yang, et al., 2003). While these studies have several limitations including questions regarding maintenance and generalization of skills, there have been consistent positive increases in social skills in the short term.

While there does seem to be a fair number of viable options available for schools to incorporate social skills interventions for individuals with Asperger's Disorder, it is not clear what types of methodologies are being utilized in reality (Leyser & Kirk, 2004). Several studies have investigated school services for individuals with Asperger's Disorder by interviewing or surveying parents of students with Asperger's Disorder or

autism (Little, 2003; Starr, Foy, & Cramer, 2001; White, et al., 2006). For example, according to Little, (2003), while 78% of mothers rated socials skills training as extremely important, 22% stated that this service was not available to them. Furthermore, parents in a study by White et al., (2006), reported that their children infrequently received services targeting social skills development. White et al., (2007) then stated "Given the potential benefits of social skill interventions delivered in schools and clinical evidence that social deficits interfere with academic progress for children with autism spectrum disorders, this appears to be an area of unmet need in schools" (p. 1410). This research, using parental surveys, suggests that social skill intervention in schools may be lacking. Further research using information generated by the schools is needed for confirmation of this unmet need for social skills interventions for students with Asperger's Disorder.

It has been suggested that schools may lack the available resources to adequately implement social skills interventions. Schools may not have the staff necessary to implement or monitor the interventions and school personnel may lack the knowledge or training needed to initiate interventions (Fish, 2006; White, et al., 2006). Although few studies have actually investigated what types of barriers interfere with social skills intervention implementation, there have been several studies addressing barriers to school policy change (Leddick, 2006; Useem, et al., 1997). The common themes for suggested and studied barriers to school change include: lack of training/knowledge, unavailability of professional staff, lack of access to current research/information, perceived interventionalist efficacy, lack of communication between professionals, staff turnover, lack of administrative support and time constraints (Fish, 2006; Leddick, 2006; Useem,

Christman, Gold & Simon, 1997; White, et al., 2006). While these possible barriers were identified in school policy research, they may have implications for studying barriers to social skills interventions.

Inadequate social interactions seem to be the most debilitating characteristic of Asperger's Disorder. While schools are legally obligated to address these difficulties, schools seem to be having difficulty implementing effective programming despite some viable social skills interventions. Few studies have addressed what schools are actually doing in order to address the need for social skills interventions and fewer still have sought to explore possible barriers to social skills intervention implementation.

The present study is a descriptive presentation and evaluation of the types of social skills interventions are being implemented in schools. It seeks to add to the knowledge in this area by addressing the basic questions of what proportion of schools are addressing social skills interventions for individuals with pervasive developmental disorders and what methodologies they are using. The study will also investigate what types of barriers seem to be preventing schools from implementing research-based interventions.

Chapter 1 - Review of Literature

In 1944, Hans Asperger became interested in and began writing about an interesting group of children who shared similar personality characteristics and behaviors (Attwood, 2007). The children demonstrated deficits in social maturity and social reasoning, which seemed to result in few friends and a significant amount of teasing from peers. While their language was not impaired and their cognitive abilities seemed appropriate for their age, these children seemed to have difficulty using verbal and nonverbal communication (Attwood, 2007). They seemed to misunderstand the social implications of language. These children also seemed to have a preoccupation with a specific topic of interest. These interests dominated their thoughts and were consistently a topic of conversation and play. Asperger called this condition Autistic Personality Disorder, as he thought that this diagnosis was more related to an individual's personality than a mental illness (Attwood, 2007).

Diagnostic Criteria

After several decades of studies, this condition was included in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). The DSM-IV includes Asperger's Disorder as a Pervasive Developmental Disorder along with Autistic Disorder, Rett's Disorder, Childhood Disintegrative Disorder and Pervasive Developmental Disorder, Not Otherwise Specified (NOS) (American Psychiatric Association, 2000). The Pervasive Developmental Disorders share common characteristics such as impairments in social interaction skills, communication skills and the presence of stereotyped behaviors, interests and activities.

There are several diagnostic criteria associated with Asperger's Disorder. The first criterion is a "severe and sustained impairment in social interaction." These impairments may include; an impairment in the use of multiple nonverbal communicative behaviors, the failure to develop age appropriate peers relationships, lack of spontaneous seeking to share enjoyment or lack of social or emotional reciprocity. The second criteria for a diagnosis of Asperger's Disorder is the presence of "restricted, repetitive patterns of behaviors, interests, and activities". This may include; a preoccupation with a specific and restricted interest in a topic, adherence to specific and nonfunctional routines or rituals, stereotyped and repetitive motor mannerisms or a preoccupation with parts of objects ." The third criteria states that this condition must cause clinically significant impairment of social, occupational or other functioning. The fourth and fifth diagnostic criteria are included in order to exclude other diagnoses. The forth criteria states that in order to diagnose and individual with Asperger's Disorder, there should be no clinically significant delay in language, cognitive development or in the development of self help or adaptive behaviors. Finally, in order for a diagnosis of Asperger's Disorder, criteria cannot be met for another Pervasive Developmental Disorder or Schizophrenia.

According to Part 200 of the New York State Regulations of the Commissioner of Education, in order for a child to be recognized as having a disability and to receive special education services, his condition must fall into one of thirteen disability categories (Individuals with Disabilities Education Improvement Act, 2004). Asperger's Disorder is normally included under the educational disability definition of autism (IDEIA, 2004). The Part 200 definition of autism is similar to the DSM-IV definition for Pervasive Developmental Disorders. While the Part 200 disability category is called

autism, the child could have one of several different DSM-IV diagnoses that would be included under this category, including: Autistic Disorder, Asperger's Disorder and Pervasive Developmental Disorder, NOS. According to Part 200, in order to receive services as a student with autism, there must be a significant impairment in nonverbal communication and social interaction that adversely affects a student's educational performance (IDEIA, 2004). Other characteristics within this diagnostic category include engagement in repetitive activities, stereotyped movements, resistance to environmental change and unusual responses to sensory experiences (IDEIA, 2004). This term does not apply if the student's educational performance is primarily affected by an emotional disturbance.

Since the inclusion of Asperger's Disorder in the DSM-IV there has been a controversy over whether or not Asperger's Disorder is a separate diagnosis or simply a higher functioning version of autistic disorder (Freeman, Pegeen, & Candela 2002). The diagnostic criteria for autistic disorder and Asperger's Disorder are very similar. They have similar requirements involving impairments in social interactions as well as repetative and restricted interests and behaviors (American Psychiatric Association, 2000). The biggest difference in diagnostic criteria is that autistic disorder includes a delay in language and cognitive development, while Asperger's Disorder does not. While there is some evidence that an early delay in language may predict lower verbal scores on cognitive measures (Koyama, Tachimori, Osada, Takeda,& Kurita, 2007), there is still controversy regarding whether these disorders should be on a continuum rather than separate diagnoses (Freeman, et al., 2002). While both sides claim to have research support for their ideas, it seems that neigther side has been able to rule the other out

(Freeman, et al., 2002; Macintosh & Dissanayake, 2004). In a meta-analysis of studies concerning the symptoms of individuals with Asperger's Disorder and autistic disorder, Macintosh and Dissanayake (2004) concluded that there is not enough evidence to either refute or support that Asperger's Disorder is a unique diagnoses, separate from autistic disorder.

In order to be diagnosed with Asperger's Disorder, the clinician must rule out the existence of autistic disorder, ideally on the ground of the presence of a cognitive or language delay (American Psychiatric Association, 2000). The question arises of whether professionals are actually diagnosing individuals according to this exclusion rule Tryson, , Mayes, Rhodes, & Waldo (2006) found that many students diagnosed with Asperger's Disorder actually did meet the criteria for autistic disorder. This finding suggests that there may be students with similar symptoms given different diagnoses.

Social Skills Impairments

Of the aforementioned diagnostic criteria for Asperger's Disorder, the most debilitating characteristic of the disorder is the criterion related to a difficulty with social interactions (Church, et al., 2000; Knott, Dunlop, & Mackay, 2006; Little, 2003; Rogers, 2000). Rogers (2000) described social skills impairments as the most handicapping area of the impairments associated with the disorder. For example, Church, et al. (2000) surveyed parents of students with Asperger's Disorder and found that parents considered social skills impairments to be the greatest challenge their children faced. In a study that utilized parent surveys and interviews, Little (2003) found that 78% of mothers of students with Asperger's Disorder rated the need for interventions to address social skills impairments as extremely important. Knott, et al. (2006) surveyed parents and children

with autism, Asperger's Disorder and Pervasive Developmental Disorder, NOS, and found that while children with these disorders reported fewer problems with their social interactions then their parents reported, both groups rated social skills impairments as being very important. Both groups also reported that social interactions were significantly impaired, compared to their nondisabled peers.

The term social skills is very broad and lacks a universal definition. There are many behaviors and thoughts that are involved in social skills. Recently, researchers have been focusing on what areas of social skills seem to be impaired in individuals with Asperger's Disorder. One area of social skills that has continuously been found to be impaired in individuals with Asperger's Disorder is the ability to read and comprehend social cues (Bock, 2007; Church, et al., 2000; Gillberg, 2001). Individuals with Asperger's Disorder often misread nonverbal cues such as body language, gestures and facial expressions (Bock, 2007; Church, et al., 2000; Gillberg, 2001). Similarly, they often have difficulty using these social cues in their own communication (Gillberg, 1991; Polirstok & Houghteling, 2006). Individuals with Asperger's Disorder have problems using appropriate eye gaze, eye contact, voice inflection, facial gestures and hand or body gestures (Gillberg, 1991; Polirstok & Houghteling, 2006).

Similarly, these individuals often have impairments in more complex cognitive processes such as theory of mind (Polirstok & Houghteling, 2006; Kaland, Callesen, Moller-Nielsen, Mortensen, & Smith, 2008). Theory of mind is simply defined as the ability to comprehend and to be empathetic to other people's mental states. This ability allows people to understand and predict other people's behavior (Kaland, et al., 2008). An impairment in this cognitive process would make it difficult for an individual with

Asperger's Disorder to take other people's perspective into account (Bock, 2007; Church et al., 2000; Gillberg, 1991; Kaland, et al., 2008).

Individuals with Asperger's Disorder also tend to have difficulty understanding the depth and meaning of emotional expressions (Church, et al., 2000; Knott et al., 2006). It can be difficult for a person with Asperger's Disorder to comprehend the emotional quality of speech. Furthermore, individuals diagnosed with Asperger's Disorder also have a difficult time both understanding and using non-literal communication. They have impairments in using and understanding humor, figurative language, irony, sarcasm and metaphor (Polirstok & Houghteling, 2006).

These social skills impairments are related to several behavioral impairments associated with Asperger's Disorder. Due to impairments in cognitive tasks such as theory of mind and perspective taking, individuals with Asperger's Disorder have a difficult time imitating appropriate social skills from their peers (Garfinkle & Schwartz, 2002). They also have difficulty initiating, sustaining and maintaining relationships with others (Church et al., 2000; Knott et al., 2006; Gustein & Whitney, 2002). Furthermore, individuals with Asperger's Disorder do not seek to share their experiences with other people, compared to their nondisabled peers (Gustein & Whitney, 2002). These behaviors are similar in that they all involve a lack of participation in social relationships with peers. This lack of initiating involvement with peers is a cycle both affected by and complicating impairments in social skills.

In addition to the behaviors and skill deficits that tend to cause children with Asperger's Disorder to distance themselves from their peers, there are several behavioral problems associated with Asperger's Disorder that tend to prevent peers from

approaching and interacting with them (Gillerg, 1991; Macintosh & Dissanayake, 2006). Again, this limits their ability to interact with peers which does not allow them to gain and practice social skills. Some of these problematic behaviors include: being inappropriately silly, being too loud, being aggressive and blurting out thoughts at inappropriate times (Church et al., 2000). Other behaviors include problems controlling their tempers (Knott, et al., 2006) and being hyperactive (Macintosh & Dissanayake, 2006). Children with Asperger's Disorder seem to have a bidirectional deficit in social skills which is complicated by their lack of social interaction due to skills deficits, tendency to engage in solitary activities and display of inappropriate behavior, which in turn intimidates or annoys peers who will be less likely to initiate an interaction.

These impairments in social skills and alienating behaviors have been found to have a negative effect on various aspects of functioning. Social competence has been found to predict future success and quality of life in a number of areas (Gustein Whitney 2002). The first and most obvious area that is affected is social functioning. Individuals with less developed social skills have been found to have less satisfying relationships (Gustein Whitney 2002), lower levels of peer acceptance (Hartup, 1989; Licciardello, Harchik, & Luiselli, 2008) and more instances of being picked on or teased by peers (Rao, Beidel, & Murray, 2008). Individuals with impaired social skills also have problems in occupational functioning, as poorer social skills are related to unemployment and underemployment and problems with relationships in the workplace (Gustein Whitney 2002; Rao, et al., 2008). Lack of social skills also leads to difficulty in understanding workplace culture, especially relationships between employers and employees (Myles & Simpson, 2001).

Social skill deficits have also been found to be related to components of emotional functioning. Specifically, social skills impairments have been linked to increased loneliness (Gustein Whitney 2002), depression (Rao, et al., 2008; Elder, Caterino, Chao, Shacknai, & De Simone, 2006) and a general increase in mental health problems (Rao, et al., 2008; Elder et al., 2006).

Finally, social skills have been found to be related to academic functioning. Social skills impairments have been found to have a negative effect on academic achievement (Hartup, 1989). Myles and Simpson (2001) suggest that students who have inferior social skills may have difficulty understanding the social and behavioral expectations and culture of school, what they call the "hidden curriculum". This difficulty in understanding the hidden curriculum makes students feel uncomfortable and distracted and has a negative effect on their academic functioning (Myles & Simpson, 2001). Furthermore behavioral problems associated with Asperger's Disorder may compete with academic achievement by limiting opportunities for learning (Hartup, 1989). A student who is regularly removed from the classroom or engaged in problem behavior will miss out on classroom instruction.

Law and Case Law

Social skills are important to all students and have a significant impact on social, emotional and academic functioning (Elliot, McKevitt, & DiPerna, 2002). Several researchers have established a direct link between social skills and academic achievement (Elliot, et al., 2002). Because select disabilities, such as Asperger's Disorder, have an inherent impairment in social skills associated with them, many parent advocacy groups,

law makers and judges have found that schools are required to include social skills training in an Individualized Education Program (IEP).

Individuals with Disabilities Education Improvement Act

The Individuals with Disabilities Improvement Act (IDEIA) guarantees free and appropriate public education (FAPE) to all students with a disability (IDEIA, 2004). FAPE is intended to take place in the least restrictive environment (LRE) for the student. For many students with Asperger's Disorder, the least restrictive environment is the general education classroom.

Research has shown that students with autism benefit from being included in the regular education with non-disabled peers (Cooper, Griffith, & Filer, 1999; Weiss & Harris, 2001; White, Klin, Koenig, Scahill, & Volkmar, 2007;). Unfortunately, inclusion may negate its intended effect if the student with autism is not socially ready to interact with his peers (Cooper, et al., 1999, White, et al., 2007). As discussed earlier, some of the social deficits and problematic behavior associated with Asperger's Disorder may alienate them from peers (Weis & Harris, 2001; White., et al., 2007). Therefore, in order for these students to have an appropriate public education, they need to be equipped with the social skills necessary to function with non-disabled peers.

To ensure that a student receives the necessary services, the school's IEP Team is given the responsibility of designing an IEP that will set measurable goals for the student and will list the services necessary to achieve those goals. These goals and services are intended to be tailored to suit the individual needs of each student. As stated previously, social skills impairments are one of the criteria in diagnosing a child with Asperger's Disorder (American Psychiatric Association, 2000). Furthermore, some researchers have

suggested that this impairment is the central characteristic of the disorder (Church, Alisanski, & Amanullah, 2000; Knott, Dunlop, & Mackay, 2006; Little, 2003; Rogers, 2000). Given this information and the fact that researchers have found a direct link between social competence and academic achievement (Elliot, et al., 2002), it becomes clear that in order to provide an appropriate education for a student with Asperger's Disorder there needs to be an effort made to address social skills impairments.

Due Process Cases

Debates over what needs to be included in the IEP for students with a classification of autism have led to an increase in the number of due process hearings (Ikeda, 2002). Several components, including a greater awareness of autism, an increasing number of students diagnosed with autism and the effective organization of parental advocacy groups for students with autism, have led to this increase in due process hearings (Ikeda, 2002). Currently, due process hearings concerning students with autism represent the fastest growing and most expensive area of litigation in special education (Baird, 1999).

Susan Etscheidt (2003) reviewed 68 due process hearings concerning students with autism and found that there were three factors that influenced whether the IEP for a student was deemed reasonably calculated to provide educational benefit. The factors included whether or not the goals on the IEP were consistent with evaluation data, whether the IEP members were qualified to determine appropriate programs for students with autism and whether the methodology of the IEP were reasonably tailored to achieve the goals of the IEP (Etscheidt, 2003).

Etscheidt (2003) stated that "without a specification of methodology, a determination of IEP appropriateness is impossible" (p. 52). In order to prove that the components of the IEP are appropriate, schools must: (a) show the required components of the IEP, (b) show that the goals were reasonable and (c) show that the methodology selected was tailored to meet the goals set forth in the IEP (Etscheidt, 2003). Courts have attempted to stay out of theoretical debates over which methods are the best and have focused more on if the selected method is adequate (Etscheidt, 2003). While the school must design and list a clear and unambiguous methodology on the IEP, choosing a methodology is up to the schools. Methods only need to be generally accepted in the education community (Mulick & Butter, 2002). According to Etscheidt, (2003), the methods do not need to be ideal but they need to provide more then trivial educational benefit.

In due process cases where the parents prevailed, schools were found to have selected inadequate methodology that was unable to achieve the IEP goals (Etscheidt, 2003). There were several factors that led to these decisions including: the methodology was unspecific or vague; the methodology was not listed; the program was not individualized and was instead convenient or generic; the program was not intensive enough or the program would not enable the student to achieve the IEP goals (Etscheidt, 2003). In the case of Board of Education v. Michael M., the student was an eight year old boy with autism, who was receiving skill remediation, speech and occupational therapy services (as cited in Etscheidt, 2003). The student's parents wanted him to receive a home-based applied behavior analysis technique where the child would learn to master selected social skills in their natural environment. The courts found in favor of

the parents because there was no evidence to verify the adequacy of the methodology in the IEP and no connection between the IEP goals and methodology (as cited in Etscheidt, 2003). In the case of Hot Springs School District (as cited in Etscheidt, 2003), the student was an elementary age student with autism who was receiving a 30 hour a week Applied Behavior Analysis (ABA) intervention in school, with no home component, in addition to speech, occupational therapy, physical therapy and support services. The student's parents wanted additional ABA including ten hours a week of home based ABA paid for by the school. The court found in favor of the parents because the school districts IEP methodologies were vague or non-existent, which made it impossible for the court to determine if the methods were appropriate. These cases are examples of the effects of not providing clear and appropriate methodologies on the IEP.

In due process cases where the school prevailed, the courts found that the schools proposed method was appropriate for the child with autism would permit educational benefit and constituted a free and appropriate public education (Etscheidt, 2003). In the case of G. v. Fort Bragg Independent Schools, the student was a nine year old boy with autism who was receiving Discrete Trail Training (DTT), occupational therapy, speech and extended school year services. The student's parents wanted an intense, in-home supervised applied behavior analysis program. The court ruled in favor of the school because the school's methodology incorporated DTT, which is an applied behavior analysis technique where the instructor teaches a skill and the student is allowed to practice the skill with support, was found to be providing an educational benefit (as cited in Etscheidt, 2003). In the case of La Mesa-Spring Valley School District, the student was a three year old with autism who was receiving in home services 21.5 hours per

week of DTT, as well as speech, physical therapy and adaptive physical education support services. The student's parents wanted 30-40 hours of DTT a week. The court ruled in favor of the school because the preschool offered a variety of methodologies including Treatment and Education of Autistic and other Communication handicapped Children (TEACH), that were capable of meeting the IEP goals (as cited in Etscheidt, 2003). These cases show the legal benefits to school districts of including clear and appropriate methodologies on the IEP.

Types of Social Skills Interventions

As discussed, social skills are integral to several areas of functioning. Furthermore, IDEIA 2004, as well as due process findings, require schools to provide a social skills intervention when necessary. Luckily, there are several viable social skills interventions programs available for schools. Before beginning a discussion of the available programs for students with Asperger's Disorder, it is important to look at the quality of the studies investigating social skills interventions. Most studies investigating social skills interventions for individuals with Asperger's Disorder suffer from methodological weaknesses. The first concern is the absence of a universal definition of social skills (Rao, et al., 2008). Several studies use similar but slightly different definitions for this construct, and at times focus on different social skill impairments, making it difficult to compare research (Rao, et al., 2008). A similar issue concerns the absence of a consistent objective assessment tool to measure the gains in social skills, which also makes it difficult to compare studies (Krasny, Williams, Provencal, & Ozonoff, 2003). Furthermore, as a whole, studies investigating social skills interventions have small sample sizes (Krasny, et al., 2003; Rao, et al., 2008). A large proportion of

the research has come from case studies calling the generalizability of the research into question. Also, while several studies use a baseline design, many studies lack a true control group (Krasny, et al., 2003; Rao, et al., 2008). Perhaps the two biggest problems in social skills intervention research are the generalization and maintenance of skills (Bellini, Peters, Benner, & Hopf, 2007; Rao, et al., 2008; Krasny, et al., 2003). Many studies are short term and do not include a longitudinal perspective on the maintenance of skills (Rao, et al., 2008; Krasny, et al., 2003; Bellini, Peters, Benner, & Hopf, 2007). Furthermore, many studies take place outside of the child's natural environment, so it is often not clear if students are able to generalize the skills to outside settings (Rao, et al., 2008; Krasny, et al., 2003; Bellini, Peters, Benner, & Hopf, 2007).

Even though there are some weaknesses in the research on social skills intervention, there does seem to be some promise in the short-term research findings. In their meta-analysis of research on social skills intervention, Rao, et al. (2008) found that 70% of the studies examined reported a number of different positive results, from increasing social skills, such as eye contact and initiating play, to decreasing competing behaviors, such as walking away during conversations and engaging in stereotypic motor mannerisms. Despite the methodological weaknesses listed above, these social skill interventions may be having a positive effect on student's functioning.

There are several ways to categorize the different social skills intervention methods. In their meta-analysis, Rao, et al., (2008), broke the interventions into: (a) environmental modifications or making changes to the social and physical environment of the child; (b) child-specific interventions or direct social skill instruction; (c) collateral skills instruction or training of social skills related to the target skill; (d) peer-mediated

interventions; and (e) comprehensive interventions that combined two or more methods. Weiss and Harris, (2001), used a categorization system that separated was organized by the method of social skills intervention. Weiss and Harris, (2001), categorized social skills intervention by the primary agent of social skills training. They separated the interventions into adult-mediated, classroom-wide interventions and peer-mediated interventions. Adult-mediated studies were studies where an adult was engaged one-on-one with the child, while peer-mediated studies were interventions where children were trained to interact with the child with autism (Wiess & Harris, 2001).

There have been several other systems for organizing research-based social skills interventions. In a review of empirically supported social skills intervention formats, Rogers (2000) organized the interventions into three categories including (a) peer-mediated strategies; (b) adult instruction; and (c) social skills groups. Because of the variation in available services for students with autism, the National Research Council was formed to synthesize evidence-based social skills interventions for students with autism (Lord & McGee, 2001). The National Research Council first seperated interventions based on the format in which interventions were conducted. This included child-parent interactions, child-adult interactions and child-child interactions. Within child-adult interactions, they included two specific intervention techniques including pivotal response training as well as script training (Lord & McGee, 2001). Within child-child interactions (also referred to as peer-mediated interventions), the National Research Council included the use of social stories (Lord & McGee, 2001). Finally, in a reveiw of empirically supported social skills intervention techniques, Scattone (2007) incorporated several catagories including (a) video modeling; (b) behavioral techniques (including

pivitol response training, priming and self monitoring techniques) (c) Scripts; and(d) Social stories. For a complete list of the various organization systems please refer to Table 1.

For the present study, social skills intervention studies have been separated into categories based on the format of intervention or how the intervention in presented. The categories include: a) group interventions, b) classroom-wide interventions, c) adult-mediated interventions and d) peer-mediated interventions. Table 2 provides a brief summary of the different social skills intervention formats.

Social Skills Groups

The first type of intervention to be discussed is the social skills group. A social skills group is usually carried out by one or more professionals with some expertise or understanding of Asperger's Disorder or autism. Group membership varies from including only students who need to improve their social skills to including some non-disabled peers to serve as role models and tutors. Having a group of students learning and practicing social skills is thought to promote generalization because they are learning alongside peers and there are several people with whom to practice the new skills. Groups also allow for a sense of belonging (Krasny, et al., 2003).

On the other hand, group interventions require additional planning and restructuring as changes in group dynamics develop. Groups also require the interventionist to take several individuals' progress and development into account, which is more complicated then planning for a single student's growth.

In their meta-analysis of group social skills interventions, Krasny et al. (2002) found that most group interventions lead to positive outcomes. These positive outcomes

included increased conversational skills, such as knowing when to start and stop talking in a social situation and how to select relevant information to maintain a conversation. Other studies were able to decrease behaviors such as inappropriate utterances and repetitive statements. Krasny et al. (2002) summarized key components of successful group strategies. First of all, as with most social skills training programs for students with Asperger's Disorder, it is important to make the abstract concrete. Social skills involve many abstract constructs that are difficult to understand, especially for a student with Asperger's Disorder who might think in more literal terms. It is important that these ideas are operationalized in a way so that each student can understand the construct and differentiate it from other constructs. This can be done through creating examples and concrete instructions for how to recognize and master each construct.

According to Krasny et al. (2003), group strategies also need to be structured and predictable, as students with Asperger's Disorder become anxious in unstructured activities and therefore perform better with a predictable routine. For example, Lopata, Thomeer, Volker and Nida (2006), carried out a group intervention in which the routine was planned out to the minute, even including five minute transition activities so that participants knew what to expect at all times.

When forming a group it is important to consider the characteristics of the perspective group members. Krasny, et al. (2003), suggest that it is important to ensure that individuals in a group have similar language needs. Students with Pervasive Developmental Disorders can vary greatly in their ability to use language, therefore it is important to group students by language ability so that students have similar goals (Krasny, et al., 2003). Other studies have created groups by separating students by age

and ability level (Carter, Pritchard, Wittman, & Velde, 2004). Again, this is done to create groups with similar level of need and similar goals.

To promote generalization, social skill groups should also provide multiple and varied opportunities to acquire and practice skills (Krasny, et al., 2003). This can be done in a number of ways. In the PROGRESS Curriculum , students might read a story about sharing, break into pairs and read the story aloud, then separate into different sets of pairs to discuss a toy that promotes sharing. At snack they may be given one piece of cake that must be shared between a group and finally the whole group plays a sharing game (Krasny, et al., 2003). This technique includes using different activities to help the child generalize the skill in new situations and it includes using multiple partners to help the child generalize to different people (Krasny, et al., 2003). Carter et al. (2004) included visits to community organizations to practice new skills in real world settings. Including nondisabled peers in a group can also help students with Asperger's Disorder generalize skills to interacting with peers outside of the group (Carter, et al., 2004). Assigning homework to practice skills outside of the group is also an effective way to promote generalization (Lopata, et al., 2006).

One of the greatest strengths of using a group design is that students feel supported by having a group with similar needs. Students with Asperger's Disorder may not automatically feel as though they are part of the group. Krasny, et al. (2003) state that "a feeling of group belonging is rarely achieved" (p. 115). Therefore, these authors suggest that groups should keep children focusing on each other rather than on themselves. For example, if a student needs to draw a picture, an activity might be to ask another student about their favorite animal and then draw a picture of that animal to give

to that student. Focusing on the other student and promoting cooperation in activities is crucial if there is to be group cohesiveness (Krasny, et al. 2003; Lopata, et al., 2006).

Classroom-Wide Interventions

Another category of social skills interventions is classroom-wide approaches. This type of training usually takes place in the general education classroom and includes all students regardless of presence of disability. The idea behind these interventions is that everyone benefits from learning social skills; when nondisabled peers are able to use social skills, the students with Asperger's Disorder will have better models in the classroom (Gresham, 2002). These interventions promote generalization because they take place in the child's natural environment. They are also attractive to educators as they allow teachers to be included in social skills training and interventions for their students in the regular education classroom. Using a classroom-wide interventions are is fairly efficient as it does not take up much time or resources (Garfinkle & Schwartz, 2002). Unfortunately, these interventions may be less intense and therefore may not be as useful to students with more serious social skill impairments.

Classroom-wide interventions use many of the same principles as group interventions. First, it is important to make abstract ideas more concrete and begin with simple skills while progressing to more complex skills. When there are varying levels of social skill mastery it is important to start at a fairly elementary level so that students with social skill impairments do not start the procedure without some foundation (Kamps, Leonard, Vernon, Dguan & Delquadri, 1992). It is also important to promote group cohesion by making the skills instruction fun and cooperative. For example, Garfinkle and Schwartz (2002), used an activity where students had to imitate a leader. In this

activity, each student had a turn being the leader and the other students had to imitate the leader's actions. This activity was an enjoyable way to develop basic social skills such as imitation and empathy.

In order to promote generalization, Laushey and Helfin (2000) conducted a classroom-wide intervention where a class of students, including one student with autism, were taught to "stay, play and talk" to their peers. Each day the students were paired with a different buddy to stay, play and talk to during free time. At the beginning of each free time, the teachers would remind the students of their training in how to stay, play and talk to their buddies in order to promote maintenance. The student with autism was able to interact with each of his classmates on different days, which helped promote generalization of skills to different people and places (Laushey & Helfin, 2000).

Classroom-wide interventions often utilize prompting and praise (Garfinkle & Schwartz, 2002; Kamps, et al., 1992). In order to ensure that all students are involved in the intervention it is important for the instructor to prompt students on how to perform when necessary. Continued feedback and praise are also important to reinforce appropriate responses and help correct incorrect behavior (Garfinkle & Schwartz, 2002; Kamps, et al., 1992).

Adult-Mediated Interventions

Another type of intervention is the one-on-one or adult-mediated intervention. Adult-mediated interventions include procedures where a student with Asperger's Disorder is taken out of his classroom and spends time with an adult to learn social skills. These interventions are helpful in that they can be highly individualized because there are usually fewer individuals being treated. This allows for the student's individual deficits

to be targeted. While intensity and individualization are strengths of this type of intervention, there are some weaknesses. Criticism of this technique usually include concerns regarding generalizability (Cosgrove, 2007; Weiss & Harris, 2001). Being one-on-one with an adult is often too different from the child's natural environment and this causes the child to have a difficult time using what he has learned in the intervention in real life situations (Weiss & Harris, 2001; Cosgrove, 2007). Adult-mediated strategies may also cause students with Asperger's Disorder to become too dependent on adults (Weiss & Harris, 2001; Cosgrove, 2007). Furthermore, having adults around the child may intimidate and impede other students from approaching the student with Asperger's Disorder (Weiss & Harris, 2001; Cosgrove, 2007).

Adult-mediated strategies include a wide variety of intervention methodologies such as applied behavior techniques including (a) pivotal response training, which is an intervention where pivotal behaviors are selected and taught in order to affect a wide range of more specific behaviors and (b) Discrete Trials Training, which is a program where a child learns all the skills they need for daily living, one skill at a time (Weiss & Harris, 2001). Adult-mediated strategies could also employ strategies such as social stories and script training, where the student with Asperger's Disorder learns social skills from a story or from reciting a written script, respectively (Weiss & Harris, 2001).

To address concerns over generalization, some researchers have mixed adult-mediated strategies with other formats of social skills intervention. For example, Bauminger (2002), used a procedure where pivotal response training was followed by a group intervention. This allowed the student to get individualized target skill interventions before he entered a social skills group for more general skills (Bauminger,

2002). While learning new skills in the group, he could be continually monitored for his individual deficits in a natural setting (Bauminger, 2002). In another study by Bauminger (2007), students with higher-functioning autism were provided with adult-mediated social skills training before they were placed in a peer-mediated intervention with a non-disabled partner. Again, this allowed for the student to receive individualized training for specific deficits, in conjunction with a peer-mediated intervention where he could practice skills in a more naturalistic environment (Bauminger, 2007).

Peer-mediated Interventions

Peer-mediated strategies are another type of social skills intervention. Peer-mediated strategies are interventions where the target child's peers implement the training. Several researchers have suggested that peer-mediated interventions are the most effective category of social skills interventions (McConnell, 2002). These strategies are attractive because of their inherent strengths related to generalization. The individual with Asperger's Disorder is able to learn social skills from his/her peers in his/her regular education classroom and regular education routine.

These interventions not only have positive effects for the children with Asperger's Disorder but they also have a positive impact on the peers and teachers involved in the intervention (Kalyva & Avramidis, 2005; Kamps, et al., 1998). Teachers gain confidence in working with the particular student, as well as with children with autism in general (Kalyva & Avramidis). The typical students involved in the studies have reported being accepting of their roles and excited to participate (Kamps, et al., 1998).

Odom and Strain (1984) identified three techniques for peer-mediated social skills interventions. These three categories are proximity, prompt/reinforce and peer initiation.

Proximity is simply placing the student with non-disabled peers. The peers are typically simply told to play with the target child (Weiss & Harris, 2001). However, there is consensus in the research that proximity alone is: (a) not as effective as prompt/reinforce or peer initiation; and (b) is insufficient in bringing about generalized and enduring social skills improvements in children with Asperger's Disorder (Weiss & Harris, 2001). Prompt/reinforce involves teaching peers to prompt selected social skills and reinforce the behaviors once observed (Weiss & Harris, 2001). For example, Pierce and Schreibman (1997), used multiple peers to carry out a behavioral intervention called Pivotal Response Training on a student with autism. These peers were taught to prompt and reinforce a list of desirable behaviors, including sharing toys and initiating play (Pierce & Schriebman, 1997). Finally, peer initiation strategies teach peers how to approach and play with children with Asperger's Disorder (Weiss & Harris, 2001). For example, Mcgrath et al. (2003) taught peers how to attract the attention of the child with autism and how to keep his attention throughout play.

Specific peer-mediated interventions can also be broken down into categories based on how many peers are involved (DiSalvo & Oswald, 2002). Interventions using only a few peers are referred to as peer buddy approaches, while interventions using a group of peers are referred to as peer network approaches (DiSalvo & Oswald, 2002). For example, Lee, Odom and Loftin (2007) trained only two peers in how to get a peer with autism to play with them. On the other hand, Kalyva and Avramidis (2005), used the Circle of Friends Curriculum for peer-mediated social skills interventions to train 25 students how to play with their peer with autism.

There are several other components to peer-mediated interventions that differ from study to study. These areas include how the peers are recruited, and the type of training the peers receive. Peers are selected in a variety of ways. Some studies suggest having the teacher choose the peers (Kalyva & Avramidis, 2005; Mcgrath, et al., 2003; Thiemann & Goldstein, 2004). Other studies have suggested that peers be selected by using sociometric measurements (Hall & Smith, 1996; Thiemann & Goldstein, 2004). Another option is to use all of the children in the targeted child's class (Kohler, et al., 2007). Additional criteria for selection include willingness to participate and regular attendance (Mcgrath, et al., 2003). Several researchers suggest that students with differing levels of social skills be included to be more similar to the child's natural environment, which is often the regular education classroom, to promote generalization (Kalyva & Avramidis, 2005; Cosgrove, 2007).

There is a major difference in the type of training peers receive in specific peer-mediated interventions. Some studies taught children a minimal number of techniques to get and keep the targeted student's attention (Lee, et al., 2007; McGrath, et al., 2003). Other studies provided peers with fairly extensive training on how to reinforce the student with disabilities (Gonzalez-Lopez & Kamps, 1997; Thiemann & Goldstien, 2004). For example, Gonzalez-Lopez and Kamps (1997) taught peers how to gain the attention of a student with autism, how to model appropriate behaviors, how to praise appropriate behaviors and how to ignore inappropriate behaviors. These peers were then involved in a social skills group intervention where they modeled, reinforced and ignored behaviors while practicing with the child with autism. In addition to extensive training in promoting positive behavior and ignoring inappropriate behavior some interventions even

offer the peers an opportunity to take part in the design of the intervention (Kalyva & Avramidis, 2005; Cosgrove, 2007; Owen-DeSchryver, Carr, Cale, & Blakeley-Smith, 2008). For example, Owen-DeSchryver, et al. (2008) started by explaining and discussing what a friend is and the importance of friendship. They next engaged the peers in activities and discussions to promote empathy for students with disabilities. The peers then discussed their own strengths and weaknesses as well as the strengths and weaknesses of the target child. Finally, they had the peers think of ways they could help, when they could help and what to do if there was a problem during play. This is a much more intense level of involvement than other strategies that simply include teaching students how to approach a child with Asperger's Disorder.

Specific Techniques in Social Skills Interventions

Group, classroom-wide, adult-mediated and peer-mediated strategies are all research-based formats in which to carry out social skills interventions. As discussed previously, the nature of each format has a unique affect on the acquisition of social skills. This section will discuss social skill intervention techniques that can be used within these formats. Many of the techniques are used in adult-mediated interventions, but several have potential for use in group, peer-mediated and classroom-wide interventions as well. There are a variety of intervention techniques that can be used within these social skills formats that have gained consensus in the literature. Table 3 provides a brief description of the techniques discussed in this section.

Social Stories/Cartooning

Social stories depict social situations that are relevant to the target child's circumstances (Myles & Simpson, 2001). Popularized by Carol Gray, these stories

contain four types of sentences: descriptive sentences that give information on settings and actions, directive statements that give information on appropriate behavior, perspective sentences that describe how other people in the story are feeling and control sentences that give analogies of similar actions (Elder, et al., 2006). Social stories have been utilized in many different intervention packages including Stop-Observe-Deliberate-Act (SODA) strategy (Bock, 2007) and have even been adapted for use on computers (Sansosti & Powell-Smith, 2008). There is some research to suggest that social stories are an effective method of increasing social behavior, but unfortunately the studies tend to suffer from the same issues concerning generalization to new situations and maintenance over extended periods of time (Sansosti & Powell-Smith, 2006).

A technique that is closely related to social stories is cartooning. Cartooning uses visual symbols and cartoon characters to address skill deficits (Myles & Simpson, 2001). Again this technique was popularized by Carol Gray and her use of Comic Strip Conversations (Myles & Simpson, 2001). The pictures give students a visual aid to show them how to handle a social situation (Elder et al., 2006).

Video Modeling

Another technique that has gained some support in the research is video modeling. Video modeling involves a student with Asperger's Disorder watching a videotape of a model engaging in a target behavior that they are to imitate (Sansosti & Powell-Smith, 2008). The ability to watch a video numerous times gives the child repeated exposure and may aid in memorization and maintenance (Sansosti & Powell-Smith, 2008). Video modeling is an effective way to teach skills to student with Asperger's Disorder. Furthermore, this technique is efficient and easy to use which

makes it appealing for use in a school setting (Sansosti & Powell-Smith, 2008; Parsons, 2006).

Scripts

The use of scripts is another social skills intervention technique that is widely used and supported by research (Weiss & Harris, 2008). Scripts can be used in a variety of ways. They can be used to role play certain interactions so that the child can get an idea of socially appropriate behavior or they can be read directly off cards and then slowly faded (Weiss & Harris, 2008). Thiemann and Goldstein (2004) have found that scripts are an effective intervention because they give students repeated exposures to appropriate behaviors that they can practice and memorize. Scripts do not necessarily have to be created by the interventionist, as Thiemann and Goldstein (2004) found that having the student help in creating the script was an effective way to increase social-communication skills.

Behavioral Interventions

Behavioral strategies have been widely used for students with autism, and they may have some implications for students with Asperger's Disorder, as well. Applied behavior analysis is a general term that means the use of behavioral techniques to bring about a positive change in behavior (Smith, 2006). Several applied behavior analysis techniques have been developed including Discrete Trials Training and Pivotal Response Training (Smith, 2006; Weiss & Harris, 2001). As mentioned previously, Discrete Trials Training, is a technique where the instructor teaches a skill and the student is allowed to

practice the skill with the instructor's support. Pivotal Response Training is used to teach pivotal behaviors (e.g. sharing and initiating play) that are believed to affect a wide range of more specific behaviors (Weiss & Harris, 2001). While these interventions are expensive and time consuming they are able to be intense and can be constructed to target specific behaviors for an individual student.

Current Practice in Schools

Given that there are a variety of viable social skills interventions available, the focus now turns to what services are being made available to students with Asperger's Disorder in schools. Based on the fact that due process hearings related to services for students with autism are the fastest growing and most expensive type of cases in special education (Etscheidt, 2003), one would have to imagine that there is room for improvement in the area of social skills interventions. However, there is limited research into what schools are actually doing to serve this population. The research that is available tends to be gathered through surveys administered to parents of students with Asperger's Disorder and autism.

Spann, Kohler and Soenksen (2003), used telephone surveys to administer a questionnaire to 45 parents of students with autism. The survey focused on four issues including the child's placement, the nature of the parent-school relationship, parent's knowledge about the IEP process and the parent's priorities and overall satisfaction with the school. Social skills were found to be the most pressing need according to the parents surveyed. Although 51% of parents believed that social skills training was the most pressing priority for their children, 44% of parents reported that schools were doing little or nothing in this area (Spann, et al., 2003). This finding has been found in similar

studies. For example, Fondacaro (2001) found that in relation to academic and behavioral interventions, social skills interventions were reported by parents to be the least successful. Upon further investigation, Fondacaro (2001) reported that the schools in his study did not seem to be offering social skills programming beyond working with a partner during class and teacher modeling.

In a survey administered to 69 parents of students with pervasive developmental disorders, Starr, Foy and Cramer (2001) found that higher functioning children with pervasive developmental disorders were not getting the quality programming to meet their social needs in comparison to training for more severe or lower functioning children with autism. Parents of higher functioning students endorsed much lower ratings of approval of the school services (Starr, et al., 2001). Star, et al. (2001) suggest that this might be due to the fact that higher functioning students may spend more time in the regular classroom where teachers have less understanding of their disorder. Another suggestion was that lower functioning students have a more apparent disability, which allows people to understand that their behavior may be due to some disorder, whereas a higher functioning student may be seen as being difficult rather than having a disability. Finally, Star, et al. (2001) warn that parents of higher functioning students may have higher expectations of the school then parents of lower functioning students. Another interesting finding came from the section of the survey where parents could write additional comments. Of the parents surveyed, 12.2% spontaneously wrote in that they were unhappy with how their child's social skills needs were being met (Starr, et al., 2001).

A similar study conducted by White, Scahill, Klin, Koenig and Volkmar (2007), surveyed 101 parents and asked about the service use patterns provided to their children with Pervasive Developmental Disorders. The researchers found that while speech, occupational therapy and physical therapy were common services provided to children with Pervasive Developmental Disorders, none of the parents surveyed reported that their child received any social skills interventions. White, et al. (2007) provided several possible reasons why there were no social skills interventions mentioned including the notion that parents may have been less familiar with social skills intervention (e.g. lunch groups) because they are more informal. However, the researchers reasoned that "Because even these less than formal interventions are mentioned in the IEP, however, it seems unlikely that parents are unaware of such services" (p. 1410).

Little (2003) conducted a large survey where she received information from 404 mothers of students with Asperger's Disorder or Nonverbal Learning Disorder. On the Likert scale survey, 78% of the mothers rated social skills training as extremely important, however, 22% stated that social skills interventions were not available (Little, 2003). Little (2003) also found that while social skills interventions are among the most important interventions needed for this population, the most readily available sources of support for students with Asperger's Disorder were medication and church.

Barriers to Social Skills Intervention Implementation

According to these studies, parents report that schools are not implementing appropriate social skills interventions for their students with autism spectrum disorders. The question that remains is why these programs are not being used. There have been few studies that actually address what types of barriers might be interfering with the

implementation of research-based social skills interventions. Some of the studies using parental perceptions suggest that one barrier to social skills interventions might be that teachers and school staff are not trained in how to work with students with Asperger's Disorder (Fish, 2006; Starr, et al., 2001). This suggests that training and availability of relevant information might be barriers to social skills interventions.

Although they are not specific to social skills interventions, there have been studies analyzing barriers to school change. Leddick (2006) attempted to increase achievement of students with disabilities by implementing a district-wide change in instruction in special education. Leddick (2006) found that there were several areas that allowed that school to implement change. These areas included: team collaboration, team efficacy, access to additional help, having a leader and setting appropriate goals (Leddick, 2006). Leddick found these components to be critical in implementing change, suggesting that the absence of these critical elements may impede change in schools.

Useem, Christman, Gold and Simon (1997) conducted a study analyzing why nine school professional development initiatives failed. They created a list of barriers that contributed to the failed initiatives. These barriers included a lack of administrative support, administration turnover, team instability (including a lack of teamwork and collaboration as well as a high turnover rate) and lack of time in the school day and school year (Useem, et al., 1997).

Ertmer (1999) found similar barriers in her study looking at barriers that impede incorporating technology into school curricula. Ertmer (1999) concluded that there seemed to be two types of barriers which she referred to as first-order and second-order barriers. First-order barriers include lack of resources including equipment, time, training

and support. Second-order barriers include teacher beliefs and resistance to change (Ertmer, 1999).

Present Study

Research has demonstrated that impairments in social interactions seem to be the most debilitating characteristic of Asperger's Disorder and high functioning autism. While schools are legally obligated to address these difficulties, schools seem to be having difficulty implementing effective programming despite some viable social skills formats and strategies. Few studies have addressed what schools are actually doing in order to address social skills interventions, and fewer still have sought to explore possible barriers to social skills intervention implementation.

The present study is a descriptive presentation and evaluation of what types of social skills interventions are being implemented in a sample of schools. It seeks to add to the knowledge in this area by addressing the basic questions of what proportion of schools are addressing social skills interventions for individuals with PDD and what type of methodology is being used. The study will also investigate what types of barriers seem to be preventing schools from implementing more research-based interventions.

Chapter 2 - Methods

Research Questions

Given the current dearth of information regarding what schools are doing in order to address the need for social skills intervention for students with Asperger's Disorder, the current study sought to answer the following questions

1. What percentage of high functioning students with an educational classification of autism and/or a mental health diagnosis of a pervasive developmental disorder have an IEP goal related to social skills training?
2. What percentage of IEPs with goals related to social skills training identify a research-based intervention methodology?
3. What formats and techniques are schools using for social skills interventions?
4. What barriers may be preventing the IEP team from using a research-based social skills training program?

Participants

The sample population consisted of 14 school districts in western New York. Overall, 33 schools were contacted to be a part of the study. Out of these 33 schools, 10 were not interested, 7 showed some initial interest but subsequently declined the opportunity and 2 schools stated that they were interested but never sent out parental consent forms. Therefore, 42.4% of schools that were contacted to be a part of the study were willing to participate, had students that met the study's criteria and were able to secure parental consent. Of the schools who were not interested one representative from a school stated that their school "did not list the methodology on the IEP" and that "most schools don't." Another school representative stated that the school was not interested

due to recent conflict between school administration and parents of students with autism. Of the schools that showed initial interest but did not participate, many of the faculty that were initially contacted, such as a principal, were interested in the study but they could not get approval from the superintendent of their school.

The school districts were able to secure parental consent from a total of 88 parents of students diagnosed with a high functioning autism spectrum disorder. Schools varied widely in the number of students that met the criteria for inclusion in this study. The criteria for inclusion in this study were that the student had to have received a mental health diagnosis of autism, Asperger's Disorder or PDD-NOS or have been classified under the New York State special education system as a student with Autism. Additionally, the student needed to have an overall cognitive ability score that was no lower than one standard deviation below the mean. As shown in Table 4, 2 schools had only 1 student who met the criteria, while 1 school had 20 students.

Participant Demographics

The age of the students in the sample ranged from 5 to 15 years of age. Table 5 shows demographics of the sample of students. As expected, there were significantly more male students than female students. Overall, 92% of the sample was made up of male students while only 8% were female. Table 5 also displays the frequency and percentage of the different grades of the students in the sample. The sample included students in all grades from Kindergarten to eighth grade. The lowest total for any grade was 3 students in kindergarten and the most students per grade was 16 participants in sixth grade. Table 6 lists the different special education classifications that were used by participant schools to classify the students. As shown in Table 6, 75% of the participants

were classified under the autism classification while 18.2% were classified as other health impaired. Several students, 5.5%, were classified under multiple disabilities due to additional medical concerns. There was one participant that was classified as having a learning disability.

Table 6 also gives the different mental health diagnoses that were cited in the student's IEPs. Out of the 88 sample IEPs, 45 of the participants (51.1%), did not have a mental health diagnosis listed in their IEP. There were only three diagnoses that appeared in the IEPs. Overall, 22.7% were diagnosed with autism and 22.7% were diagnosed with Asperger's Disorder. Only 3% of the students whose IEPs were reviewed were diagnosed with PDD-NOS.

Materials

The students' school IEPs were reviewed to assess the presence of a goal related to social skill intervention and the methodology associated to that goal. Information obtained from the IEP was recorded on the Individualized Education Plan Information Sheet (IEPIS). The IEPIS was used to record the student's diagnosis, the goals and objectives that are related to social skills interventions and the methodologies included in the IEP that address social skills impairments.

A questionnaire developed by the researcher, the Supports for Social Skills Intervention for Students on the Autistic Spectrum (SSSISAS), was used to assess the types of barriers that are preventing the school from utilizing research-based social skills interventions.

The SSSISAS is comprised of 16 Likert scale questions, with 8 barrier variables that are based on common themes and findings in school policy and intervention

research. These barrier categories include: training/knowledge, availability of professional staff, access to current research/information, perceived interventionist efficacy, communication between professionals, staff turnover, administrative support and time constraints (Fish, 2006; Leddick, 2006; Useem, Christman, Gold & Simon, 1997; White, et al., 2006). There were two questions for each of the eight barrier variables included in the scale.

Variables and Operational Definitions

The term social skills and social skills training lack universally agreed upon definitions. For the current study, the following definitions were used to define social skills, social skills training, high-functioning autism and barriers to social skills implementation.

Social skills were defined as "specific behaviors that result in positive social interactions and encompass both verbal and non-verbal behaviors necessary for effective interpersonal communication" (Rao, Beidel, & Murray, 2007). The social skills affected in Asperger's Disorder and high functioning autism include: experience sharing, maintenance of relationships, perspective taking/empathy, misreading verbal/nonverbal social cues and the ability to understand the meaning and depth of emotional expressions.

Social skills interventions included any methodology that has been recognized in current research on social skills interventions for students with a diagnosis on the autism spectrum. Acceptable interventions were organized by the formats and/or techniques that they employed. Formats were defined as the way in which the social skills intervention is presented to the child, more specifically, who was the chief agent of behavior change. The formats included group counseling or teaching, classroom-wide interventions, adult-

mediated and peer-mediated interventions. Research-based techniques that are often used in social skills interventions for students with Asperger's Disorder and autism were also explored. These specific techniques can be used within the different formats listed above. The techniques included in the study were social stories/cartooning, scripts, video modeling and applied behavior analysis.

Students were included if their IEP included a record of an educational classification of autism and/or the DSM-IV diagnosis of Asperger's Disorder or autism. To be included in the study, student's overall cognitive functioning needed to be in the average range or above. This means that the student's full scale intelligence quotient needed to be no lower than one standard deviation below the mean (standard score of 85).

Barriers to social skills training implementation were defined as variables that hinder or prevent the process of including some social skills intervention on the IEP. For this study, barriers were defined as the school's score on the Supports for Social Skills Intervention for Students on the Autistic Spectrum (SSSISAS)

Procedure

Research assistants were trained in order to more efficiently collect data from the various participant schools. The research assistants met with the researcher to discuss the procedure of the study and to receive training on social skills interventions commonly used for students with autism. During this training session, the researcher showed the research assistants several IEPs to demonstrate where they might find the necessary information and how to use the IEPIS.

The researcher or research assistant visited the participant schools and reviewed the IEPs of students who have been identified as having an educational diagnosis of

autism and/or a mental health diagnosis of Asperger's Disorder or autistic disorder. The researcher recorded several components of the IEP and recorded relevant information on the IEPIS. First the researcher reviewed the IEPs goals and recorded whether or not the IEP contained a goal related to social skills instruction. If the IEP had a goal related to social skills, the researcher then reviewed the IEP for methods or services directly related to the social skills instructional goal. The researcher had categorized social skills methodologies based on common themes in research on social skills intervention. The categories included social skill intervention formats such as group counseling/teaching, classroom wide interventions, adult-mediated interventions and peer-mediated interventions. The researcher also reviewed the methodologies on the IEP to look for any specific intervention techniques including social stories, cartooning, scripts, video modeling and behavioral interventions.

The researcher gave the SSSISAS to the IEP Team Chairperson to fill out and return in order to assess the barriers that the school was facing regarding the implementation of social skills interventions. All participating schools completed and returned the SSSISAS.

Analysis

To analyze the collected data, a frequency count was used to assess what percentage of IEPs for students with a diagnosis on the autism spectrum contained a goal related to improving social skills. Of those IEPs that did contain a social skills goal another frequency count was be completed to identify the types of interventions being used. The scores from the SSSISAS were also analyzed to see which barriers seem to be

most prevalent in preventing schools from implementing more desirable social skills interventions.

Additional information gathered during the process of IEP review was also analyzed. For example, individual IEPs were highlighted and discussed to examine current trends, variation amongst schools and within school as well as outliers or uncommon findings. Information gained from communication with various school professionals was also gathered and analyzed.

Chapter 3 - Results

IEP Social Skills Goal

Table 7 shows information related to the first research question which asked: What percentage of high functioning students with an educational classification of autism and/or a mental health diagnosis of a pervasive developmental disorder have an IEP goal related to social skills training? As shown in Table 7, 8% of the IEPs reviewed did not contain a goal related to social skills. This means that 92% of the IEPs that were reviewed did contain a goal related to improving social skills. Many schools used a similar format for organizing the goal section of the IEP. Goals were typically organized into categories by service provider. For example, there may be counseling, speech and resource room goal sections. Goals related to social skills were commonly found under the counseling or speech subheadings in the measureable goals section of the IEPs.

Table 4 shows information concerning the number of goals each school had and their overall average number of social skills goals per IEP. According to these results, most IEPs for students with a high functioning autism spectrum disorder had between one and three goals for social skills improvements.

Formats and Techniques on the IEP

The second research question asked: What percentage of IEPs with a goal related to social skills training identify a research-based intervention methodology? As shown in Table 7, only 1 IEP (or 1.1% of the IEPs reviewed) contained a goal related to social skills improvement, but did not list a social skills intervention format. For this particular IEP, the goal was for the student to "demonstrate conversational skills by appropriately introducing a variety of topics in small group setting with peers and adults, by turn taking

during conversations, asking appropriate questions in a conversation and maintaining a topic introduced by others in a five minute conversation." While this goal does seem to be targeting several social skills, the IEP did not include any methodology for how the school was going to intervene or educate the student to accomplish this goal.

Table 7 also shows that 54 of the IEPs, 61.4% of the sample, had a goal related to social skills and contained a format for how they were going to approach the goal but did not list any specific research-based social skills intervention techniques. For example, one IEP had a goal that stated that the student "will use appropriate social skills (especially conversational skills and appropriate body language) learned in counseling to maintain peer relationships." This goal is addressing some important social skills and the school decided to use two different formats to approach this goal (both group counseling and adult mediated, one-on-one counseling;) however, the school did not specifically state what types of interventions would be used within these formats.

Finally, Table 7 shows that 26 of the IEPs, 29.5% of the sample, had a goal related to improving social skills, listed a format for approaching the goal and included a specific evidence-based intervention technique. For example, one IEP had a goal that the student would "be able to predict what another person may be thinking and feeling based on their behaviors and modify their own behavior to be more appropriate for the situation." To approach this goal the school decided to use adult mediated and group speech formats and then listed several specific intervention techniques to accomplish this goal including the use of social stories, scripts and video modeling. Of the 26 IEPs with an evidence-based intervention technique, 15 had 1 technique listed, 10 had 2 listed and 1 IEP had 3 techniques listed.

Table 8 shows how the presence of social skills goals and intervention techniques varied by grade. As shown in table 8, there were no students in grades kindergarten through fourth grade whose IEPs lacked a goal related to social skills. Similalry, there seemed to less students in these higher grade levels whose IEPs had a evidence-based social skills intervention technique listed on the IEP.

Types of Formats Listed in the IEPs

Table 9 lists the type of social skills formats included in the study as well as the number of IEPs which utilized that methodology. Adult-mediated and group formats were cited in considerably more IEPs than were classroom-wide interventions or peer-mediated interventions. Due to the large number of students who were receiving group and adult-mediated services these categories were separated by whether they were implemented by a counselor or speech therapist. Schools seemed to vary in who was responsible for providing social skills intervention to students with high functioning autism spectrum disorders. Over half of the students in the sample, 62.5%, were receiving social skills interventions in a group setting facilitated by a speech therapist. Similarly, 44.3% of the sample was receiving group counseling to address social skills deficits. Adult-mediated, one-on-one counseling services were being given to 51.1% of the sample while 42% were receiving one-on-one services from a speech therapist to address social skills goals. Peer-mediated methodologies only occurred in 2 of the IEPs that were reviewed (2.3% of the sample) and classroom-wide interventions were only listed in 1 of the IEPs reviewed or 1.1% of the IEPs.

Types of Techniques Listed in the IEPs

Table 10 lists the different types of social skill intervention techniques that were included in the study and shows how many IEPs included each technique. This table shows that techniques such as social stories were included in far more IEPs than techniques such as video modeling, scripts or cartooning. Of the IEPs that were reviewed, 27.3% listed social stories as a technique that would be used to address social skills deficits while only 4.5% of the IEPs listed cartooning, 2.3% listed video modeling, 8% listed scripts as an intervention technique and 3.4% included an applied behavior analysis technique such as discrete trials training.

Variables Affecting Social Skills Intervention Implementation

Table 11 shows information related to the results of the SSSISAS survey that was completed by the IEP Team chairperson at each of the 14 participating schools to assess what types of supports or barriers the school may be facing relating to implementing social skills interventions. The SSSISAS uses a 6- point Likert-style format from strongly disagree to strongly agree, (see Appendix A). Each variable category shown in Table 10 consists of 2 of these Likert-style questions, with a maximum available score for each variable of 12, and a minimum score of 2. A mean score of 8 on the table indicates that the IEP Team chair somewhat agreed that this variable supported the creation of quality interventions. A mean of 6 indicates that the IEP Team chairs somewhat disagreed that he or she had the support.

Overall, the IEP Team chairs felt that most of these items were areas of support for social skill intervention implementation. The biggest area of concern for schools in the study seemed to be that they do not have enough time in the school day or school year

to focus on implementing social skills interventions. The mean score of 5.36 for the Time variable indicates that on average, IEP Team chairs somewhat agreed that there never seems to be enough time in a school day or year to address all of the concerns that the IEP team has regarding working with students diagnosed with a high functioning autism spectrum disorder.

All but 3 of the IEP Team chairs felt that their teams had sufficient training in the area of autism and social skills intervention implementation. Table 12 also shows that all 14 of the IEP Team chairs felt that their schools had at least one staff member who has expertise in the area of interventions for students with autism and that they had someone outside of the school that they could contact for consultation. One IEP Team chair felt that communication within the school was a barrier to social skill intervention implementation, while another school scored a 7, indicating some level of concern in this area. Only one school felt that staff turnover was a barrier. All but 1 IEP Team chair felt that their administrative leadership was a support for them and all 14 schools felt that they could establish quality social skills interventions for their students. Not having enough time in the school day and school year seemed to be the biggest concern for IEP Team chairs. Out of the 14 schools, 12 IEP Team chairs felt that lack of time was a barrier to implementing social skills interventions.

It is interesting to note that one particular IEP Team chair tended to have ratings that were much lower than the other schools. As shown on Table 12, School 7 often had the lowest ratings and rated 4 of the categories as barriers. Their overall score of 49 was well below the other schools' overall scores. School 7 also did not have any IEPs that contained an evidence-based intervention technique. While School 7's IEP team chair's

ratings seemed to relate to this school's overall ability to create IEPs with evidence-based intervention techniques, overall, a school's score on the SSSISAS did not relate to the school's proportion of IEPs with evidence-based intervention techniques.

Chapter 4 - Discussion

These findings show several trends in how social skills interventions are being included in IEPs for students diagnosed with a high functioning autism spectrum disorder. Most schools are recognizing that social skills are an area of concern for students with autism, as 92% of the IEPs included a goal related to social skills. Similarly, schools seem to recognize the need for an intervention, as 91% of schools included an intervention format to address social skills intervention.

Some formats are being used more than others. Using a group or adult mediated interventions seemed to be the most popular, while considerably fewer IEPs reported using a classroom wide or peer mediated intervention. While it is possible that many classroom wide interventions may not make it onto an IEP, it was concerning that these formats only appeared in a few IEPs. Peer mediated and classroom wide formats are important because of the possibility for students to learn social skills in a more natural environment, which should make it easier for the child to generalize what he has learned to other settings. Classroom-wide and peer mediated interventions take place in the regular education environment and allow the child to work on skills while interacting with and learning from peers. While social skills groups also allow students to work with their peers, IEPs did not state the characteristics of the members so it was not clear if the groups contained children who might serve as models of appropriate social skills.

Presently, schools tend to favor a model where students are pulled from the regular classroom to address social skills. While it is encouraging that these students are receiving services it seems as though formats where the student would have guided practice in a natural setting are not frequently being utilized in schools.

While most IEPs contained a goal related to social skills and most also listed a format to address the social skills, only 26 of the IEPs or 29.5% contained an evidence-based intervention technique. While using social stories as an intervention technique was found in 27% of the IEPs, other techniques such as cartooning, using scripts, applied behavior analysis and video modeling were used considerably less often. The higher frequency of using social stories is a positive trend and is evidence of the success of Carol Gray's Social Stories. The higher frequency use of social stories is encouraging, while the low frequency of the other techniques is concerning.

Many IEPs listed behavior plans but did not specify what the plans were addressing. Only three IEPs listed an applied behavior analysis technique to address social skills. One of these students was receiving applied behavior analysis to work on using eye contact, one was receiving applied behavior analysis to work on responding to questions, and the third was receiving discrete trial training to work on different components of a conversation. Applied behavior analysis is a common intervention technique for students with lower functioning autism spectrum disorder, as it has been shown to be an effective way to teach desired behaviors through contingency reinforcement. Researchers of interventions for higher functioning autism spectrum disorders do not utilize this technique as often, so it was not surprising that only a few IEPs contained applied behavior analysis.

Video modeling is an efficient way of teaching appropriate behaviors as children can watch the behavior multiple times. It is not clear why schools are not using many of these techniques, especially since results from the SSSISAS state the IEP Team chairs feel as though the team has training and knowledge in social skills intervention

implementation and that there are staff members on hand who have expertise in the area. Perhaps more training in the area of social skills interventions is necessary or maybe there has not been enough publicity for studies investigating a variety of social skills intervention techniques.

There is some variation in the quality of the IEPs in the study. Some IEPs had social skill goals as well as evidence-based intervention methods and techniques while others did not. This variation has a normal curve-like quality. 9.1% of IEPs fall in the bottom part of the curve where there is either no goal listed or there is no format for intervention, a majority, 61.4%, of the IEPs are of average quality and have a goal and a format listed but lack a specific research based technique and 29.5% fall towards the top of the curve and are the gold standard examples where there is a goal, a format and an evidence-based intervention technique listed on the student's IEP. One could argue that this is not a surprising result and that many school services probably vary in a way that resembles a normal curve. While this may be true, it seems as though this normal curve has a negative skew. Listing a goal, a format and an evidence-based technique should be the standard for accepted practice on all IEPs. Looking at the data this way, only 29.5% of the IEPs are appropriate while 70.5% of the IEPs are lacking in quality and are below the standard of having an evidence-based technique listed with a social skills goal and format. Finding 70.5% of the curve in the below average range is a considerable negative skew. Interventions should be evidence-based; and perhaps interventions are not appropriate unless their use can be validated and confirmed by research. The schools in this study are presently creating more mediocre and low quality IEPs for students with a diagnosis on the autism spectrum of disorders than high quality IEPs.

Yet results from the SSSISAS suggest that school personnel in the sample districts are feeling that they have strategies and tools to help them meet the needs of students diagnosed with a high functioning autism spectrum disorder. Overall, the IEP Team chairs in this study felt that there were a lot of positive supports in their schools to help create and sustain quality social skills interventions for students with diagnoses on the autism spectrum. Most schools felt that they had administrative support and most of the schools felt that there was good communication between IEP team members and parents. While some of the questionnaires reflect perceptions of ample training in the area of social skills interventions, others reflected less training in this area; however, most of the schools' IEP team chairs felt that they had access to a staff member who had knowledge of high functioning autism spectrum disorders or that they could find assistance if they needed it. The only category that seemed to be a barrier for most of the schools was a lack of time in the school day and school year. It is possible that this lack of time could be a large contributing factor to the low frequency of IEPs including an evidence-based intervention technique. Most IEP Team chairs felt that they had staff and knowledge resources, but if school staff members don't feel there is enough time to implement interventions, this training and knowledge may be being set aside for other priorities.

While the results of the SSSISAS were very positive, the scores lacked a wide enough range to determine if there were any relationships between perceived supports and barriers, and other variables such as percentage of IEPs with evidence-based intervention techniques. Perhaps the SSSISAS needs to ask more specific questions or

there may be other variables that are affecting how schools implement social skills interventions.

In addition to these findings, this study brought some interesting observations to light. First, many schools seemed to be using a similar organizational scheme for their IEPs where the goal section was organized by which support services the child was receiving. For example, many IEPs were divided into counseling, speech and language, resource room or occupational therapy sections. As stated previously, the social skills goals seemed to usually be found under the counseling or speech subheadings of the goals section. This reflects the idea that social skills interventions are usually a pull out service and are something that takes place outside of regular education. This disconnect between social skills interventions and the regular education classroom is in contrast to social skills intervention research where contact with multiple peers in a natural setting seems to be a key to improving functioning.

The results also demonstrated that the presence of evidence-based intervention techniques may vary by grade. In the current study, all of the IEPs for students in grades kindergarten through grade four contained a social skills goal, while there were some IEPs in grades five through eight that lacked social skills goals. Students in grades five through eight also tended to have fewer evidence –based intervention techniques listed on their IEPs. This trend is somewhat concerning as older students with autism may be struggling to grasp more complex social skills in these higher grade levels.

The study also highlights a lack of consistency between schools concerning who is the primary resource when it comes to social skills interventions. Schools varied in whether social skills were addressed by a speech therapist or a counselor, which could

either have been a school counselor or a school psychologist. While 44.3% of the IEPs listed group counseling, 62.5% listed speech groups and while 51.1% of the IEPs included counseling for social skills interventions, 42% included speech and language services. While speech and language are important components of social skills, many IEPs only had the speech teacher providing social skills interventions.

There are several cognitive and behavioral aspects to social skills that may be better handled by a counselor or a psychologist. A speech and language pathologist from one of the participating districts stated that she did not feel comfortable being the sole provider for social skills interventions, as she had not received training in the more behavioral components of social skills acquisition. It is not clear how schools decide whether to use a counselor or a speech and language professional or both for social skills interventions. Perhaps part of the reason for using speech teachers is that New York State requires speech services for students classified with autism. Part 200 of the Regulations of the Commissioner of Education states that "instructional services shall be provided to meet the individual language needs of a student with autism for a minimum of 30 minutes daily in groups not to exceed two, or 60 minutes daily in groups not to exceed six." This would make it more convenient for schools to have the speech teacher address speech concerns as well as social skill concerns since they have to be seen by the speech teacher for daily instruction. This speech requirement seems to be affecting schools in another way as well. Several schools admitted that they had listed their students under the heading of "Other Health Impaired" to avoid this requirement for students diagnosed with autism who do not have any concerns with their speech.

Another interesting finding was that an IEP Team chair's perception of support and resources for working with students with autism spectrum disorders did not seem to correlate to creating IEPs that had specific, evidence-based intervention formats or techniques. For example, while School 7 did have lower scores on the SSSISAS as well as no IEPs that had an evidence-based intervention technique, School 8, which also had no IEPs with listed evidence-based techniques, had one of the highest overall scores on the SSSISAS. As stated previously, scores on the SSSISAS tended to lack range necessary to see a correlation between supports and the use of evidence-based intervention techniques. Most schools tended to have high scores on this measure, as 13 out of the 14 schools fell within 20 points of each other out of a possible range of 0-96. The fact that IEP Team chair ratings of the supports and barriers for social skills interventions did not seem to be related to the school rate of creating high quality IEPs is still an interesting finding that may need further investigation.

Research Using Parental Data

The current study was unique in that it examined IEPs to gain information concerning the types of social skills interventions being used in schools for students diagnosed with a high functioning autism spectrum disorder. Previous studies have used parent interviews to measure the types of services available to this population of students. The studies that utilized parental interviews yielded fairly consistent results and suggested that school districts were not providing quality services targeting social skills interventions for students with high functioning autism spectrum disorders (Fondacaro, (2001; Little, 2003 & White, et al., 2007).

While only 29.5% of the IEPs in the present study listed a specific evidence-based social skill intervention technique, 91% listed at least a format for addressing a social skills goal. This shows that there is a discrepancy between parent perspectives of the types of interventions being used and what is listed on IEPs in the current study. While some studies showed that none of the parents reported the use of social skills interventions, the current study showed that 29.5% had high quality IEPs with social skills goals listed, a format to approach the goal, and an evidence-based social skills intervention technique.

There are a variety of possible reasons for the discrepancy between previous studies and the current study. It is possible that schools are making progress in how they provide services to students with autism. There has been an increased interest in, and awareness of, autism in recent years and perhaps schools have begun to implement more research-based interventions for these students. Several of the schools in the study had autism specialists or autism teams that were responsible for providing consultation to school staff and parents. It is also possible that the discrepancy is in part due to the different procedures that the past and current studies used to gather data. The previous studies were all using parent data, while the present study looked at school data on IEPs. Parents and schools may have different expectations, interpret information differently or have access to different information.

The current study did not look at treatment integrity. It is possible that schools may be creating good interventions on IEPs but are not carrying out the interventions consistently. Perhaps parents are sensing that things that are supposed to be happening are not taking place as they are listed on the IEP. Another explanation could be related to

communication between schools and parents or parental involvement with the school. It is possible that schools may have good information listed on IEPs but parents are not aware or have not been informed of these interventions. Whatever the reason, the results of the current study are more optimistic than previous research using parental surveys. While 29.5% is not an overwhelming success rate, it is considerably different from the results from parent surveys.

Furthermore, while Spann, Kohler and Soenksen (2003), found that 44% of parents of students with a diagnosis of autism felt that schools were doing little or nothing in the area of social skills interventions, schools in this research study seem to be more optimistic in their efforts and ability to provide social skills interventions. All of the schools in the present study felt that they had the ability to provide effective services and all 14 of the schools felt that parents were satisfied with IEP team's efforts to improve social skills for students. The difference between IEP Team chair views of their ability and success in creating IEPs and the results from parental surveys in other studies is striking. The difference in opinions could be for any of the reasons listed above but it is also possible that schools and parents are using the two different analysis options presented above. Schools may feel that listing the formats on the IEP is an appropriate practice while parents may be expecting a more specific evidence-based intervention techniques.

Limitations

The study has several limitations that could have an effect on the validity or the generalizability of the conclusions. First, while the sample of 88 IEPs was a fairly robust number, the sample of only 14 school districts was fairly small. Another limitation

concerning the sample population was that the sample was composed of the 14 schools out of the 33 schools who were contacted (a 42% response rate) that agreed to participate. The schools were therefore not a random sample but instead made up of schools that were willing to participate. It is possible that the districts that did not choose to participate could have fewer social skills interventions in place. The sample schools were also geographically similar in that they are all schools in Western New York. This may limit the findings and conclusions to being relevant only to schools in New York. As stated previously, New York state's daily speech requirement for students classified under the autism classification seems to be influencing practice in schools.

The procedure for this study only looked at what types of interventions were listed on the student's IEP. While this procedure gave the researcher a consistent and reliable legal document to review, there may have been more or less going on than what was listed on the IEP. Personnel at several schools stated that they were providing additional techniques that were not listed on the IEP. For example, at one school, the Autism Specialist discussed several techniques that were provided by the district but that were not listed on IEPs, including video-modeling and peer-mediated designs. While the study by Etscheidt (2002) suggested that schools should include these methodologies in the IEP, some in the sample do not seem to be including all of their social skills intervention techniques in the IEPs. The reason for not including these techniques is not clear. Whether it be lack of knowledge of relevant case law, a desire for professionals to utilize a variety of interventions at their discretion, or a desire to try a variety of approaches before deciding on one method to use and include in the IEP, schools don't seem to be including all of their social skills techniques in individual IEPs.

Additionally, the current study did not look into the quality of the IEP social skills goals or the treatment integrity. IEP goals vary in their quality. The present study did not attempt to exclude social skills goals that were not of high quality or that were not measurable. Even though the IEP is a legal contract that is supposed to show what services and accommodations the school is going to give a student, it is possible that the school would not be faithful to that contract.

The current study also used several research assistants to help collect IEP data. While the assistants were training on using the measure, the internal validity could have been stronger if the data had all been collected by one person. Using different raters could have had an impact on the validity of the study.

Future Research

As an exploratory, descriptive study, these findings are a good starting point for future studies. As stated previously, the current study did not look at treatment integrity. Further research should look at how schools are using the techniques and if the techniques are being used as they were intended. While schools should be fulfilling what is on the IEP, research into treatment fidelity would be a valuable next step in looking into what services schools are using for social skills interventions for students with a diagnosis on the autism spectrum of disorders.

Despite the high ratings on the SSSISAS, the measure may be of some use as a self-evaluation tool for schools when looking at what areas may be interfering with their schools social skills intervention implementation. As stated previously, it may be important to make some of the questions more specific and more objective. For example, instead of the statement, "The IEP team has frequent communication with the parents of

students with autism/Asperger's Disorder," a more objective question might use a different format and ask schools to select how often they contact parents. Alternatively the measure might instead include an item stating "A representative from the IEP team communicates with the parents of students with autism/Asperger's Disorder at least once every month." It may also be beneficial to administer the SSSISAS to other professionals in the school who might have more contact with students with autism. The SSSISAS could be given to service providers who are responsible for providing social skills intervention or to classroom teachers who have a student with autism in their class.

Similarly, future research should also investigate what types of services schools are using that are not included on the IEP. As stated previously, personnel in several schools discussed services that they regularly utilize that are not listed on IEPs. These services were not included in the present study as our focus was narrower and only included information on the IEP. Research could focus on staff perceptions of what types of interventions are being used.

The current study provided a more optimistic picture of social skills intervention implementation than previous research which utilized parental surveys. Research needs to be conducted analyzing the differences in the perspectives of parents and school personnel. Several possible reasons for this discrepancy have been hypothesized above but research is needed to explore why these two parties have such different levels of appreciation for the work that the schools are presently doing.

This study found that responsibility for implementing social skills interventions seems to be inconsistent from school to school or even within schools. Future research could investigate who the school views as responsible for social skills interventions. It is

important to analyze training programs and goals of these professions to see who may be more qualified to handle social skills interventions or if both professions should handle different components of social skills.

Future research could also investigate the different barrier variables that that were discussed in this study. While the IEP Team chairs in this study seemed to be very optimistic in regards to the supports that they had for implementing interventions, some indicated that staff training, lack of time and communication between staff and parents seemed to be barriers to implementing social skills interventions. Interventions that target the different barriers to implementing social skills interventions and studies evaluating the effectiveness of these interventions would also be helpful for schools.

Conclusions

While schools seem to recognize the need for social skills interventions for students with a diagnosis on the autism spectrum of disorders, only 29.5% of the schools listed evidence-based intervention techniques on IEPs as ways of addressing social skills deficits. While these results of this study do not suggest that the status of social skills interventions in schools are ideal, these results were considerably more positive than results and impressions from previous research into social skills interventions based on parent interviews. School IEP Team chairs were very optimistic in their abilities to create social skills interventions while parents in previous studies felt very negative towards the schools ability to implement social skills interventions. Some intervention formats are being used regularly in schools such as adult mediated and group counseling and speech services. While it is good that schools are recognizing the need for an intervention for social skills, it is important for schools not to become comfortable with

just giving a student pull-out services to address social skills, especially when research suggests that interventions that take place in a more natural environment with the child's peers could enhance the child's ability to generalize social skills to other situations.

There is a lack of consistency in schools concerning who is responsible for implementing social skills interventions. Some schools offer speech services, some have the school counselor or psychologist conducting social skills interventions and some schools use both speech therapists and counseling. While 29.5% of the IEPs contained a social skills technique, there does not seem to be much variety in the techniques being offered. Many schools are only offering social stories as a technique, while few schools are using other techniques such as cartooning, video modeling or applied behavior analysis.

It should be seen as a positive finding that school district administrators feel as though they can create positive interventions for students with autism, as this is consistent with current research that suggests that schools can, in fact, implement effective social skills interventions. The next step is for schools to explore the research on social skills interventions for students with a high functioning autism spectrum disorders and to start using different evidence-based intervention techniques until they determine what is effective for each individual child. As interventions for children with learning disabilities are beginning to become more evidence-based, schools are beginning to use data to make decisions about the quality and fit of interventions for students as individuals. A similar approach to designing and evaluating social skills interventions for students with high functioning autism spectrum disorders would be much more effective than the current practice. Schools and professionals should keep in mind that just as students with a

reading disability struggle in reading and struggle in school, students with autism struggle with social skills and struggle in school.

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Appendix A

Supports for Social Skills Intervention for Students on the Autistic Spectrum (SSSISAS)

Please use the following key to endorse your response for each item

Strongly Disagree -1
Disagree -2
Somewhat Disagree -3
Somewhat Agree -4
Agree -5
Strongly Agree -6

1. School personnel have received specific training in the area of autism/Asperger's Disorder social skills development.

1 2 3 4 5 6

2. The school has manuals available for social skills interventions specifically designed for use with students with autism/Asperger's Disorder.

1 2 3 4 5 6

3. The school has a staff member who is knowledgeable about autism.

1 2 3 4 5 6

4. There is an IEP team member who stays current on recent social skills interventions for students with autism/Asperger's Disorder.

1 2 3 4 5 6

5. The IEP team has easy access to current research in social skills interventions.

1 2 3 4 5 6

6. IEP team members are able to attend or sponsor training sessions on autism/Asperger's Disorder.

1 2 3 4 5 6

7. School has access to a consultant with experience with high-functioning autistic spectrum disorders.

1 2 3 4 5 6

8. The IEP team thinks that they can make a difference and improve the social skills of students with autism/Asperger's Disorder.

1 2 3 4 5 6

9. Parents of students with autism are satisfied with the IEP Team's efforts to improve social skills for students with autism/Asperger's Disorder.

1 2 3 4 5 6

10. The IEP team has frequent contact to discuss and review progress towards IEP goals of students with autism/Asperger's Disorder.

1 2 3 4 5 6

11. The IEP team has frequent communication with the parents of students with autism/Asperger's Disorder.

1 2 3 4 5 6

12. At your school, there seems to be a lot of turnover in positions related to special education.

1 2 3 4 5 6

13. At your school, there seems to be a lot of turnover in school administration.

1 2 3 4 5 6

14. The administration readily supports initiatives to improve special education.

1 2 3 4 5 6

15. School administrators are seen as leaders for making change in the school.

1 2 3 4 5 6

16. There never seems to be enough time in a school day to address all of the concerns that the IEP team has regarding working with students with autism/Asperger's Disorder.

1 2 3 4 5 6

17. There never seems to be enough time in a school year to address all of the concerns that the IEP team has regarding working with students with autism/Asperger's Disorder.

1 2 3 4 5 6

Appendix B

Individualized Education Plan Information Sheet

ID # __________________

Educational Diagnosis: ____

____

DSM-IV Diagnosis: ____

____

Is there a goal related to social skills?
No Yes #_____________

Goals and objectives related to social skills

Goal # 1:

____

____

Objectives: ____

____

____

Goal # 2:

____

____

Objectives: ____

____

____

Goal # 3:

____

____

Objectives: ____

____

____

Goal # 4:

____

____

Objectives: ____

____

____

Is there a listed methodology that addresses the social skills goal/goals?
No Yes #______________

What is the format of the social skills intervention methodology?

Group Design:

____

____

____

Classroom-wide Intervention:

____

____

____

Adult Mediated Design:

____

____

____

Peer-mediated Design:

____

____

____

Mixed:

____

____

____

Other:

____

____

____

Specific Techniques Used
Social Stories/Cartooning:

____

____

____

Scripts:

___

___

___

Behavioral Technique:

___

___

___

Video Modeling:

___

___

___

Other:

___

___

___

Appendix C

Informed Consent Form

Alfred University
Division of School Psychology
Social Skills Interventions for Students with Asperger's Disorder:
A Review of Individualized Education Programs
Daniel Woodruff

You are invited to participate in a study of social skills interventions for students with Asperger's Disorder/high functioning autism. We hope to learn what types of methodologies schools are using to increase social skills for students with Asperger's Disorder/high functioning autism.

You were selected as a possible participant in this study because you are the parent/guardian of a student who has been diagnosed with Asperger's Disorder/high functioning autism.

If you decide to participate, we will be reviewing your child's Individualized Education Plan in order to see what types of social skills interventions are being utilized.

There are no anticipated risks of participating in this study. Although, there is a possibility that you will feel uncomfortable about letting the researcher review the confidential information contained in the Individualized Education Plan.

Benefits of participation include the knowledge that your involvement will contribute to the collection and dissemination of information about social skills interventions for students with Asperger's Disorder/high functioning autism, and that information may make it possible to improve those services and influence policy and training decisions for the future.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission.

Your decision whether or not to participate will not prejudice your future relation with Alfred University or __________________________ District.

If you decide to participate, you are free to discontinue participation at any time without prejudice.

If you have any questions, please do not hesitate to contact us. If you have any additional questions later, please contact Daniel Woodruff at dw1@alfred.edu who will be happy to answer them.
You will be offered a copy of this form to keep.

You are making a decision whether or not to participate. Your signature indicates that you have
read the information provided above and have decided to participate. You may withdraw at any
time without penalty or loss of benefits to which you may be entitled after signing this form
should you choose to discontinue participation in this study.

_____________________________________ __________________________

Signature of Parent/Legal Guardian Date

Table 1

Catagories of Social Skills Interventions for Students with Asperger's Syndrome

Format	Weiss & Harris (2001)	Rogers (2000)	Lord & McGee (2001)	Scattone (2007)
Peer-mediated	X	X	X	
Adult-mediated	X	X	X	
Social Skills Groups		X		
Classroom-Wide Interventions	X			
Techniques				
Scripts	X		X	X
Behavioral Techniques			X	X
Social Stories			X	X
Video Modeling				X

Table 2

Formats for Social Skills Interventions

Format of Delivery	Description
Group interventions	Training occurs in a group setting with disabled or non-disabled peers
Classroom-wide interventions	Training is targeted at all students in the classroom regardless of disability status
Adult-mediated interventions	Training takes place outside of regular classroom and includes instruction from an adult interventionist
Peer-mediated interventions	Peers of the child with Asperger's Syndrome work with or play with the child in order to model and teach social skills. The peers may be trained in how to encourage and reward a targeted behavior.

Table 3

Social Skills Intervention Techniques

Technique	Description
Social Stories	Stories that depict social situations that are to serve as a model for the student with Asperger's Syndrome.
Cartooning	The use of visual symbols and cartoon characters to address and model how to act in a social situation.
Video Modeling	The use of video models to show student's with Asperger's Syndrome how to act in specific social situations.
Scripts	Written document containing an appropriate way to negotiate a social situation. Can be used to practice or actually read in real social situations until memorized.
Behavioral Interventions	Strategies that employ behavioral techniques to change the student's behavior. These may include Pivotal Response Training, or other applied behavior analysis techniques.

Table 4

Number of IEPs Reviewed By School

	Number of IEPs	Number of Goals	Average Goals per IEP
School 1	2	5	2.5
School 2	11	28	2.5
School 3	4	10	2.5
School 4	3	5	1.7
School 5	16	20	1.3
School 6	6	11	1.8
School 7	2	7	3.5
School 8	1	2	2
School 9	2	4	2
School 10	7	11	1.6
School 11	20	35	1.8
School 12	2	4	2
School 13	11	17	1.5
School 14	1	4	4
Total	88		

Table 5

Demographics of the Students in the Sample

Characteristic		Frequency	Percentage
Gender			
	Male	81	92.0
	Female	7	8.0
Grade Level			
	Kindergarten	3	3.4
	1st Grade	12	13.6
	2nd Grade	8	9.1
	3rd Grade	11	12.5
	4th Grade	10	11.4
	5th Grade	13	14.8
	6th Grade	16	18.2
	7th Grade	10	11.4
	8th Grade	5	5.7
	Total	88	100.0

Table 6

Classification or Diagnoses of Students in the Sample

Classification System	Classification/Diagnosis	Frequency	Percentage
Special Education Classification			
	Autism	66	75.0
	OHI	16	18.2
	Multiple	5	5.7
	Learning Disability	1	1.1
Mental Health Diagnosis			
	Autism	20	22.7
	Asperger's	20	22.7
	PDDNOS	3	3.4
	Total	43	48.9
	No Diagnosis Listed	45	51.1

Table 7

Percentage of IEPs with Social Skills Goals, Formats and Techniques

Category	Number of IEPs	Overall Percentage of IEPs sampled
No goal for social skills on the IEP	7	8.0
Goal present but with no social skills Intervention Format	1	1.1
Goal and Format present but with no social skills Intervention technique	54	61.4
Goal, format and technique present	26	29.5

Table 8

Presence of Social Skills Goals and Intervention Techniques by Grade Level

	Number of Participant IEPs	No Goal for Social Skills on the IEP	Goal with no Intervention Technique	Goal with Intervention Technique
Kindergarten	3	0	2	1
First Grade	12	0	8	4
Second Grade	8	0	4	4
Third Grade	11	0	6	5
Fourth Grade	10	0	5	5
Fifth Grade	13	3	9	1
Sixth Grade	16	2	8	2
Seventh Grade	10	1	6	3
Eighth Grade	5	1	3	1
Total	88	7		

Table 9

Social Skill Intervention Formats Utilized by the Sample IEPs

Methodology	Frequency	Percentage
Group (Counseling)	39	44.3
Group (Speech)	55	62.5
Classroom-Wide	1	1.1
Adult-Mediated (Counseling)	45	51.1
Adult-Mediated (Speech)	37	42.0
Peer-Mediated	2	2.3

Table 10

Social Skill Intervention Techniques Utilized by the Sample IEPs

Technique	Number of Participants	Percentage
Social Stories	24	27.3
Cartooning	4	4.5
Scripts	7	8.0
Applied Behavior Analysis Technique	3	3.4
Video Modeling	2	2.3

Table 11

Descriptive Data for the SSSISAS Results

Support Category from SSSISAS	Lowest Observed Score	Highest Observed Score	Mean	Standard Deviation
Training & Knowledge	5	11	8.57	1.83
Professional Staff Members	9	12	10.92	1.14
Access to Consultation	8	12	10.35	1.34
Efficacy	8	12	10.07	1.27
Communication	4	12	9.86	2.35
Staff Turnover	6	12	9.64	1.78
Administrative Leadership	4	12	10.21	2.12
Time	2	10	5.36	2.17

Table 12

Results for the SSSISAS

	Training	Expert Staff	Access to Consultant	Efficacy	Comm.	Staff Turnover	Admin. Leadership	Time	Overall
School 1	8	9	10	9	7	10	12	6	71
School 2	10	12	12	10	10	11	12	6	83
School 3	6	11	9	10	11	8	9	4	68
School 4	8	12	12	11	12	12	12	4	83
School 5	10	12	12	11	12	10	10	9	86
School 6	8	11	10	12	12	10	12	6	81
School 7	5	9	8	8	4	8	4	3	49
School 8	8	10	9	9	10	9	9	5	69
School 9	11	11	12	10	12	8	11	2	79
School 10	10	12	9	11	9	10	10	6	76
School 11	7	12	11	10	12	12	12	6	83
School 12	11	12	10	10	9	12	10	10	84
School 13	10	10	11	10	10	6	10	4	71
School 14	8	10	10	8	8	9	10	4	67