Social Skills and Autism Spectrum Disorder

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SOCIAL SKILLS AND AUTISM SPECTRUM DISORDER

By Barbara Liberi

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Abstract

Children on the autistic spectrum display significant social deficits that negatively impact daily functioning and may lead to serious mental health problems. Research on the effectiveness of school based social skills programs and students with Autism Spectrum Disorder (ASD), specifically children identified with Asperger Disorder (AS) and high functioning Autism (HFA), has yielded limited positive outcomes. This study evaluated the effectiveness of a school based social skills program, the Social Skills Improvement System (SSIS), over a 7 month period with six 8th grade middle school students who had been identified with autism or a social disability. Outcome data and program evaluation data were used to identify program modifications and implementation factors needed to adapt this program to meet the unique needs of these adolescents and promote skill generalization. The Social Skills Rating Scale (SSRS) was administered to parents, students, and teachers before and near the end of the intervention. Parent and teacher-completed Social Responsiveness Scales (SRS) were obtained pre- and near the end of the intervention. Program evaluation interviews with teachers, students and parents were conducted during the intervention. Data from these interviews were used to make modifications to the SSIS for the second half of the intervention to facilitate more student involvement and generalization of skills. Program evaluation surveys were completed by parents, teachers, administrators and student near the end of the intervention to determine program effectiveness. Missing data precluded group statistical analysis of the SSRS and SRS scores pre- and post- intervention. Percentage of change for each student was tabulated using SSIS and SRS data. Multiple sources of data that
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included quantitative and qualitative information were used to provide a better
understanding of the meaning of the intervention for each student. Every student
demonstrated a positive outcome based on more than one data source. Program
evaluation data were used to recommend the SSIS for other middle schools in the district.
More studies are needed that incorporate student input and progress monitoring results
for adolescents with social disabilities.
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CHAPTER 1

Introduction

In her book (Unwritten rules of social relationships) Temple Grandin discusses the social difficulties she experienced in high school as an adolescent with autism (Grandin & Barron, 2005). “Gone was the structure of one teacher and one main classroom, of orderly, adult monitored movement from activity to activity. The day became noisy and crowded, having to maneuver among bodies and all sorts of different voices and sound and smells. The teasing was so bad, I became a total goof off and had behavior problems to contend with” (Grandin & Barron, 2005 p. 20-21).

School is a social setting where students are taught in groups and are expected to learn how to interact effectively with their peers and teachers (Payton et al., 2000). Social competencies are the skills necessary for positive social interaction and healthy emotional functioning (Payton et al., 2000). Social skills support academic achievement and are necessary for successfully navigating through life (Gresham & Elliott, 2008; White, Keonig & Scahill, 2007). Although most children develop social skills by constantly interacting with the social world, the deficits observed in children with autism impede positive reciprocal social interactions (Asperger, 1944).

The concept of emotional intelligence involves self-awareness and the monitoring of our own feelings/ emotions, understanding the feelings of others and the capacity to use the information to direct our thinking and behavior appropriately (Salovey & Mayer, 1990). Skills that underlie emotional intelligence include self/other appraisal, regulation of emotion and utilization of emotion in the form of flexible thinking, motivation, etc. (Salovey & Mayer, 1990). Many of the concepts associated with emotional
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intelligence have become part of school-based Social and Emotional Learning (SEL) programs. Additional skills taught in SEL programs include handling interpersonal relationships, appreciating the perspectives of others, and making responsible decisions (CASEL, 2010). A significant body of research indicates that SEL programs enhance student learning and decrease problem behaviors (CASEL, 2010). These results underscore the importance of teaching social and emotional skills to children to facilitate success in school and in life. (CASEL, 2010).

**Autism – A Social Disability**

Individuals with autism spectrum disorder (ASD) experience qualitative impairments in social interaction that include lack of response to another person’s emotions, lack of reciprocal social emotional interaction and difficulty reading social cues (Critchley et al. 2000). Asperger Disorder (AS) and Autism are considered to be neurobiologically based developmental disabilities that are characterized by significant deficits in social interaction and social communication (Sansoti et. al., 2010; Neuhaus, Beauchaine, Bernier, 2010; Iacoboni & Dapretto, 2006; Dapretto et al., 2005). Although autism was once considered a low incidence disability (occurring 1 in 1600), data from the Center for Disease Control (CDC) indicate that the prevalence of autism has been increasing at an alarming rate in the past decade (CDC, 2010; Sansoti e al., 2010). Approximately one in 110 American children is diagnosed with autism (CDC, 2010). This increase in the number of children diagnosed with AS and autism has created significant concern in the public school system (Sansoti et al., 2010).
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Children with AS and high functioning autism (HFA) generally possess cognitive skills within the average range or above (Sansoti et al. 2010). Although these children demonstrate many academic competencies, their social skills deficits impede them from successful participation in the school environment (Atwood, 2002). Although neuro-typical children are constantly interacting with the social world, the impairments observed in children with AS and HFA create significant social difficulties which have a pervasive impact on their lives throughout development (Asperger, 1944).

Adolescence is a complex time for all students, but even more so for individuals with ASD (Myles, 2005; Bolick, 2004). Our culture expects adolescents to navigate increasingly more complicated environments, multiple teachers, and a variety of social situations while becoming more independent from parents (Bolick, 2004). Tremendous changes are taking place in the brain during this period, leading to changes in thinking, behavior, and physical development (Hale, 2009; Attwood, 1998). The social understanding and social communication challenges faced by students with ASD make adolescence particularly difficult (Bolick, 2004; Attwood, 1998). They may become painfully aware of their social difference which can lead to low self-esteem or depression (Dodge, 1993; Meyer, 2006). The inability of children with ASD to understand multiple perspectives may make them vulnerable to suspicion and hostile interpretation of social situations (Frith, 2004; Meyer, 2006). Hostile attribution bias is associated with conduct problems, depression and paranoid thinking (Dodge, 1993; Meyer, 2006; Quiggle, Garber, Panak, Dodge, 1992; Turkat, Keane, Thompson-Pope, 1990). Thus, children with ASD may be predisposed to social/emotional problems (Ghaziuddin, 2005).
Because of the significant negative impact that social skills difficulties may have on children with ASD, it is important to find effective ways to facilitate the development of social understanding and social functioning. Children with ASD struggle to understand social nuances and social cues (Sansoti et al., 2010). They require direct, systematic instruction that is meaningful to them (Myles, 2005). Gresham and Elliott (2008) contend that teaching developmentally appropriate social skills will facilitate healthy interactions in the social world, as well as reduce the emotional and behavioral problems that these children experience. Thus it is necessary to identify the skills that need to be taught as well as how best to teach these skills in a meaningful, developmentally appropriate way, based on cognitive/neuropsychological research and theoretical constructs.

**Autistic Spectrum**

Although the majority of children with autism have cognitive impairments, about 20% are classified as high functioning due to average or superior intelligence. Children with AS exhibit normal or superior cognitive abilities (like high functioning autism) and typically have no history of language delays (Asperger, 1944; Critchley et al., 2000; DSM-IV TR, 2000; Volkmar, State & Klin, 2009). However, they display impairments in social reciprocal interaction, pragmatic language and flexible thinking which are manifested by lack of empathy, limitations in volume, tone and intention of speech, and lack of imaginative play, respectively (Asperger, 1944; Critchley et al, 2000; DSM-IV TR, 2000). Behavior rating scales, observation as well as cognitive, pragmatic
language, motor and social assessments are part of the diagnostic process (Sansoti et al., 2010; Atwood, 2002).

Because of the lack of consensus and clarity regarding the distinctions between AS and HFA, much of the research presented refers to both presentations. For the purpose of this study, the terms ASD will be used to refer to the children that represent these presentations on the autistic spectrum.

**Purpose of the study**

This paper reviews the research pertaining to the theoretical constructs that purportedly underlie the social difficulties displayed by children with ASD. Based on the research, interventions to facilitate developmentally appropriate social functioning for students with social disabilities will be presented and discussed.

The Social Skills Improvement System (Gresham & Elliott, 2008) was piloted at a suburban middle school with 8th grade students who had been diagnosed with ASD or a social disability. Outcome data and program evaluation data were used to identify the program modifications and implementation factors needed to adapt this program to meet the unique needs of these adolescents and to promote skill generalization.

The study was conducted in a suburban school district located south west of Philadelphia. The district comprises 16 schools and serves approximately 10,000 students. The middle school population in this study includes approximately 900 students, supported by a professional staff of 80. The ethnic distribution in the district is 84.5% Caucasian, 7.4% African American, 3.4% Hispanic, 4.6% Asian and 0.1%
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Native American. Special education for all exceptionalities is provided throughout the district at every school and at all levels. Parental involvement is encouraged and there is a strong parent teacher organization at the middle school as well as at the district level.
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CHAPTER 2

Literature Review

Social Competence.

Children who display good social understanding have a better chance of interacting positively with peers and teachers, thus improving the learning environment for all (Gresham & Elliott, 2008). Social skills are important for successful functioning in life and can be developed and improved (Gresham & Elliott, 2008; Gresham, 1981). Research indicates that social competency in children leads to better academic success and reduction in problem behaviors (Wentzel, K., 1993; Wilson, Gottfredson, D., & Najaka, S., 2001).

The Collaborative for Academic, Social and Emotional Learning (CASEL) is an international organization whose mission is to promote the healthy development of children by establishing evidence-based social and emotional learning (SEL) programming as part of an educational curriculum from pre-preschool through high school (CASEL, 2003; Payton et al. 2000). SEL competencies are skills, attitudes and values that are necessary for effective social and emotional functioning (Payton et al. 2000). CASEL (2003) identifies five core areas of competency necessary for effective social functioning: Self-Awareness, Social Awareness, Self-Management, Relationship skills and Responsible Decision Making. Self-awareness refers to self-knowledge and self-efficacy which underlie a realistic assessment of one’s own competencies and facilitate responsible problem solving. Social awareness involves the capacity for understanding the perspective and feelings of others that is necessary for appropriate,
positive social interaction. Self-management refers to self-regulation of emotion and behaviors that lead to appropriate interactions as well as to the capacity to handle frustration and delayed gratification in a constructive manner. Relationship skills involve interacting in emotionally appropriate ways with others, and developing positive, healthy relationships. This also involves the capacity to resist negative social pressure, handle conflict through negotiation and seek help when needed. Responsible decision making requires the individual to consider various alternatives, respect all parties involved, understand consequences, and accept ownership for decisions (CASEL, 2003). Research indicates that these core social and emotional competencies can be taught through school based programs (CASEL, 2003).

**School Based SEL Programs.** Various national reports have concluded that social and emotional competencies are necessary for academic learning (CASEL, 2003). It has been demonstrated that early prosocial behaviors, including cooperation, empathy, being helpful, and sharing predict subsequent academic achievement (Caprara et al., 2000). In school, children are expected to display prosocial and cooperative behaviors through conversation and collaboration with peers (Myles, 2005). This can be a great challenge for children with ASD who may not be able to detect facial cues or understand social subtleties, leading potentially to misinterpretation of a social situation (Myles, 2005). When working with peers in groups, children with ASD may not understand their roles and what is expected of them. They may become frustrated or overwhelmed if they feel their ideas are being challenged (Myles, 2005).

Following rules and demonstrating respect for self and others creates a social context for learning and enables academic achievement (Malecki, & Eliott, 2002;
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Wentzel, 1991). Although children with ASD like to follow rules, the rule must be clearly defined and taught in order for students with ASD to understand (Myles, 2005). Children with ASD may violate rules because they do not clearly understand the scope and expectations regarding the rule. Children with ASD may need rule charts that clarify expectations within a classroom or group to remind them of appropriate behaviors (Sansoti et al. 2010, Myles, 2005).

Evidence based SEL programs lead to greater attachment to school, better academic performance and less risky behavior (CASEL, 2003). SEL programs that create safe and participatory learning environments and provide social and emotional instruction that is focused on the five core competencies facilitate success in school and in life (CASEL, 2003). Students with ASD may require targeted instruction to develop behaviors associated with the five core competencies outlined by CASEL (2003): Self-Awareness, Social Awareness, Self-Management, Relationship skills and Responsible Decision Making (Sansoti et al. 2010; Myles, 2005).

For students with ASD, social awareness and understanding do not occur naturally (Myles, 2005). As students progress in school, they are expected to navigate a variety of social situations that require more complicated social skills (Myles, 2005). As a result, students with ASD may require targeted social skills instruction to facilitate the development of positive social and emotional skills (Sansoti et al. 2010, Myles, 2005).

Social Skills Deficits & ASD

Children with ASD present with a triad of social deficits that include impairments in social interaction, social communication and social imagination that impede the development of social competence. Current theoretical approaches would consider
additional criteria to include deficits in ToM (Baron-Cohen & Swettenham, 1997); deficits in executive functioning (Solomon et al., 2004; McCloskey et al. 2009, and weak central coherence (Frith & Happe 2006).

**ToM Research.** Children with AS struggle with social attribution; they also struggle with an understanding of the beliefs and intentions of others (Meyer, Mundy, Van Heche, &Durocher, 2006). ToM is a term first used by Simon Baron-Cohen that refers to the skills necessary to interpret another person’s perspective (Baron-Cohen, Frith, & Leslie 1985; Baron- Cohen & Swettenham, 1997). Researchers suggest that the triad of deficits observed in children with autism results from a primary impairment in the ability to mind-read (Happe, 1994; Leslie, 1987; Baron- Cohen et al., 1985). The theory originated with observations that children with autism do not spontaneously engage in pretend play (Happe, 1994). Alan Leslie (1987) observed that normal children at 18 months may laugh when an adult pretends a banana is a telephone without displaying confusion between real and pretend. As a result, he proposed that normally developing children have the capacity to pretend; this involves two types of representation: primary representation of things as they really are and meta-representation to capture pretending (Happe, 1994; Leslie, 1987; Baron- Cohen et al., 1985). He suggested that children on the autistic spectrum may lack meta-representation skills which precludes pretense, and other skills such as representing another’s mental state (Happe, 1994; Leslie, 1987). Without the capacity for meta-representation, they will be mind-blind (Happe, 1994; Leslie, 1987; Baron- Cohen et al., 1985). Mind blindness is the inability to infer the thoughts and feelings of another (Happe, 1994). To test the theory about mind blindness, research on ToM has used the “False Belief” test in which the child is presented with a short story
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and a simple plot (Baron-Cohen & Swettenham, 1997). The story involves one character not being present when an object is moved. The child is asked to identify where the character would look for the object when he or she returned. Typical children at age 4 correctly infer that the character would look for the object where he or she left it (Baron-Cohen & Swettenham, 1997). Children with autism fail this test by indicating that the character would look where the object actually was. They disregard the idea that the character’s mental state would be different from their own. A control group of children with Down’s syndrome passed this test as easily as normal children, implying that social inference was relatively independent of general intelligence (Baron-Cohen & Swettenham, 1997).

Alan Leslie questioned whether or not children with autism would display deficiencies on other types of representation tasks such as pictures, maps and photos, which Leslie described as non-mental representations (Happe, 1994; Leslie & Thaiss 1992). To determine this, Leslie and Thaiss (1992) designed an experiment using photos that were equivalent to the false belief task (Happe, 1994). For the photo task, the child is shown how to use a Polaroid instant camera. Then the child observes a character who takes a picture of a cat on a chair. The photograph is removed from the camera and placed face down and the cat is moved from the chair to the bed. The child is asked where the cat will be in the photo. In this instance, the representation is the photograph, not the belief of a character in a story (false belief task). All of the children with autism answered correctly, demonstrating that they understood that the photograph displayed a no longer accurate scene (Happe, 1994; Leslie & Thaiss, 1992). Additional research using pictures and maps support these findings (Leslie & Thaiss, 1992). These results
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suggest that visual representations may not be problematic for children with autism (Happe, 1994; Leslie & Thaiss, 1992). Happe (1994) proposed the possibility that visual representations may be used to supplement impaired mental representations to facilitate the understanding of beliefs. Some autistic and AS individuals describe their mental activity in terms of pictures in their heads (Grandin, 2008; Tammet, 2006; Happe, 1994). Utilizing pictures and visualization may hold promise as a method for facilitating a connection to language and self-talk. Developing self-talk could be a key to developing executive functioning skills (Vygotsky, 1978).

ToM and Social Skills Development. ToM deficits in children with HFA/AS are presumed to underlie the difficulty they have in recognizing and interpreting abstract social information (Happe, 1994; Leslie, 1987; Baron-Cohen et al. 1985). They particularly struggle with perspective-taking, social reciprocity, and social rules. ToM skills enable individuals to infer feelings and anticipate the behavior of another person allowing one to make adjustments in his or her behavior (Baron-Cohen & Swettenham, 1997). ToM underlies the ability to read nonverbal cues to facilitate recognition of emotion (Dapretto et al., 2005). Additional studies have demonstrated that children with ASD have difficulty understanding complex causes of emotions (Dawson & Bernier, 2007), fail to make accidental – intentional distinctions (Iacoboni & Dapretto, 2006), and fail to recognize the eye region of the face as being indicative of what a person is thinking and what the person may want (Klin et al., 2002; Baron-Cohen & Swettenham, 1997). They also fail to understand metaphor, sarcasm and irony which are examples of intentional, non literal communication that reflect the ToM deficit in individuals with autism (Emerick, Creaghead, Grether, Murray & Grasha, 2003; Baron-Cohen &
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Swettenham, 1997; Happe, 1994). The inability to understand intentional non literal or implied communication is a pragmatic deficit that was demonstrated on the Strange Stories test (Happe, 1994). In this study, adolescents and adults with autism were presented with a set of stories about common occurrences in which individuals say something they do not mean literally (Happe, 1994). In real life, the motivation behind a speaker can be identified by various factors, including preceding events, relationship between speaker and recipient, facial expression, etc. (Jolliffe, & Baron-Cohen, 1999). The stories were written so that the motivation of the speaker would likely be interpreted in one way by typical individuals. In contrast to typical individuals, autistic individuals failed to incorporate contextual information in their interpretation of the reasons why the individual in the story said what he said and instead focused on the statements in isolation. (Jolliffe & Baron-Cohen, 1999) This difficulty may reflect weaknesses related to ToM as well as weak central coherence.

Difficulties in working memory exacerbate ToM weaknesses (Solomon et al. 2004). The capacity to represent thoughts mentally is necessary for a child to be able to think about his or her own thoughts and the thoughts of others. Without this ability, he or she will not have the tools to function in a balanced way in the social world in which we live (Happe, 1994).

Behaviors displayed by children with autism are often misunderstood by teachers, parents and peers. If the child does not have the capacity to mind read, provoking a negative reaction may be just as rewarding as provoking a positive reaction (Happe, 1994). The child with ASD does not understand the impact of his or her behavior on the other at a deeper level involving mentally representing feeling, thoughts and beliefs. An
understanding of the connection between mind blindness and behavior displayed by children with autism can provide direction for intervention to reduce negative behavior.

Deficits in ToM can lead to a range of social, emotional, and behavioral difficulties for children with ASD. The research in this field suggests that the use of visual representation may be used to facilitate the development of mental representations to facilitate social understanding of self and others’ beliefs (Happe, 1994). Familiarity with others, guided attention and verbal mediation can facilitate improved emotional processing and ToM (Neuhaus et al, 2010). Social Skills programs often utilize these strategies in teaching perspective-taking to children with AS. This, along with approaches from the research on executive functioning and weak central coherence theory, should be combined to facilitate application of skills being taught.

Executive Functioning. Executive functioning refers to a group of cognitive processes that include working memory, planning, mental flexibility, self-regulation and attention (Sansoti et al., 2010). Individuals with ASD tend to do poorly on measures of problem solving that involve planning, working memory, self-regulation and set shifting (Baron-Cohen, & Swettenham, 1997; McCloskey et al. 2009; Solomon et al. 2004).

Executive function (EF) may be described as a “collection of directive capacities that cue an individual to engage in purposeful behavior with respect to perception, cognition, emotion and action that facilitate day to day functioning” (McCloskey et al., p. 15-16, 2009). Executive functioning skills can vary with respect to the domain of functioning, i.e., perception, cognition, emotion and action, as well as to the arena of functioning. Arenas of functioning are interpersonal, intrapersonal, symbols system and environment. A model of Executive Functioning proposed by McCloskey et al. (2009)
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Involves five levels of executive capacity including self-activation, self-regulation, self-determination, self-generation and trans-self integration. Individuals can display variability in executive skills based on domain and arena. Children with ASD display deficiencies in intrapersonal and interpersonal arenas involving all of the domains of functioning identified (McCloskey et al., 2009). Difficulties with self-awareness and self-determination are particularly problematic for these children (McCloskey et al., 2009).

Self-regulation is a significant area of impairment for children and adolescents with ASD (Sansoti et al. 2010). Self-regulation refers to multiple executive activities that involve self-cuing/directing everyday activity (McCloskey et al., 2009). ASD students with EF difficulties may fail to self-monitor behavior, have difficulty shifting from one activity to another and may struggle to inhibit inappropriate responses, all of which impairs social interaction. They have difficulty in starting and maintaining conversation and of displaying social reciprocity, which impede the development of friendship-making skills (Sansoti et al. 2010).

Another EF difficulty experienced by individuals with ASD is shifting attention. Dr. Ami Klin and associates at Yale University studied social problems in people with autism, using an eye tracking device which allowed researchers to see what autistic and normal people attended to when watching a clip from *Who’s Afraid of Virginia Wolf* (Klin et al., 2002). One difference they found was that people with autism tended to fixate on the mouth rather than on the eyes as typical individuals do. They also found that a typical person’s gaze shifted rapidly back and forth between the eyes of the two people who were talking in the movie clip. The individuals with autism switched once, compared with the normal subjects who switched at least six times. This shortcoming in
rapidly shifting attention may prevent autistic people from observing the nonverbal social cues expressed by the speaker (Grandin, 2008; Klin et al. 2002; Solomon et al. 2004). To help people with autism improve conversation skills, it is important for an individual to slow down and to talk out his or her thoughts in detail instead of using nonverbal body language (Grandin, 2008).

Working memory may be an EF weakness for many individuals with autism or AS. A study by Williams, Goldstein and Minshew (2006) demonstrated that children with autism displayed memory difficulties for complex verbal and visual stimuli and spatial memory. The children displayed relatively stronger memory skills for associative learning tasks and verbal working memory on the Wide Range Assessment of Memory and Learning2. Their findings (with the exception of spatial memory results) and their review of the literature indicate that memory difficulties increase as stimuli increase in complexity for adolescents and adults with autism. Memory weaknesses for complex visual and verbal information impede ToM skill development needed to facilitate social understanding and perspective taking. Without a strategy to represent information mentally, social cues may be misread and misunderstood (Solomon et al., 2004). Verbal strategies and associative learning tasks may facilitate the development of working memory for students with autism. Helping students make explicit connections will be important to facilitate the development of working memory skills in students with AS. Children with AS tend to have relatively stronger verbal skills and may rely on verbal mediation to support working memory (Solomon et al., 2004). Strategies to promote schema development by linking experience to verbal and visual representations may be effective (Isbell, Tyler & Burns, 2007; McVee, Dunsmore, & Gavelek, 2005).
The self-regulatory difficulties experienced by students with AS may be impacted by working memory deficits. According to Bolick (2004), students with AS often do not realize that they have a strategy that could help them with a current problem. They do not make the connection between the current situation and previous similar situations. Each problem seems to be new. It is as though each set of facts is stored separately in its own compartment, with few connections among them (Bolick, 2004). Bolick (2004) illustrates this by sharing Temple Grandin’s experience as an adolescent who was interested in learning about dogs. Temple Grandin indicated that she could remember what a Poodle or a German shepherd looked like, but she could not comprehend what made a dog a dog (Bolick, 2004). It was as though her memories were stored in highly specific ways without the conceptual connections that are necessary for generalizing schema (Bolick, 2004).

When teaching EF skills to adolescents with AS, it is particularly important to help them understand the reason why the skill matters. Although typically developing students may make the connection that getting homework done early leaves more time for sports or another interests, the student with AS may not think it matters (Bolick, 2004). Facilitating the development of EF skills involves not only direct instruction, but also getting the student to “buy in.” Clear explanations about the utility of a strategy are as important as the teaching of the strategy for these students (Bolick, 2004).

**Weak Central Coherence.** Weak central coherence may be described as a “detail focused processing” style (Happe & Frith, 2006). There is strong evidence that people with AS display superior performance on tasks that require detail focused processing (Happe, 2006, Rourke, 1989), and perform more poorly on tasks requiring global
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processing (Collins and Rourke, 2003; Klin et al., 1995). Superior detail processing may be considered (has been reframed as) a strength. This is supported by neurobiological research indicating that individuals with AS tend to have well developed left hemisphere functioning which processes crystallized knowledge, but that they have deficits in right hemisphere functioning that are involved in global processing (Happe, 2006, Klin et al. 1995).

Weak Central Coherence may underlie the difficulties that individuals with autism have with non literal communication and pragmatic language (Jolliffe & Baron-Cohen, 1999). Rather than incorporate contextual information, they may focus on a literal statement in a conversation and fail to understand the implied meaning of the speaker (Happe, 1994). Detail processing of social events may impede the understanding of social situations in a global, meaningful way. As a result, a student with AS may attend only to something that is salient to him or her rather than to the situation, leading to misunderstanding and misperception of the event (Jolliffe & Baron-Cohen, 1999; Happe 1994).

Research has demonstrated that people with AS can process globally for meaning when required to do so, and that this may best be tapped by open-ended tasks (Happe, 2006). From their literature review, Neuhaus et al., (2010) contend that familiarity with an individual in a social situation, as well as guided attention improves global processing. Guiding students with AS to attend to multiple relevant features of an event from various perspectives may be needed to facilitate global processing (Neuhaus et al., 2010).
Theoretical Frameworks and Social Skills Instruction

These three theoretical perspectives pertaining to cognitive functioning appear to explain the triad of deficits displayed by students with autism. An appropriate social skills instructional program for children with ASD should include research findings from each of these perspectives to inform curriculum content as well as teaching methods. Social validity issues inform the importance of social skills that need to be taught.

Perspective taking is an essential skill for students to develop in order to improve social functioning and communication. Perspective taking means that the student is considering the needs and thoughts of others as well as his or her own in a given situation (Happe, 1994; Leslie, 1987; Baron-Cohen et al., 1985). A social skills instructional program for children with ASD should focus on developing perspective taking skills by utilizing visual representation, pictures, videos etc. to supplement impaired mental representation in order to facilitate understanding of another’s thoughts and beliefs (Happe, 1994). Associative learning strategies such as pairing visual representations with verbal mediation are important instructional strategies to improve emotional processing for students with ASD. Weakness in central coherence makes it difficult for students with AS to filter information and to process it in a meaningful “big picture” way (Solomon et al., 2004; Garcia-Winner, 2000). Describing this as difficulty with gestalt processing, Garcia-Winner (2000) states that students with AS tend to learn factually based knowledge around topics of interest but fail to connect an island of knowledge to related islands of knowledge (Garcia-Winner, 2000). Instructional strategies should include guided attention to help students examine information from different pools of knowledge to promote global processing (Neuhaus, et al, 2010). Explicit associative learning is
Social Skills and Autism

needed to help students connect the current situation to previous situations, thus facilitating global processing.

Deficits in EF skills including lack of self/other awareness, lack of self-regulation and poor working memory impede social understanding. Impairment in remembering facts about social problems may lead to difficulties generating solutions which impede reciprocal communication (Channon, et al. 2001). Visually presented, explicit instruction is an important teaching strategy to help develop working memory. This may be in the form of charts, lists, video clips and pictures. Promoting the development of self-talk via associative learning may facilitate the development of self-awareness and self-regulation (Vygotsky, 1978).

Direct instruction and clear explanations are needed to help students understand the importance of a skill so that they will “buy in” to learning, practicing and generalizing the skill (Neuhaus et al. 2010). Teacher, parent and peer involvement are necessary to help students generalize the skills. Research indicates that familiarity with an individual in a social situation improves global processing (Neuhaus et al., 2010). Involvement of peers, teachers and parents promotes a better understanding of children with ASD, which may facilitate targeted interventions to help children with ASD make appropriate adjustments in their behavior. In general, children with AS tend to process emotions better with familiar individuals and guided attention to salient information (Neuhaus et al., 2010; Solomon et al., 2004) Parental and teacher involvement are a crucial piece of promoting social understanding among children with AS (Lavoie 2005).
Social Rules and Adolescence

Temple Grandin (2005) stated that ideas that cannot be understood through logic or that involve emotions and social relationships are difficult to grasp. As a high school student, figuring out the social rules was a tremendous challenge. She observed that some rules could be broken with minor consequences and others could not. She became an observer of others and developed four rule categories that she describes as really bad things, i.e., courtesy rules, illegal but not bad, and sins of the system (Grandin, 2005). Although there are multiple ways to categorize rules, the point here is to help students with ASD understand that rules differ by importance, consequence and situation, and inform one’s behavior (Grandin, 2005).

The difficulties that individuals with AS experience become increasingly troublesome for adolescents who are expected to function in school and understand inferred social situations. This is referred to as the” hidden curriculum” or unstated rules of social behavior (Myles, 2004). Although typical students can figure out the hidden curriculum pertaining to the hierarchy of the school, i.e., the purpose of homework, how to sign up for activities and the social scene, students with ASD struggle with various aspects of their daily social functioning (Myles, 2004, Lavoie 2005). Typical students generally understand how to “hang out” at a school dance, whereas students with AS may struggle to understand how to act at a dance, how to participate when not dancing, and how to interact with the opposite sex in an appropriate way.

Social Skills Program Elements and Autistic Spectrum Disorder

Research on effective social skills training with students with ASD has yielded limited positive outcomes (Bellini, Peters, Benner, & Hope, 2007; Wang, & Spillane,
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2009). A meta-analysis of 55 school based social skills interventions was conducted to determine effectiveness, maintenance and generalization of skills among children with ASD (Bellini et al., 2007). Although the investigators concluded that social skills programs for children with autism were largely ineffective, they were able to identify elements that may lead to better outcomes (Bellini et al., 2007). They found that students receiving social skills training in their classrooms had better outcomes than those that were involved in pull-out programs. They concluded that many programs lacked sufficient amounts of teaching time. As a result they recommend increasing the amount and frequency of instruction. They found that the majority of the programs they studied did not differentiate between skill deficit and performance deficit (Bellini et al., 2007). A social skills deficit reflects an absence of the skill, but a performance deficit represents the presence of the skill, but a failure to perform the skill (Gresham, Sugai & Horner, 2001). This distinction is important because the remediation of social skills acquisition deficits require interventions different from the remediation of performance deficits (Gresham et al., 2001). An acquisition deficit will require direct instruction; a performance deficit requires more practice and opportunities for skill generalization through environmental supports (Gresham et al., 2001). Thus it is recommended that targeting interventions to match to skill deficits could lead to better outcomes (Bellini et al., 2007). Finally, it was recommended that ensuring fidelity or proper implementation of social skills instruction is important to identify treatment effectiveness (Bellini et al., 2007).

Skill generalization is important for determining the effectiveness of social skills instruction. Skill generalization refers to the application of skills in settings other than the
one in which they were instructed. Skill generalization requires practice in a variety of settings (Krasny, Williams, Provencal, & Ozonoff, 2003). Involvement of parents, teachers and peers is important to facilitate the practice of skills in multiple settings (Krasny et al., 2003). Some strategies to support skill generalization include activities such as having the participating children call a peer from the group to practice a learned skill, involving parents and teachers as coaches, and (adult) prompting children to practice a skill in another setting such as lunch or recess (Krasny, et al., 2003; Myles, 2005; Sansoti, Powell-Smith, Cowan, 2010; White, Keonig, & Scahill, 2007). It is important to promote skill generalization across settings and across individuals (Sansoti et al., 2010; White, Keonig, & Scahill, 2007). Specific plans to promote skill generalization should be incorporated into any social skills intervention (Wang & Spillane, 2009).

An important aspect of social skills intervention is social validity (Gresham et al., 2001). Social validity “defines social skills as socially significant behaviors exhibited in specific situations that predict important social outcomes for children and youth” (Gresham, Sugai, & Horner, p.333, 2001). Socially significant behaviors are the social outcomes determined to be important by the consumers of the treatment, which may include parents, teachers, administrators, peers and students. Important outcomes may be peer friendships, teacher and parent acceptance, and school adjustment (Gresham et al., 2001). A broader framework for the concept of social validity includes assessing the importance of an intervention’s goals to consumers, ease of program implementation, and consumer satisfaction (Hurley, Wehby & Feurer, 2010; Wolf, 1978). In order to assess the effectiveness of a social skills intervention, it will be important to obtain input from
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all consumers to inform each of these areas. Interviews and surveys may be used to determine the most common goals that consumers have for students who participate, identify acceptable implementation procedures, clarify effective program elements and identify the social outcomes that parents, teachers and students consider to be important. In this study, parents, teachers and students were surveyed and interviewed to determine what they consider to be important social outcomes, how they define success and what elements of the program they consider to be effective. Expectations and outcomes were examined from quantitative and qualitative perspectives.

**Social Skills Improvement System (SSIS) - Theoretical underpinnings**

The SSIS is based on the concept that social skills are observable behaviors that can be changed through the use of instructional strategies including direct instruction, modeling, role playing, practice and reinforcement (Gresham & Elliott, 2008). The authors propose five major reasons that underlie social skill deficiencies: lack of knowledge, lack of practice, lack of cues, lack of reinforcement and the presence of competing problem behaviors (Gresham & Elliott, 2008). Among the pragmatic assumptions that underlie the SSIS are the following: social skills are learned, social skills deficits may be acquisition or performance deficits, social skills are interactive and contextual, social skills include initiation and response, social skill comprise specific verbal and nonverbal behaviors, social skills and competing problem behaviors can be identified and addressed (Gresham & Elliott, 2008). According to Gresham and Elliott (2008) the top ten school social skills necessary for students to be successful are as follows:

- Listens to others.
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- Follows directions.
- Follows classroom rules.
- Ignores peer distractions.
- Asks for help.
- Takes turns in conversation.
- Cooperates with others.
- Controls temper in conflict situations.
- Acts responsibly with others.
- Shows kindness to others.

These skills fall under the seven domains which include: communication, cooperation, assertion, responsibility, empathy, engagement, self control (Gresham & Elliott, 2008). Competing problem behaviors that may impede social skills acquisition and performance fall under five domains: externalizing, bullying, hyperactivity/inattention, internalizing and autistic spectrum. Supported by research, Gresham and Elliott (2008) concluded that a reduction in problem behavior is consistent with an increase in social skills acquisition.

The instructional approaches used in the SSIS are based on learning theory research from Social Learning Theory, Applied Behavioral Analysis and Cognitive – Behavioral approaches (Gresham & Elliot, 2008). Social Learning Theory and current research emphasize the important role of imitation for social development, communication and the development of empathy (Avikainen, Wohlschlager, Liuhanen, Hanninen & Hari, 2003; Bandura, 1971; Iacoboni & Dapretto, 2006). Applied behavior analysis is based on identifying the functional relationship among antecedents, behavior...
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and consequences. Cognitive Behavior approaches to problem solving assume that an individual’s beliefs and thought about a situation underlie his or her behavioral response (Gresham & Elliot, 2008). The SSIS model of instruction includes the following six elements: Tell (Coaching), Show (Modeling), Do (Role playing and rehearsal), Practice (Behavioral Rehearsal); Monitor Progress (Feedback and self assessment), Generalize (Generalization).

An analysis of the recommended strategies from ToM, EF, and WCC research appear to be consistent with the SSIS methods of instruction used to promote the development of various skill deficits that underlie multiple social skill, including perspective taking, self-regulation and attending to salient features of a situation. These strategies include pairing visual with verbal information, explicit instruction, visual representation such as video clips, visual presentation of skill steps and guided attention to multiple, salient aspects of a situation. Developing self/other awareness through self-assessment and peer feedback is also part of the SSIS. Skill generalization is facilitated through parent, teacher and peer involvement and ongoing communication with adults regarding the skills being taught (refer to table 1).

Table 1

<table>
<thead>
<tr>
<th>Theoretical Construct</th>
<th>Recommended Instructional Strategies</th>
<th>SSIS Instructional Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>ToM</td>
<td>Difficulty with…</td>
<td></td>
</tr>
<tr>
<td>Perspective Taking</td>
<td>Visual Representation</td>
<td>Modeling, Video Clips</td>
</tr>
<tr>
<td>Social Reciprocity</td>
<td>Direct Instruction</td>
<td>Role play</td>
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<tr>
<td>Social Rules</td>
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<td>Social Skills and Autism</td>
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<td>--------------------------</td>
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<tr>
<td><strong>WCC</strong> Difficulty with…</td>
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<td></td>
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<tr>
<td>Global Processing of a situation</td>
<td>Guided Attention</td>
<td>Explicit Associative Learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Visual list of skill steps, Role play</td>
</tr>
<tr>
<td>Focused on factually based idiosyncratic topics of interest</td>
<td>Questioning, Peer Feedback</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self Assessment, Instructor Feedback</td>
<td></td>
</tr>
<tr>
<td><strong>Cognitive Process</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EF</strong> Difficulty with…</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self/other awareness, Working Memory</td>
<td>Visually presented instruction</td>
<td>Facilitate Self Talk</td>
</tr>
<tr>
<td></td>
<td>Video clips, Modeling Coaching, Self Assessment, Peer Feedback, Instructor Feedback, List of skill steps Repetition, Social sharing of individual situations, Role play</td>
<td></td>
</tr>
<tr>
<td>Generalization of skills</td>
<td>Involve parents, teachers, peers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parent/Teacher Involvement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parent/Teacher/Student Assessments, Skill Information sheets for Parents, teachers, progress notes</td>
<td></td>
</tr>
</tbody>
</table>

The SSIS incorporates social skills program elements that are associated with positive outcomes such as increased teaching time, differentiation between skill and performance deficits, linking assessment to intervention, and ensuring proper implementation of instruction (Gresham et al., 2001). Teaching time is recommended to occur two times per week; this represents an increase in teaching time when compared with other programs and with the social skills instruction that had been previously offered. Assessment is linked to intervention which is differentiated, based upon the
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type of social skill deficit exhibited, skill acquisition or performance. Treatment fidelity is facilitated by instructor self-assessment via completion of the Intervention Integrity Rating Scale by group leaders following each lesson.

The SSIS (Gresham & Elliott, 2008) was selected for implementation with middle school students having ASD in order to facilitate social skills development. This program is part of the Suburban School District initiative to incorporate additional ASD support at the middle school level. With the addition of an autistic support teacher to a suburban middle school, the district proposed to increase social skills support using a program that would increase instructional time and be offered as part of the curriculum. The SSIS is a research based program that was chosen because of the increased teaching time, of developmentally appropriate instruction, K-12, and the link between assessment and intervention. Parent and teacher involvement are part of the program to help facilitate generalization of skills. The School District administration proposed to pilot the program at Suburban Middle School, assess individual outcome data, and evaluate program effectiveness. Depending on the outcome of the program evaluation study, the district could consider adding the program to the two other middle schools and extending it to elementary and high schools.

The two quantitative measures used to assess the outcome of the SSIS intervention are the Social Skills Rating Scale (SSRS) and the Social Responsiveness Scale (SRS). The SSRS was developed by Gresham and Elliott (2008) and is linked to the seven domains of socials skills instruction in the SSIS.

The SRS was developed to assess the persistent deficits in social interaction displayed by individuals on the autistic spectrum (Constantino & Gruber, 2005).
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Appropriate interaction is dependent upon the child’s awareness of the emotional and interpersonal cues displayed by others, the capacity to interpret and respond to the other and the capacity for self-awareness and emotional engagement (Constantino & Gruber, 2005).

**Program Evaluation**

Program evaluation is a process that allows knowledge to be ascertained and applied locally and immediately (Sanders & Sullins, 2006). Effective program evaluation incorporates several characteristics including utility, feasibility, propriety and accuracy (Joint Committee on Standards for Educational Evaluation, 1981). Utility indicates that the need for the evaluation must serve the practical needs of the school district. Feasibility refers to the importance of managing the evaluation within the context of available resources in the school district. Propriety refers to the ethical implementation of the program evaluation. Accuracy refers to producing objective and sound data (Brainard, 1996; Joint Committee on Standards for Educational Evaluation, 1981). Another important characteristic is relevance, which pertains to the objectives of the program evaluation (Brainard, 1996).

Program evaluation may be formative or summative or a combination of both. When a program is being evaluated to provide information in order to inform program improvement, it is considered to be formative (Fitzpatrick, Sanders & Worthen, 2004). Summative evaluation is considered to be an assessment to assist in deciding whether or not a program should be continued or expanded (Fitzpatrick et al., 2004). Both types of information are part of the process of program implementation and evaluation. At the
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beginning of a program, the data collected may be considered to be formative- to modify or enhance the program, which allows for incremental change (Fitzpatrick et al., 2004). Toward the end of program implementation, the data may be considered to be summative - to determine if a program should continue (Fitzpatrick et al., 2004).

Program evaluation often uses a combination of qualitative and quantitative data. Multiple measures (that include quantitative and qualitative data) provide more information than can be obtained from overreliance on a single outcome measure (Fitzpatrick et al., 2004). Qualitative methods may provide rich detail about programs in action. Together with quantitative data, qualitative information may facilitate a better understanding of the connection between program strategies and outcomes (Fitzpatrick et al., 2004).

The current study combined formative evaluation, which was used to improve the program, and summative evaluation, which was used to make decisions regarding expanding the program in the district. The type of information collected was a combination of quantitative and qualitative data.

Statement of the Problem: Social Skills and Autistic Spectrum Disorder

Social competencies are the skills that underlie healthy emotional development and facilitate positive reciprocal social interaction (Payton et al., 2000). Social skills support academic achievement and are necessary for successfully navigating through life (Gresham & Elliott, 2008; White, Keonig & Scahill, 2007). Individuals with ASD experience qualitative impairments in social interaction and difficulty reading social cues, resulting in significant social difficulties that pervasively impact their lives throughout development (Critchley et al. 2000, Asperger, 1944). The social difficulties and
emotional challenges that these children experience as they mature may lead to isolation, significant emotional distress, depression and anxiety (Sansoti et al., 2010; Quiggle, Dodge, Gerber & Panak, 1992).

The number of children identified with autism in the school district has been increasing and is above the state average (Penn Data, 2008-2009). Parents of children with ASD have been vocal within the school district about wanting more social skills services for their children. Special education teachers, counselors and school psychologists have expressed the need for more autistic support within the district. As a result, there has been an increased demand for the district to provided effective social skills programs to support these students.

Middle and high schools require students to make many transitions throughout the day and respond to multiple teachers, situations and expectations (Sansoti et al., 2010). Behavior is guided by inferred social rules that are not directly taught, posing significant challenges for adolescents with ASD (Myles et al. 2004). These students require direct instruction of social skills to assist them in developing age appropriate social skills and performing those skills in a variety of settings (Sansoti et. al, 2010; Gresham & Elliott, 2008). An autistic support teacher was added to the middle school staff for the 2010-2011 school year to provide direct social skills instruction in a systematic way that would produce positive outcomes for these students. The Social Skills Improvement System was selected because it is a developmentally based program with empirical support that is consistent with social skills program elements that are associated with positive outcomes (Gresham et al., 2001). Parent and teacher involvement were part of the program to help facilitate generalization of skills.
A program evaluation model was implemented to determine the effectiveness of the SSIS with middle school students with ASD during a 7 month period. As part of program evaluation, parents, teachers, students and administrators completed surveys and participated in interviews to identify additional elements and modifications that were necessary to meet the unique needs of these students in facilitating skill development and performance. Results were also used to assist administration in determining the suitability of the program for other levels and other schools within the district. Program evaluation serves the practical needs and goals of the school district to identify social skills programming and the program elements considered to be effective with middle school students identified with ASD. The addition of an autistic support teacher made it feasible to conduct program evaluation with the available resources in the middle school.

**Research Proposal**

From the literature review presented, this study proposed that the SSIS program would facilitate social skills improvement based on the assessment of social skills deficits linked to targeted instruction for individual students. It was further postulated that the students would demonstrate a reduction in problem behaviors, based on implementation of SSIS. Quantitative measures to compare social skills pre and post intervention were the standard scores on the Social Skills Rating Scales (SSRS) and T scores on the Social Responsiveness Scale (SRS). The SSIS was implemented by the autistic support teacher and school psychologist at a frequency of two times during a six day cycle for a period of 7 months.

Students were invited to participate in the group, based on their diagnosis of Asperger Disorder, high functioning Autism or a social disability. High functioning
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autism refers to those students whose cognitive skills were within or above the average range and who were included in the general curriculum for the majority of their school day. Six 8th grade students (5 males, 1 female) were invited to participate as a group in this study. The SSRS, which was used for initial assessment and progress monitoring, was completed initially by parents, teachers and students before the intervention. After eight to ten weeks of the intervention, the SSRS was administered to parents and teachers. Near the end of the intervention, parents, teachers and students completed the SSRS. The Social Responsiveness Scale (SRS) was completed by parents and the autistic support teacher before the intervention began and again near the end of the intervention.

The following goals were defined for the program:

**Goal 1:** For each student, improvement in social skills will be noted, as indicated by an increase in standard scores on the Social Skills Rating Scale Social Skills Composite completed by parents and teachers.

**Goal 2:** For each student, a decrease in problem behaviors will be noted, as indicated by a decrease in standard scores on the Social Skills Rating Scale Problem Behaviors Composite completed by parents and teachers.

**Goal 3:** For each student, improvement in social responsiveness will be noted, as indicated by a decrease in T scores on the Social Responsiveness Scale completed by parents and teachers.

*Program Evaluation.* Program evaluation data were collected during and at the end of the 7 month SSIS program implementation. Program evaluation assessments included quantitative data from pre and post assessments, qualitative data gleaned from interviews and surveys, and data from goal attainment scaling. Interview and surveys
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were used to elicit information from students, parents, teachers and administrators regarding program expectations and effective outcomes in order to determine those modifications which may be needed to improve the program as well as how the WCASD may use the program in the future. Specifically, the school district wanted to assess the effectiveness of the SSIS for middle school students with ASD, and to identify additional supports that may be needed to facilitate the development of social skills in middle school students with ASD. Survey and interview data were summarized and presented qualitatively and descriptively. Quantitative and qualitative data were used to answer the following program evaluation questions: Does the SSIS result in improved social skills for these students? Were the parents satisfied with the program? What additional elements were needed to facilitate success/generalizability for these students? What did the students like and dislike about the program? Did teachers identify any benefits from the program? Is the program suitable for students with HFS/AS at other levels and other schools in our school district?
CHAPTER 3

Methods

As part of a district wide initiative to increase supports in every school for children identified with Autism who are largely included in the general curriculum, a social skills program was piloted in a suburban middle school to determine its effectiveness and feasibility for use throughout the district at all levels and to identify additional elements that are needed to support the unique needs of the participants in the program. The current study provided a retrospective analysis of the pilot program which was conducted over a seven month period, from November 2010 to May 2011, to determine the effectiveness of the Social Skills Improvement System (SSIS, Gresham & Elliott, 2008) with middle school students who meet the criteria for the exceptionality of Autism under Pennsylvania Education Code (Title 22, Chapter 14), who have been diagnosed with Autism or Asperger Disorder or who demonstrate social skills deficits that require direct instruction in social skills. All students were considered to be high functioning because they were included in the general curriculum for most of their academic subjects. The autistic support teacher and/or the school psychologist facilitated instruction twice per six day cycle over a seven month period.

The Social Skills Improvement System (Gresham & Elliott, 2008) was selected because it is empirically supported and provides a targeted intervention approach, increased teaching time, and developmentally appropriate instruction. Targeted instruction is considered to be more intensive intervention for those students who require more than is offered in the general curriculum. The SSIS includes the Social Skills Rating Scale (SSRS) which is a norm referenced assessment tool that may be used to
provide baseline and post intervention data on individual progress. The SSIS was
developed by Frank Gresham and Stephen Elliott (2008) and is grounded on pragmatic
assumptions that lend themselves to the educational process. The SSIS has evolved since
it was first published as the Social Skills Rating System in 1990 and it has become a well
researched program based on the assumptions that social skills are learned, social skills
deficits may be acquisition or performance deficits and that social skills are composed of
specific verbal and nonverbal behaviors. The instructional approaches used in the SSIS
are based on learning theory research from Social Learning Theory, Applied Behavior
Analysis and Cognitive Behavior Therapy, all of which have empirical support. Social
learning theory purports that learning occurs in a social context when an individual
observes modeled behavior. Cognitive Behavior theories contend that an individual’s
mediating thoughts about an event determine subsequent feelings and behaviors. Applied
Behavior Analysis is based on the functional relationship among antecedents, behaviors
and consequences (Gresham & Elliott, 2008) All students receive instruction in seven
domains of social skills that include communication, cooperation, assertion,
responsibility, empathy, engagement, and self-control.

Participants

The participants in this intervention were six 8th grade students (5 males and one
girl) who were identified with Asperger Disorder, high functioning autism, or another
disability. The students participated in the general curriculum for the majority of their
day. All of the students were considered to be in need of social skills instruction, based
on their IEP or 504 accommodation plan. Five of six students had IEPs and one student
who was diagnosed with AS had a 504 plan. Based on Pennsylvania Special Education Code, Title 22, Chapter 14, four students met the exceptionality criteria for Autism; one student was identified with a learning disability. Four students participated in the intervention from the beginning. One student joined the group during the second week after the program had been discussed at the student’s IEP meeting. One student joined the group after the first 8 weeks of the intervention because he did not wish to change his schedule until the beginning of the second semester. All of the participants had received social skills instruction in 6th and 7th grade; it was offered twice monthly and was co-facilitated by the school counselor and school psychologist.

Measures

Baseline data were collected by school staff at the beginning of the intervention, using the SSRS completed by parents, teachers (2 per student), and students. Prior to student participation, parents completed the questionnaires, and signed permission indicating that their child could participate and that teacher data could be collected. At the first and second meeting, students completed their questionnaires. One student refused to complete the questionnaire. For the five students who had participated from the beginning, the SSRS was again completed after about 8-10 weeks by parents, and teachers. Post (or near the end) intervention, the SSRS was completed by parents, teachers, and students. In addition, the Social Responsiveness Scale (SRS) was completed by parents and the autistic support teacher at the beginning of the intervention and again post (or near the end) intervention.
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The Social Skills Rating Scale (SSRS) (Gresham & Elliott, 2008) is a standardized, norm referenced assessment that identifies social skill deficits, strengths and problem behaviors and distinguishes between social skills acquisition and performances deficits. On the parent and teacher forms, the respondent indicates how frequently the student exhibits the behavior, using a 4 point scale of Never, Seldom, Often, and Almost Always. The student scale format asks the student to indicate how true a statement about a social skill or problem behavior is, for him or for her, by responding Not True, A Little True, A Lot True, and Very True. The SSRS includes social skills behavior in the following subdomains; these are described in the manual (Gresham & Elliott, 2008 p.1-2)

- Communication- taking turns and making eye contact during a conversation, using appropriate tone of voice and gesture, and being polite by saying please and thank you.
- Cooperation- helping others, sharing materials, and complying with rules and directions.
- Assertion- initiating behaviors, such as asking others for information, introducing one’s self, and responding to the actions of others.
- Responsibility- showing regard for property or work and demonstrating the ability to communicate with adults.
- Empathy- showing concern and respect for others’ feelings and viewpoints.
- Engagement- joining activities in progress and inviting others to join, initiating conversations, making friends and interacting well with others.
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- Self Control – responding appropriately in conflict (e.g., disagreeing, teasing) and non conflict situations (taking turns and compromising).

Problem behaviors are described as those behaviors that interfere with the acquisition of social skills. There are five subdomains of problem behaviors described in the manual (Gresham & Elliott, 2008 p. 2).

- Externalizing- being verbally or physically aggressive, failing to control temper, and arguing.
- Bullying- forcing others to do something, hurting people physically or emotionally, and not letting others join an activity.
- Hyperactivity/Inattention- moving about excessively, having impulsive reactions, and becoming easily distracted.
- Internalizing- feeling anxious, sad, and lonely; exhibiting poor self esteem.
- Autism Spectrum- interacting poorly, not taking part in conversation, or not making eye contact; making odd gestures; becoming upset at changes in routine or having nonfunctional routines.

According to the manual, the SSRS is a reliable and valid instrument (Gresham & Elliott, 2008). Reliability refers to the consistency of test scores. Internal consistency refers to the consistency of scores within a scale or subscale which reflects the homogeneity of the items. Test- retest reliability assesses the consistency of scores over a short period of time on the same individual by the same rater. Inter-rater reliability assesses the consistency of scores by two raters rating the same individual. Reliability
coefficients are reported for internal consistency, test–retest reliability and inter-rater reliability for teacher, parent and student forms and are grouped by age and gender. Median scale internal consistency, combining gender and age for parent, teacher and student forms was very high with coefficient alpha of .96, .96, and .95 respectively. Subscale reliability was also high. Median scale test-retest reliability was reported as moderately high for all respondents: teachers- .84, parents -.87 and students- .77. Subscale reliability was high. Inter-rater reliability was conducted by comparing two teacher ratings of the same individual, which yielded a median scale correlation of .62. In the parent study, two parent rating scales were correlated for each child and yielded a median scale correlation of .55. Subscale reliability coefficients were in the same range as scale reliability coefficients.

Validity refers to the extent to which a test measures what it purports to measure. The manual provides evidence for content validity, internal structure validity which includes internal correlation and item-total correlation, relations with other variables including developmental trends, sex differences, convergent and discriminant validity, correlations with other measures and special populations (Gresham& Elliott, 2008). Correlation with other established measures is an important source for validation. The Behavior Assessment System for Children- Second Edition and the Vineland –II are among the measures with which the SSRS is correlated (Gresham & Elliott, 2008).

The Social Responsiveness Scale is a 65 item rating scale that covers various dimensions of interpersonal behavior, communication and stereotypic behavior associated with autism spectrum disorder. A Likert scale response format is used to
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assess symptom severity. The SRS may be used as a screening tool or as an aid to diagnosis. The SRS is designed to assess autistic impairment quantitatively, which is in keeping with the view that autism is conceptualized as a spectrum disorder (Constantino & Gruber, 2005). This allows clinicians to characterize the severity of the social impairment. The SRS may also be used to assess response to intervention (Constantino & Gruber, 2005). Interpretation is based on the total score derived from completing the 65 items which is reported as a T score. T scores below 59 are considered to be within the normal range. T scores ranging from 60 to 75 are considered to be in the mild to moderate range, indicating mild deficiencies in social interactions. T scores of 76 or higher are considered to be in the severe range indicating that the behaviors severely impede social interactions.

According to the manual, the SRS is considered to be a reliable and valid instrument (Constantino & Gruber, 2005). Normative data were based on 1600 students ranging from age 4 to 18 in the general population. Internal consistency alpha reliability coefficients for parent and teacher forms were reported to be above .9, which is very high. Inter-rater reliability ranged from .75 to .91, which was in an acceptable to high range. Validation research is presented in the manual and indicates that the SRS has been studied extensively. Discriminant validity studies discussed in the manual indicate that elevated scores on the SRS were associated with the clinical diagnoses of Autistic Disorder, Asperger Disorder and Pervasive Developmental Disorder- Not Otherwise Specified, but not with other psychiatric disorders or with IQ. Concurrent validity was conduct using the Autistic Diagnostic Interview- Revised (ADI-R). The ADI-R is a two
Social Skills and Autism

hour interview with a parent that is used to make a clinical diagnosis of autism. SRS scores were compared with the DSM-IV score for social deficits, which had been generated by the ADI-R. The results indicate a strong relationship between the instruments. When comparing the parent-completed SRS with the ADI-R social deficits and verbal communications scales, the correlations ranged from .73 to .74. When comparing the teacher completed SRS with the ADI-R, the correlations ranged from .65 to .67. Additional data supporting the validity of the SRS to identify symptom severity within the autistic spectrum are provided in the manual (Constantino & Gruber, 2005).

Interview data were obtained during the intervention after 8-10 weeks, from the teachers individually and as a group. Teachers were asked to comment on what they felt was helpful with respect to the program and what was not helpful. Teachers were asked to make suggestions for program improvement that could enhance generalizability. Students were also interviewed as a group and asked what they liked and disliked about the group. They were asked for suggestions about improving the group. After the program had been implemented for 8-10 weeks, parents were invited to a meeting to discuss the SSIS and to provide feedback regarding their impressions of the social skills program. No parent attended the meeting. As a result, information was obtained from meetings with two parents individually.

Program evaluation surveys were developed by the school psychologist with input from teachers and from administration. The program evaluation surveys were designed to answer key questions about the SSIS as well as the modifications that may be needed to enhance outcomes for students. Interview data and surveys were obtained to answer
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the following broad questions about the SSIS and social skills instruction. Did the intervention result in improved social skills? Were the parents satisfied with the program? What additional elements were needed to facilitate success for these students? Did the students like the program? Were there any benefits to the teachers who supported the program? Is the program suitable for other levels and for other schools in our district (Table 2).

Table 2

<table>
<thead>
<tr>
<th>Broad Questions</th>
<th>Sources of Information</th>
<th>Methods</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the intervention result in improved social skills?</td>
<td>SSRS, SRS</td>
<td>Teacher/Parent/Student completed scales</td>
<td>Autistic Support (AS) Teacher, School Psychologist (SP)</td>
</tr>
<tr>
<td>Were the parents satisfied with the intervention?</td>
<td>Interview, Surveys</td>
<td>Individual Meetings, phone calls, mailed surveys</td>
<td>AS teacher, SP</td>
</tr>
<tr>
<td>To what extent was the SSIS implemented as designed?</td>
<td>Intervention Integrity Rating Scale (IIRS), Student/Teacher input</td>
<td>IIRS form completion Co-facilitator discussion student discussion</td>
<td>AS teacher, SP</td>
</tr>
<tr>
<td>What additional elements were needed to facilitate success for these students with ASD?</td>
<td>Teacher/parent student interviews, ongoing feedback from students, teachers, 8 week parent &amp; teacher SSRS</td>
<td>Ongoing teacher/co-facilitator collaboration, group teacher meetings, individual parent meetings, student group interview, individual student interview, teacher/parent rating scales after 8 weeks.</td>
<td>AS teacher, SP</td>
</tr>
<tr>
<td>Did the students</td>
<td>Parent, teacher</td>
<td>Group meetings</td>
<td>AS teacher, SP</td>
</tr>
</tbody>
</table>

Program Evaluation Broad Questions
Social Skills and Autism

<table>
<thead>
<tr>
<th>like the SSIS?</th>
<th>Student surveys and interviews</th>
<th>individual meetings mailed surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Were there any benefits to teachers?</td>
<td>Teacher interviews and surveys</td>
<td>Individual and group interview, surveys</td>
</tr>
<tr>
<td>Is the program suitable for other levels and schools in our district?</td>
<td>SSRS, SRS Interview, Surveys</td>
<td>Teacher, parent, student administrator completed surveys, ongoing input and interviews, completed rating scales</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SP collected and reported data</td>
</tr>
</tbody>
</table>

**Procedures**

A letter (Appendix A) was sent to parents, inviting their child to participate in a social skills curriculum, SSIS, newly acquired by the school district. The letter stated that the SSIS links assessment to intervention which allows school personnel to assess individual social skills needs. Included with the letter was a permission form, the Social Skills Rating Scale and the Social Skills Responsiveness Scale to be completed by parents. The letter informed parents that the group would begin after the permissions and rating scales were received. Signing the permission to participate indicated that the parent agreed to complete pre-, during and post- intervention rating scales, allowed their child to be videotaped/audiotaped for instructional purposes and allowed the school to schedule the social skills group during a designated Unified Art period two times in a six day cycle, which made it a scheduled class and not a pull-out group. The parent rating scales were scored using the SSIS computer-assist-scoring program which generated a report to parents. Parents were sent the results from their baseline assessment. As each unit was introduced or completed, an information sheet about the unit that included
suggested activities to promote generalization was sent home. The autistic support teacher selected two teachers per student to complete the SSRS. The students completed the SSRS during their first couple of group sessions. In order to ascertain fidelity to Instructional methods, the co-facilitators completed the Intervention Integrity Rating Scale (IIRS) form following each unit. This was used to assess the degree to which the lessons were implemented as designed (Gresham & Elliott, 2008). The components of instructional integrity included introducing the skill and asking questions, discussing the skill and its importance, identifying skill steps, modeling and role playing, reinforcing skill occurrences and correcting inappropriate demonstrations of the skill. The rating choices were as follows: not implemented, limited implementation, partial implementation and full implementation. If a component was partially implemented or less than partially implemented, the component was reviewed to full implementation during the next session. After each instructional unit, the students were asked to discuss their social skills performance. At the beginning of the 7th unit, students were asked to rate themselves, using the Social Skills Progress Chart. All of the previously taught units were represented on the progress chart, allowing each student to rate how well he or she performed previously learned skills within the current instructional unit.

There were several modifications to the SSIS program. The SSIS recommended two 45 minute weekly sessions for each of the instructional units. Because of the middle school six day cycle, this group met twice in a six day cycle rather than twice a week. From the first session, the co-facilitators established a framework for each lesson that began with a review of the group rules, followed by the social skills lesson. Formal
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instruction ended 10 minutes before the end of the period in order to allow for informal
social interaction during which the students selected a game to play. Another
modification was the explicit introduction of Cognitive Behavior theory to the group.
This was done to provide a visual model to help the students identify their thoughts about
an event and the relationship between their thoughts, feelings and behavior. This model
was used to facilitate the participants’ understanding of self and of other behavior and
was referred to throughout the intervention. Although the SSIS recommends two
sessions of instruction per unit, the co-facilitators found that some units required more
sessions. After obtaining mid intervention feedback from teachers, parents and students,
substantial changes were made to the SSIS for the second half of the intervention.

The SSIS contained 20 units covering seven social skill domains:
Communication, Cooperation, Assertion, Responsibility, Empathy, Engagement and Self-
Control. The co-facilitators selected units from the domains for instruction rather than
teaching all of the units in each domain before moving on. This seemed to hold student
interest and allow students’ exposure to more domains. Ten of the units were covered
during the entire intervention, representing six of the domains. During the first 10 weeks
of the intervention the following six units were covered: Introducing Yourself
(Engagement), Taking Turns in Conversation (Communication), Saying Please and
Thank you (Communication), Paying Attention to Others (Cooperation), Following
Directions (Cooperation), Respecting Other People’s Things (Responsibility). During the
second half of the intervention, the following units were taught: Doing the Right Thing
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(Responsibility), Doing Your Part in Group (Responsibility), Doing Nice Things for Others (Empathy), Asking Others to Do Things With You (Engagement).

After 8-10 weeks of intervention, group interviews were conducted with content area teachers and with students separately to get feedback about the program and to elicit their ideas about how to improve the program. Teachers were asked for their support to assist with skill generalization. Teacher suggestions as well as student suggestions were then incorporated into the program. Parents were also invited to a meeting in order to obtain their feedback. Program evaluation surveys were completed by students, teachers and administrators near the conclusion of the intervention (See Appendix B). Students were interviewed as a group (See Appendix C). Surveys were mailed to parents.

Design

Program evaluation was conducted to determine the usefulness of the SSIS with students identified with AS and high functioning autism in a suburban middle school. Quantitative and qualitative data were collected to provide both formative and summative information to answer the broad questions posed by the evaluation. Qualitative information was obtained through interviews and surveys with parents, teachers, administrators and students. Quantitative information was obtained on each student by parent; teacher and student completed rating scales. Because the group was small, single subject design was considered to be an appropriate strategy for monitoring progress and change in response to an intervention (Kazdin, 1998). Pre and post comparisons using the SSRS and SRS would be used to evaluate individual student progress. Teacher and parent SSRS data collected after about 10 weeks was used to inform instruction.
CHAPTER 4

Results

This study examined the effectiveness of the Social Skills Improvement System with middle school students who have been diagnosed with autistic spectrum disorder or educationally identified as a student with social skills deficits. The study utilized both quantitative and qualitative data to determine if the program intervention resulted in social skills improvement and a reduction in problem behaviors. The data were also used to determine specific program modifications needed to meet the unique needs of these students.

Sample Demographics

The sample consisted of six eighth grade students, five male and one female, in a suburban middle school. Five of the students were diagnosed with autistic spectrum disorder; four were specifically diagnosed with Asperger Disorder. One student was educationally identified with a learning disability and social skills deficits. All of the students were in primarily regular education classes. One student was in two learning support classes and one student was in one learning support class. All of the students had previously received social skills instruction in sixth and seventh grades. The parents of these students were asked to participate by completing the SSRS pre, during and post intervention, the SRS pre and post intervention, and a questionnaire about program effectiveness post intervention.
The teachers who participated in this study included eighth grade regular education teachers as well as a learning support teacher and the autistic support teacher. The regular education teachers represented core subjects including English, math, history, science and reading. The eighth grade team of regular education teachers participated in interviews in the middle of the intervention and was invited to complete program evaluation surveys at the end of the intervention. Three regular education teachers completed and returned program evaluation surveys at the end of the intervention. For each student, the same two teachers completed the SSRS pre intervention and near the end of the intervention. A total of eight teachers completed the SSRS in this study, resulting in different teacher data across students. Therefore T1 and T2 completed data for S1, S2, S3, S4, S5, and S6 represent different teachers. The SRS was completed by the autistic support teacher, pre intervention and near the end of the intervention. The autistic support teacher has training and experience with children on the autistic spectrum and is familiar with the reciprocal social behavior difficulties and social communication problems characteristic of autism that are assessed by the SRS. It was felt that this knowledge and experience would facilitate more valid and reliable judgments of the severity of behaviors displayed by the students. Administrators who participated in this study included the Special Education Supervisor, the Special Education Liaison, and also a special education teacher. Program evaluation surveys were completed by three regular education teachers and two administrators at the end of the intervention.

The school psychologist and autistic support teacher (co-facilitators) implemented the SSIS twice in a six day cycle from November to May. Ten instructional
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units were covered during the intervention. During the first 10 weeks of the intervention, the co-facilitators implemented the intervention as designed. To insure appropriate treatment integrity, the intervention integrity rating scale was completed by the co-facilitators at the end of each unit. If any component was not fully implemented, it was repeated during the following session to insure full implementation. There were significant changes to SSIS during the second half of the intervention; during this time the students taught each other the lessons and made their own videotapes under the direction of the co-facilitators.

Goals 1, 2, and 3

The goal for each student who participated in this study was an improvement in social skills and social responsiveness and a decrease in problem behaviors.

Goal 1: For each student, improvement in social skills would be indicated by an increase in standard scores on the SSRS completed by parents, teachers and students pre intervention and near the end of the intervention.

Goal 2: For each student, a decrease in problem behaviors would be indicated by a decrease in the standard scores on the Problem Behaviors scale on the SSRS completed by parents, teachers and students pre intervention and near the end of the intervention.

Goal 3: For each student, improvement in social responsiveness will be noted as indicated by a decrease in T scores on the Social Responsiveness Scale completed by parents and the autistic support teacher pre intervention and near the end of the intervention.
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**Quantitative Data**

**Social Skills Rating Scale Data Analysis.** Pre and post (refers to data collected near the end of the intervention) data from the SSRS was intended to be analyzed, using a paired sample t test to compare pre and post means and determine goal attainment pertaining to improvement in social skills and a decrease in problem behaviors. There was a large amount of missing data due to lack of completion of the SSRS forms by teachers and parents. Without consistent data, statistical analysis could not be conducted.

**Social Responsiveness Scale Data Analysis.** It was intended that pre and post data from the SRS be analyzed, using a paired sample t test to determine if there was an improvement in social responsiveness. Due to the large amount of missing data, statistical analysis could not be conducted.

Because statistical analysis could not be conducted with group data, individual pre and post intervention data were examined, based on percent of change. Tables 3 through 7 provide a summary of these results. When comparing pre- and post- data on the SSRS Social Skills scale, an increase in standard scores indicates improvement in social skills. On the SSRS Problem Behaviors scale, a decrease in standard scores indicates a reduction in problem behaviors. On the SRS, a decrease in T scores indicates improvement in social responsiveness. There are two types of missing data presented in the results. Some forms were not completed at all and some forms were completed but the respondent omitted too many items to yield a domain or subscale score. Missing data are denoted as (na) in the tables.
Table 3

*Teacher 1, Teacher 2, Pre-Post SSRS Social Skills Standard Scores Percent* of Change: percent not tabulated because of missing data (na); positive percent indicates improvement

<table>
<thead>
<tr>
<th>Scale</th>
<th>Teacher 1</th>
<th>Teacher 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td><strong>Social Skills</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student 1</td>
<td>80</td>
<td>92</td>
</tr>
<tr>
<td>Student 2</td>
<td>90</td>
<td>119</td>
</tr>
<tr>
<td>Student 3</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Student 4</td>
<td>82</td>
<td>89</td>
</tr>
<tr>
<td>Student 5</td>
<td>75</td>
<td>73</td>
</tr>
<tr>
<td>Student 6</td>
<td>75</td>
<td>58</td>
</tr>
</tbody>
</table>

Nine pre-post Teacher completed SSRS rating scale comparisons were made for six students collectively. Percent of change in a positive direction on the Social Skills scale was perceived by teachers for three of six students identified as S1, S2, and S4. Percent of change in a negative direction on the Social Skills scale was perceived by teachers for two students identified as S5, S6. No real change was perceived by teachers for S3. No real change is defined as + or – 1.5. Teachers represented as T1 perceived that three students demonstrated an increase in social skills, and two students demonstrated a
decrease in social skills. Because of missing data, information was unavailable for one student. Teachers represented as T2 perceived an increase in social skills demonstrated by two students and no change demonstrated by two students. Data were unavailable for two students because forms were not completed.

Table 4

*Parent and Student Pre-Post SSRS Social Skills Standard Scores Percent of Change:*

*percent not tabulated because of missing data (na); positive percent indicates improvement*

<table>
<thead>
<tr>
<th>Parent</th>
<th>Student</th>
<th>Pre</th>
<th>Post</th>
<th>% of change</th>
<th>Pre</th>
<th>Post</th>
<th>% of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>Student</td>
<td>Pre</td>
<td>Post</td>
<td>% of change</td>
<td>Pre</td>
<td>Post</td>
<td>% of change</td>
</tr>
<tr>
<td>Student 1</td>
<td>60</td>
<td>63</td>
<td>+5%</td>
<td>89</td>
<td>70</td>
<td>-21.35%</td>
<td></td>
</tr>
<tr>
<td>Student 2</td>
<td>114</td>
<td>99</td>
<td>-13.16%</td>
<td>119</td>
<td>120</td>
<td>+.84%</td>
<td></td>
</tr>
<tr>
<td>Student 3</td>
<td>70</td>
<td>74</td>
<td>+5.71%</td>
<td>86</td>
<td>119</td>
<td>+38.37%</td>
<td></td>
</tr>
<tr>
<td>Student 4</td>
<td>--</td>
<td>--</td>
<td>na</td>
<td>97</td>
<td>98</td>
<td>+1.03</td>
<td></td>
</tr>
<tr>
<td>Student 5</td>
<td>--</td>
<td>--</td>
<td>na</td>
<td>89</td>
<td>109</td>
<td>+22.47%</td>
<td></td>
</tr>
<tr>
<td>Student 6</td>
<td>---</td>
<td>--</td>
<td>na</td>
<td>--</td>
<td>---</td>
<td>na</td>
<td></td>
</tr>
</tbody>
</table>

Three pre- post- SSRS rating scales were completed by parents and five pre-intervention and near the end of intervention SSRS rating scales were completed by students. Two students demonstrated an increase in social skills, as perceived by
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parents - S1, S3. One student demonstrated a decrease in social skills, as perceived by parent- S2. Four of 5 students who completed rating scales yielded a percent of change in a positive direction on the Social Skills scale. Two of the four students perceived that they made significant improvement in social skills, reported as 38.37% and 22.47% percent of change respectively- S3, S5. Two students perceived minor or non significant improvement in social skills, reported as .84%, 1.03% of change respectively- S2, S4. These percentages suggest no real change was perceived. One student perceived a significant decrease in socials skills, reported as -22.35% of change-S1. One student did not complete any forms.

Table 5

*Teacher 1, Teacher 2 Pre-Post SSRS Problem Behaviors Standard Scores Percent of Change: percent not tabulated because of missing data (na); negative percent represents improvement*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Teacher 1 Pre</th>
<th>Teacher 1 Post</th>
<th>% of change</th>
<th>Teacher 2 Pre</th>
<th>Teacher 2 Post</th>
<th>% of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Behaviors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student 1</td>
<td>114</td>
<td>107</td>
<td>-6.14%</td>
<td>111</td>
<td>124</td>
<td>+11.71%</td>
</tr>
<tr>
<td>Student 2</td>
<td>96</td>
<td>92</td>
<td>-4.17%</td>
<td>--</td>
<td>--</td>
<td>na</td>
</tr>
<tr>
<td>Student 3</td>
<td>86</td>
<td>87</td>
<td>+1.16%</td>
<td>100</td>
<td>87</td>
<td>-13.00%</td>
</tr>
<tr>
<td>Student 4</td>
<td>98</td>
<td>100</td>
<td>+2.04%</td>
<td>95</td>
<td>91</td>
<td>-4.21%</td>
</tr>
<tr>
<td>Student 5</td>
<td>118</td>
<td>124</td>
<td>+5.08%</td>
<td>--</td>
<td>--</td>
<td>na</td>
</tr>
</tbody>
</table>
On the SSRS problem behavior scale, a decrease (-) in standard scores is associated with a positive outcome. Nine pre-post SSRS ratings were completed by teachers. There was no consistency between Teacher 1 and Teacher 2 ratings. Four of nine (44%) pre-post comparisons indicated that students demonstrated a decrease in problem behaviors. Teachers represented by T1 perceived a decrease in problem behaviors demonstrated by S1, S2. Teachers represented by T2 perceived a decrease in problem behaviors demonstrated by S3, S4. Four of nine (44%) comparisons indicated an increase in problem behaviors. One comparison indicated no change. Teachers represented by T1 perceived an increase in problem behaviors demonstrated by S4, S5 and S6. Student 3 demonstrated no real change, as perceived by T1. Teachers represented by T2, perceived an increase in problem behaviors demonstrated by one student- S1.

Table 6

Parent and Student Pre-Post SSRS Problem Behaviors Standard Scores Percent of Change: percent not tabulated because of missing data (na); negative percent represents improvement

<table>
<thead>
<tr>
<th>Parent</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Student 1</td>
<td>129</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Student</th>
<th>Pre-Score</th>
<th>Post-Score</th>
<th>Pre-Post Change</th>
<th>Pre-Score</th>
<th>Post-Score</th>
<th>Pre-Post Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 2</td>
<td>107</td>
<td>105</td>
<td>-1.87%</td>
<td>100</td>
<td>98</td>
<td>-2%</td>
</tr>
<tr>
<td>Student 3</td>
<td>118</td>
<td>120</td>
<td>+1.69%</td>
<td>95</td>
<td>85</td>
<td>-10.53%</td>
</tr>
<tr>
<td>Student 4</td>
<td>--</td>
<td>--</td>
<td>na</td>
<td>88</td>
<td>86</td>
<td>-2.27%</td>
</tr>
<tr>
<td>Student 5</td>
<td>--</td>
<td>--</td>
<td>na</td>
<td>97</td>
<td>115</td>
<td>+18.56%</td>
</tr>
<tr>
<td>Student 6</td>
<td>--</td>
<td>--</td>
<td>na</td>
<td>--</td>
<td>--</td>
<td>na</td>
</tr>
</tbody>
</table>

Three pre- post- SSRS were completed by parents. Five SSRS were completed by students, pre- intervention and at the end of the intervention. Two students demonstrated a decrease in problem behaviors, as perceived by parents. One student demonstrated an increase in problem behaviors, as perceived by parent. Four of five students who completed SSRS rating scales indicated that they perceived a decrease in problem behaviors that they had exhibited. One student rating represented a perceived increase in problem behaviors.

For each student, goal 1 was an improvement in social skills and goal 2 was a decrease in problem behaviors. Results from the SSRS pre- post- comparisons are variable and suggest that an improvement in socials skills is not necessarily accompanied by an improvement (decrease) in problem behaviors.
Table 7

SSRS Pre/Post Comparisons of Social Skills and Problem Behaviors For Each Student:
improvement (+) , regression (-)  no significant change (=),  missing data (?).

<table>
<thead>
<tr>
<th>Student</th>
<th>SSRS SS/PB</th>
<th>Social Skills (SS) T1</th>
<th>Problem Behaviors(PB) SS/PB T2</th>
<th>Problem Behaviors(PB) SS/PB P</th>
<th>Problem Behaviors(PB) SS/PB S</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>S2</td>
<td>+</td>
<td>+</td>
<td>?</td>
<td>?</td>
<td>-</td>
</tr>
<tr>
<td>S3</td>
<td>?</td>
<td>=</td>
<td>=</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>S4</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>S5</td>
<td>-</td>
<td>-</td>
<td>=</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>S6</td>
<td>-</td>
<td>-</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

An improvement in social skills accompanied by an improvement in problem behaviors was perceived for S1 by two respondents and for S2, S3, S4 and S5 by one respondent each. Inconsistent results between social skills and problem behavior improvement were perceived for S1, S2, S3, and S4 by two respondents each. Consistently negative data were perceived for S5 and S6 by one respondent each. Overall, more inconsistent results were obtained pertaining to improvement in social skills accompanied by improvement in problem behaviors, as determined by data from the SSRS.
Social Skills and Autism

Table 8

*Teacher and Parent Pre-Post SRS T Score Percent of Change: percent not tabulated

because missing data (na); negative percent represents improvement

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Student 1</td>
<td>--</td>
</tr>
<tr>
<td>Student 2</td>
<td>--</td>
</tr>
<tr>
<td>Student 3</td>
<td>68</td>
</tr>
<tr>
<td>Student 4</td>
<td>57</td>
</tr>
<tr>
<td>Student 5</td>
<td>--</td>
</tr>
<tr>
<td>Student 6</td>
<td>60</td>
</tr>
</tbody>
</table>

A decrease in standard scores on the SRS indicates change in a positive direction.

Three pre- post- teacher rating scale comparisons and three pre- post- parent rating scale comparisons were made. Two students demonstrated improvement in social responsiveness, as perceived by the teacher. One student demonstrated a regression in social responsiveness, as perceived by the teacher. Two of three students demonstrated improvement in social responsiveness, as perceived by parents. One student demonstrated minimal improvement or no real change, as perceived by the parent.
Teacher, parent and student pre- and post- subscales scores from the SSRS Social Skills and Problem Behavior scales were compared for each student in to determine if there was any change and direction of change on specific subscales following the intervention. If a respondent omitted too many items from a particular scale, the score could not be tabulated (Gresham & Elliott, 2008). Forms not completed or too many omitted items precluding subscale scoring is noted as missing data in the following tables. Results are presented in Tables 9-12

Table 9

*Direction of Change Teacher 1, Teacher 2 Pre Post Comparisons for Student (S1...S6)*

*SSRS Social Skills Subscales: improvement (+), regression (-), no change (=), missing data (?)*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Teacher 1</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Teacher 2</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S1</td>
<td>S2</td>
<td>S3</td>
<td>S4</td>
<td>S5</td>
<td>S6</td>
<td>S1</td>
<td>S2</td>
<td>S3</td>
<td>S4</td>
</tr>
<tr>
<td>Communication</td>
<td>+</td>
<td>=</td>
<td>?</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>?</td>
<td>=</td>
<td>=</td>
<td>=</td>
</tr>
<tr>
<td>Cooperation</td>
<td>+</td>
<td>+</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>-</td>
<td>?</td>
<td>=</td>
<td>-</td>
<td>=</td>
</tr>
<tr>
<td>Assertion</td>
<td>=</td>
<td>=</td>
<td>?</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>+</td>
<td>?</td>
<td>=</td>
<td>=</td>
</tr>
<tr>
<td>Responsibility</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>?</td>
<td>=</td>
<td>+</td>
<td>=</td>
</tr>
<tr>
<td>Empathy</td>
<td>+</td>
<td>+</td>
<td>?</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>?</td>
<td>=</td>
<td>=</td>
<td>=</td>
</tr>
<tr>
<td>Engagement</td>
<td>-</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>?</td>
<td>=</td>
<td>=</td>
<td>=</td>
</tr>
</tbody>
</table>
Pre, post intervention T1, T2 comparisons indicating direction of change on the SSRS social skills subscales were completed for all students. Student 1 demonstrated behaviors associated with improvement as perceived by T1 on the following subscales: Communication, Cooperation, Empathy and Self Control. Student 1 demonstrated behaviors associated with improvement, as perceived by T2 on Assertion. Behavior demonstrated by S1 associated with regression on the Engagement subscale was perceived by T1. All other subscale comparisons for S1 by T1 and T2 indicate no change. Student 2 demonstrated behaviors associated with improvement, as perceived by T1 on the Cooperation, Empathy and Self Control subscales. No change was perceived by T1 for S2 on any other subscales. T2 data for S2 were not available because the forms were not completed. Student 3 demonstrated no change, as perceived by T1 on Cooperation, Responsibility, and Engagement. Incomplete T1 data precluded comparisons on the other subscales. T2 comparisons indicate that no change was demonstrated by S3, as perceived by T2. Student 4 demonstrated no change in behavior associated with any scale, as perceived by T1. T2 comparisons indicate that S4 demonstrated change associated with improvement on the Responsibility subscale, as perceived by T2. Behavior demonstrated by S4 associated with regression on the Cooperation subscale was perceived by T2. All other subscale comparisons by T2 indicated no change. Behavior demonstrated by S5 associated with regression on the Self Control subscale was perceived by T1. S5 demonstrated no change as perceived by T1 on any other subscale. S5 demonstrated no change as perceived by T2 on any subscale.
Social Skills and Autism

and; the Self Control subscale could not be tabulated due to missing data. S6 demonstrated behavior associated with regression on the Cooperation subscale, as perceived by T1. S6 demonstrated no change on any other subscale, as perceived by T1; the Self Control subscale could not be tabulated due to missing data. T2 data for S6 were not available because the form was not completed. No agreement between T1 and T2 comparisons for any student regarding improvement or regression was found on any subscale.

Table 10

*Direction of Change Teacher 1, Teacher 2 Pre Post Change for Student (S1,...,S6) SSRS Problem Behavior Subscales: improvement (+), regression (-), no change (=), missing data (?)*  

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Teacher 1</th>
<th>Teacher 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S1 S2 S3 S4 S5 S6</td>
<td>S1 S2 S3 S4 S5 S6</td>
</tr>
<tr>
<td>Externalizing</td>
<td>= = = = - -</td>
<td>- ? = = ? ?</td>
</tr>
<tr>
<td>Bullying</td>
<td>= = = = = =</td>
<td>= ? = = = ?</td>
</tr>
<tr>
<td>Hyper./Inattention</td>
<td>= = = = = =</td>
<td>= ? = = = ?</td>
</tr>
<tr>
<td>Internalizing</td>
<td>= = = = - =</td>
<td>= ? = = - ?</td>
</tr>
</tbody>
</table>
Social Skills and Autism

Student 1 demonstrated improvement in behaviors associated with the Autistic Spectrum subscale, as perceived by T1 and T2. Student 1 demonstrated behaviors associated with regression on the Externalizing subscale, as perceived by T2. S1 demonstrated no change on all other subscales, as perceived by T1 and T2. Student 2 demonstrated no change in behaviors on any subscale, as perceived by T1. Data were not available for S2 by T2 because the form was not completed. S3 demonstrated no change in behaviors associated with any subscale, as perceived by T1 and T2.

Incomplete data pertaining to the Autistic Spectrum scale precluded T1 comparison. S4 demonstrated no change in behavior on any subscale, as perceived by T1 and T2. S5 demonstrated behaviors associated with regression on the Externalizing subscale, as perceived by T1. S5 demonstrated behaviors associated with regression on the Internalizing subscales, as perceived by T1 and T2. S5 demonstrated no change on any other subscale comparisons by T1 and T2. Data were incomplete and precluded scoring of the Externalizing subscale by T2. S6 demonstrated behaviors associated with regression on the Externalizing subscale, as perceived by T1. Incomplete data pertaining to the Autistic Spectrum scale precluded T1 comparison. S6 demonstrated no change in behavior associated with any other subscale, as perceived by T1. Data were not available for S6 by T2 due to the form not being completed. In comparing T1 and T2 perceptions of behavior change, there was agreement between T1 and T2 for S1, indicating improvement in behavior associated with Autistic Spectrum, and agreement between T1 and T2 for S5 indicating perceived regression pertaining to Internalizing behaviors.
Table 11

Direction of Change Parent and Student Pre Post Change for Student (S1 ...S6) SSRS

Social Skills Subscales: positive (+), negative (-), no change (=), missing data (?)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Parent</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S1</td>
<td>S2</td>
</tr>
<tr>
<td>Communication</td>
<td>=</td>
<td>=</td>
</tr>
<tr>
<td>Cooperation</td>
<td>=</td>
<td>=</td>
</tr>
<tr>
<td>Empathy</td>
<td>=</td>
<td>-</td>
</tr>
<tr>
<td>Engagement</td>
<td>=</td>
<td>=</td>
</tr>
<tr>
<td>Self Control</td>
<td>=</td>
<td>-</td>
</tr>
</tbody>
</table>

Student 1 demonstrated improvement on the Assertion subscale, and no change on the other subscales, as perceived by the parent. Student 2 demonstrated behaviors associated with regression on the Assertion, Responsibility, Empathy and Self-Control subscales and no change on the other subscales, as perceived by the parent. Student 3 demonstrated behaviors associated with improvement on the Cooperation and Responsibility subscales and behaviors associated with regression on the communication subscales.
Social Skills and Autism

subscale, as perceived by the parent. All other subscale comparisons indicated no change, based on parent perception. Parent forms were not completed for S4, S5 and S6. On the student-completed rating scales, Student 1 pre, post comparisons indicate perceived regression on Cooperation, Assertion, Responsibility, Empathy, Engagement and Self-Control subscales. No change was indicated on the Communication subscale. Student 2 and Student 4 self-rating comparisons indicate no change on any subscale. Student 3 pre-post-comparisons indicate perceived improvement on the Communication, Cooperation, Assertion and Self-Control subscales. Student 3 indicated perceived regression on the Empathy and Engagement subscales and no change on Responsibility. Student 5 indicated perceived improvement on the Communication subscale and no change on any other subscale. Student 6 did not complete the forms. When matching parent with student, there was agreement between Parent and Student 3 pre-post comparisons, indicating improvement on the Cooperation subscale. No other agreement with respect to improvement or regression was found when matching parent and student pre-post comparisons on the social skills subscales.

Table 12

Direction of Change Parent and Student Pre Post Change for Student (S1....S6) SSRS

Problem Behavior Subscales: positive (+), negative (-), no change (=), missing data (?)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Parent</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Student</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S1</td>
<td>S2</td>
<td>S3</td>
<td>S4</td>
<td>S5</td>
<td>S1</td>
<td>S2</td>
<td>S3</td>
<td>S4</td>
<td>S5</td>
<td>S6</td>
</tr>
<tr>
<td>Externalizing</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>-</td>
</tr>
</tbody>
</table>


No student demonstrated any change in behavior associated with any Problem Behavior subscale based on parent perceptions for S1, S2 and S3. Parent forms were not completed for S4, S5 and S6. Student 1 pre-post-comparisons indicate perceived improvement in internalizing behavior. Student 2 and Student 4 comparisons indicate no perceived change on any problem behavior. Student 3 comparisons indicate perceived improvement on Hyperactivity/Inattention. Student 5 indicated perceived change in a negative direction on Externalizing behavior. Student 6 did not complete the forms.

With the exception of missing data, the other subscale comparisons indicated no change, as perceived by the students.

**Program Evaluation Qualitative Data**

*Mid Intervention Meetings Parent, Teacher, Students.* About 10-12 weeks after the intervention began, feedback was elicited from parents, teachers and students to identify positives and negatives about the intervention and to recommend any modifications that may enhance the intervention. Parents were invited to attend a meeting as a group to discuss their concerns and expectations. No parent was able to attend the meeting; however, two parents, individually, provided feedback. One parent stated that her child liked the group very much. She felt that the group needed to focus
Social Skills and Autism

more on helping students converse with others about non-preferred topics. A second parent stated that her child disliked the group and particularly disliked the video clips because the children in the clips appeared to be much younger than the eighth grade students participating.

The group co-facilitators (School Psychologist and Autistic Support Teacher) met with the team of eighth grade regular education teachers and special education teachers of the students to provide information about the SSIS, to discuss the students’ social difficulties in general and to ask for recommendations to help the students generalize the skills. The instructional topics from the SSIS were presented to the group. The skills of engagement with others and learning to work in groups were lessons the group was working on. The teachers noted that the students tended to work alone when given the choice and not to engage in the cooperative learning activities with peers. They discussed ideas to facilitate engagement with others and decided they would encourage these students to join cooperative learning groups in their classes. Each teacher selected one or two students from the group to mentor with respect to engaging with peers and understanding their role in a group activity. One regular education teacher had observed the group on two occasions and suggested that the group participate in field trips to help them practice and generalize their skills. In response to sharing the parental concern about the video clips from the program, the teachers suggested that the students videotape each other.

In the social skills group, a meeting was held with the students to identify their likes and dislikes about the group and to elicit their recommendations for improving the
Social Skills and Autism

group. Five of six students stated that they liked the group. One student stated that s/he liked the group because s/he was not embarrassed to practice the skills. Dislikes included the following: too much sitting, topics too big and too broad- not what individuals needs, kids in SSIS video clips were too young. One student stated that s/he hated the group because the facilitators were going over things s/he did not need. As a group, the students made the following recommendations: more fun activities, more student involvement and more exciting activities. The co-facilitators presented the teachers’ ideas about taking field trips and having students make the video clips, which all of the students liked. The students decided to invite the teacher who recommended the field trips to the next group meeting to help in planning the activity. Based on all of the mid intervention feedback, the group decided they would like to make their own video clips. The instructors suggested that the students work in groups of three to study the lessons in order to make the video clips representing a positive and negative example of the skill they are working on. As a group of three, the students were expected to teach the lesson to the other group. After each group presented one lesson, the students and co-facilitators discussed whether or not they preferred to have the students or the co-facilitators teach the lessons. The students unanimously preferred teaching the lessons and making the video clips. Therefore, the remainder of the intervention was conducted in this way. The students, the regular education teacher who suggested taking a field trip and the co-facilitators used several classes to plan the field trip.

Teacher, Student, Parent Surveys. An important goal for the researcher was to elicit feedback from the students, parents, teachers and administrators in order to
understand their perceptions and perspectives about the SSIS intervention. Of particular importance in this study is the perception and voices of the students who participated in the intervention. To allow for expression of voice, respondent comments and responses are presented in the tables with summaries and patterns presented following each table.

Post intervention individual surveys were completed by teachers, administrators, students and parents. Teachers and administrators were given surveys to complete. Surveys and post intervention Social Skills Rating Scales were mailed to parents; parents were provided with a stamped return envelope. Students completed individual surveys during one of the group classes. A week later, a group interview with the students was conducted by a mental health technician who was not part of the SSIS instructional program. Results are presented in the Tables 13, 14, 15 and 16.

Table 13

*Summary of Teacher and Administrator Survey Responses Post Intervention: *Completed by Administrators Only*

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are you expectations regarding the short and long term outcomes for</td>
<td>- More comfortable social interaction.</td>
</tr>
<tr>
<td>students who participate in social skills instruction using the SSIS?</td>
<td>- Improvement of social skills, self advocacy, retention of skills.</td>
</tr>
<tr>
<td></td>
<td>- Improved peer interaction so they fit in more seamlessly.</td>
</tr>
<tr>
<td></td>
<td>- Learn appropriate interaction with peers and adults.</td>
</tr>
<tr>
<td>Social Skills and Autism</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td></td>
</tr>
<tr>
<td>Have you observed social skills improvement in your classroom with respect to the students you teach who participated in the program? Please describe.</td>
<td></td>
</tr>
<tr>
<td>- For student to demonstrate improved social skills, depending on their need.</td>
<td></td>
</tr>
<tr>
<td>- Yes, I have seen students work well in their respective groups.</td>
<td></td>
</tr>
<tr>
<td>- I have seen some students emerge with social skills with peers.</td>
<td></td>
</tr>
<tr>
<td>- Yes and no. Some students think before responding. Worked in groups.</td>
<td></td>
</tr>
<tr>
<td>- Yes, the student I was observing began joining lab groups without impetus from me.</td>
<td></td>
</tr>
<tr>
<td>What are the most important social skills for the students to demonstrate?</td>
<td></td>
</tr>
<tr>
<td>- Cooperation with others.</td>
<td></td>
</tr>
<tr>
<td>- Appropriate interaction with peers, ability to handle situation not in usual routine.</td>
<td></td>
</tr>
<tr>
<td>- Appropriately work and communicate with peers.</td>
<td></td>
</tr>
<tr>
<td>- Initiate peer conversation, reciprocal conversation, self advocacy.</td>
<td></td>
</tr>
<tr>
<td>- Sensitivity and appropriate interaction.</td>
<td></td>
</tr>
<tr>
<td>How would you describe a successful outcome?</td>
<td></td>
</tr>
<tr>
<td>- Think before speaking.</td>
<td></td>
</tr>
<tr>
<td>- Communicating and connecting.</td>
<td></td>
</tr>
<tr>
<td>- Student self initiates contact/work with others.</td>
<td></td>
</tr>
<tr>
<td>- Student demonstrates less anxiety.</td>
<td></td>
</tr>
<tr>
<td>- Participation in a reciprocal friendship even if just in school.</td>
<td></td>
</tr>
<tr>
<td>How would you know if a successful outcome demonstrated by a child is related to participation in this program?</td>
<td></td>
</tr>
<tr>
<td>- I wouldn’t, but believe that it is not coincidental that social skills improvement happened when the program started.</td>
<td></td>
</tr>
<tr>
<td>- You would observe students using the skills covered in the program.</td>
<td></td>
</tr>
<tr>
<td>- Specific tasks were performed to meet outcome.</td>
<td></td>
</tr>
</tbody>
</table>
What aspect of the program is socially relevant to you as a teacher/administrator of the children in the program?

- Social interaction with peers practiced in the general environment.
- Classroom interaction,
- Friendship making, perspective taking, Working with peers in groups.

Were aspects of the program too time consuming? Please describe

- Seemed ok,
- No paperwork is ever fun but if it helps the student….

What elements of the program were effective? Ineffective?

- Consistent, based on research, develop and tweak as move forward.
- Have a better understanding of my students social deficits to help guide them.

What additional supports were needed to facilitate skill development in students with AD/HFA?

- Carry over into halls and other classes, Would like to know how my student was progressing elsewhere.
- Need to train regular education teachers to understand how to help generalize skills,
- Monitor in classroom and hallways.

Can the program be modified to improve effectiveness? How?

- More practice in general environment and more checks for generalization of skills.

*Was the program easily implemented with fidelity by the teacher?

- It appears to have been easily implemented.

*Is the program cost effective?

- Yes
Social Skills and Autism

*Is the program recommended for K-5 and 9-12 students in the WCASD? Why?
- I would like it expanded to high school.
- Felt not quite appropriate for high school- too elementary.

* Does student outcome data match parent/teacher expectations regarding outcome for middle school?
- Do not know

The special education supervisor, special education liaison (also a special education teacher) and three eighth grade regular education teachers (of the students) completed the surveys and provided responses pertaining to teacher expectations, observations of skill improvement, importance of skills, social relevance of the program for teachers, effective program elements and suggestions regarding additional supports needed for effective outcomes. The pattern of teacher and administrator expectations regarding short and long term outcomes was consistent with improved social interaction with peers and teachers. Observations of social skills improvement in the classroom were expressed as seeing students work well in groups with their peers. The important social skills identified by respondents to the survey could best be described as working and communicating appropriately with peers. The social skills most relevant to the teacher/administrator were expressed as appropriate social interaction in the classroom and working with peers in groups. An effective program element identified by a teacher was gaining a better understanding of his/her students’ social deficits so that he/she could better guide the students. The summary of responses pertaining to identifying additional supports to facilitate skill development included additional training for teachers to help
Social Skills and Autism

with skill generalization, better monitoring of student behavior in hallways and classrooms, communication among teachers regarding student behavior in other settings.

The theme of appropriate communication with peers and teachers and working well with peers in groups emerged as an important expectation and an observable outcome from the responses to multiple questions on this survey.

Table 14

*Summary of Individually Completed Student Survey Responses Near the Completion of the Intervention*

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you like and dislike about participating in the social skills group?</td>
<td>- I like that I can talk with nice people and create our own lesson plans. I don’t think I dislike any part of Social Skills. &lt;br&gt; - I like being able to review the lesson rather than just taking notes &lt;br&gt; - I dislike it because it is a waste of time. &lt;br&gt; - I liked everything in the group and did not dislike anything &lt;br&gt; - I like that we get to learn about being social. &lt;br&gt; - Dis- mostly</td>
</tr>
<tr>
<td>Were you satisfied with the scheduling of social skills class.</td>
<td>- Yes, it is good for my schedule. I do wish I could do it even more often. &lt;br&gt; - Yes, it fits in the cycle well. &lt;br&gt; - No because I am in it. &lt;br&gt; - Yes, because it did not interrupt my classes &lt;br&gt; - Yes &lt;br&gt; - Yes</td>
</tr>
<tr>
<td>Were the teachers helpful?</td>
<td>- Yes of course; they’re fun too &lt;br&gt; - Yes, they played a key role in my lesson</td>
</tr>
</tbody>
</table>
Social Skills and Autism

Did you appreciate peer feedback?
- Absolutely, It helped me understand how I could go about completing my goals.
- Yes because feedback let me know if the lesson was good.
- I never got any.
- Yes
- Yes
- Sure

Was role playing helpful?
- Yes, it helps me know what I can do in a situation.
- Yes, it shows a possible situation that could happen.
- No because we never did anything helpful for me.
- Yes
- Yes
- No

What social skills are important to you personally?
- Keeping myself from interrupting in class, following directions and being respectful.
- Doing my part in anything because usually I don’t care cause I’m lazy.
- Conversation.
- All of them were helpful to me.
- All of them- most of all- doing nice things for other people.
- Personal

What aspect of the social skills group has been helpful to you?
- Creating our own lesson plans.
- The aspect that I am being treated as an actual student.
- None
- Every aspect of the group has been helpful to me.
- I don’t know.
Social Skills and Autism

What changes would you recommend be implemented in the future to improve the program?
- Not being in guidance class.
- Perhaps we could discuss our daily lives and how we socialize with others.
- Well, maybe include more of a “from the student” perspective where the student explains how of which their social habits are.
- Work on what the students actually need.
- I don’t think there is any change to be made to improve the group.
- None
- Make own videos.

What short term and long term goals do you have for yourself regarding participation in the SSIS program? Did you achieve your goals? How do you know?
- I have a goal to stop interrupting or correcting people. Also I need to stop being silly when I shouldn’t be.
- Doing my part. I actually interact with groups now rather than do the minimum of work.
- I did not set any goals
- The goal I have is to talk to people about what they want to talk about.
- I do not know. I have not thought that far ahead.
- Yes because I stay on topic.

Do you feel that you have learned something about yourself and how you relate to others from participation in the group? Please discuss.
- I do believe that I’ve realized how annoying I am when I interrupt in class. Being aware of that has helped me immensely.
- I communicate better now and I’m not so antisocial now. Well not really sure - from a communication standpoint yes, but personally no.
- No this is a waste of my time. We never did anything I needed help with.
- Yes and now I talk more on the bus with my friends.
- Honestly, no
Social Skills and Autism

Do you feel you understand the behavior of others better as a result of participating in the group?

- Yes

- Yes, now I know why people respect other people’s things and also how to convince myself to [follow] directions so I know what to do.

- Yes because now I can understand a more personal state in others’ social patterns.

- No

- Yes

- Yes

- Yes

Are you more aware of the skill steps involved in certain social skills and situations? Please explain.

- A little bit since we go over the steps in class a lot.

- Well, I would not consider it a skill but yes I know how to converse more appropriate

- Yes, but in life there aren’t any steps, but here there are.

- Yes in certain social skills and situations.

- Yes

- No, skill steps are mixed.

Are you glad that you participated?

- If you haven’t already noticed, yes.

- Yes, because I have established more of a foothold in conversation.

- Heck, No.

- Yes

- Yes

- Semi

Would you recommend the group to others?

- Definitely

- Yes because other people are just as unsure on how to communicate as I used to be.

- Only if they needed help with what was being taught.

- I would because it helped me.

- Yes
All six participants completed the surveys individually. Four of six students indicated that they liked the group. Five of six students were happy with the scheduling of the group twice in a six day cycle. Five of 6 students appreciated peer feedback. Four of six students liked role playing. The students identified specific important social skills that included being respectful, not interrupting, following directions, doing their part in a
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group and making conversation. Aspects of the group that were helpful included creating their own lesson plans and being treated as an actual student. The students’ recommendations for improving the group centered around the idea of including more student input, more student perspective, more student discussion about their experiences and making their own videos. Four of six students felt that they achieved their goals. One student stated she/he did not set any goals. One student stated s/he had not thought that far ahead. Four of six students felt they had learned something. Five of six students felt they understood the behavior of others better. Five of six student responses indicated that they understood the skill steps involved in certain social skills and situations. One student said that there are no skill steps in life, although we have them in group. Five of six students were glad they participated and would recommend the group to others. Four of six students would participate in the SSIS group if offered in high school. One student indicated that she/he would participate in a different social skills group if offered in the high school. One student indicated that the SSIS was a most comprehensible program and would probably not participate if a different social skills group was offered. One student said s/he preferred the SSIS, but more maturity should be added. When asked for additional comments, one student wrote that the group was a waste of time. One student wrote that s/he enjoyed the group.

Overall, these results indicate that the majority of the students perceived participation in the social skills group in a positive light and felt they learned social skills, applied social skills and understood their own behavior and the behavior of others better as a result of participating in group.
### Social Skills and Autism

**Table 15**

*Summary of Individually completed Parent Surveys Post Intervention*

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
</tr>
</thead>
</table>
| What are the risks and benefits of participation in the SSIS for Middle  | Risks- Missing class time, peers noticing they are not in class and teasing them.  
| School Students?                                                          | - Too much information  
|                                                                           | Benefits - Improved social skills, possibly making friends in group  
|                                                                           | - Improved quality of life.  
| With respect to your child’s participation in the SSIS, what are your    | Long term- Make friends at school so child could have people to do age appropriate activities with,  
| short and long term goals for your child?                                 | - Gain coping skills and be able to create and nurture friendships and become a successful, emotionally secure person.  
|                                                                           | Short term- Learning to talk socially with typical peers outside of group.  
|                                                                           | - Make friends and be happier.  
| What are the most important social skills for your child to demonstrate? | - Learning to make and keep a friend.  
|                                                                           | - Understand body language, intonation of others, turn taking and showing an interest in others.  
| How would you define a successful outcome?                                | - My child reaching out to call a schoolmate.  
|                                                                           | - Making and keeping at least 3 friends.  
| Do you notice social skills progress in your child since he/she began the | - Noticed during sports this year, s/he was able to walk up, join and talk to a group of other players. During free time, sat or stood closer to other players.  
| program? Please describe.                                                 | - My child makes more eye contact and notices when it may not be a good time to talk because I am busy and also  

Social Skills and Autism

What do you like and dislike about the program?
- Liked that student input was considered
- Liked that there was a program, liked the kids videotaping.
- Liked the easy to read handouts which made it easy to focus on the same skills at home.

What aspect of the program is personally valuable to you as a parent whose child is participating?
- Liked that parent and student input was asked for and that the facilitators implemented some of the input.
- Liked the verbal and written feedback.
- My child’s improvements are valuable. My child has been in so many social skills groups that I feared s/he would not want to be in another one, but s/he really did well and liked it.
- Dislike - Program is not individualized. Some skills are too basic. My child disliked the younger children in the program video clips.

Were you provided with sufficient communication regarding the curriculum?
- We were provided copies of the weekly work, but we had no idea at all how it was being taught or in what context.
- Yes.

Were you provided with sufficient communication regarding your child’s progress?
- No, progress reports don’t tell much. There was no communication regarding what was actually being taught.
- Yes.

What program elements were effective? Ineffective.
Effective-students videotaping each other.
- Unit handouts, group work with peers.
Ineffective - Use of younger children in the programs video clips, lack of effective communication between co-facilitators and parents.
Ineffective – Nothing.
What additional supports are needed to facilitate skill development and generalization?

- More training for teachers, more effective communication between facilitators and teachers if teachers are going to help generalize skills. Social skills teacher should be in the classroom helping to generalize skills and model for teachers how to help students generalize skills. Hard to know if program was effective really; what parts for a parent? Progress reports do not tell much and lack of communication makes it hard to know how things were taught and what was effective.
- Each parents indicated that since his/her child receives other services, such as mobile therapy or behavior specialist, it is difficult to determine if positive outcomes are related to the SSIS or are due to a combination of all services.

Do you feel the SSIS was an effective program that should continue to be offered at the Middle school level?

Elementary? High School?

Effective –Yes, Middle School -Yes Elementary- not sure, High School- Yes - I cannot make a recommendation.
I think it is important for the district to use a research based program.

Two of six parents completed the surveys. Both parents indicated that it was very important for their child to make friends. This was expressed as an expectation of the program, an important skill and was defined as a successful outcome. Both parents liked the idea that student and parent input was elicited, considered and applied. One parent felt that the feedback and handouts were helpful. One parent felt that there was little feedback/communication and the handouts were not helpful. Parents felt that more training for teachers was needed to facilitate skill generalization. One parent felt that
more communication between the facilitators and parents was needed for parents to help with skill generalization. One parent felt that the social skills teacher should be in the classrooms to collect data, and to model for teachers how to generalize skills. Both parents felt that their child made progress but felt it was difficult to determine if progress was due to participation in the SSIS or due to a combination of therapies and services their child received.

*Student Group Interview.*

Table 16

**Summary of Student Group Interview Near Completion of Intervention**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
</tr>
</thead>
</table>
| Do you like participating in the social skills group? | Like-  
- Doing the videos, watching the videos, teaching the lessons with a different group each time.  
- Making our own videos.  
- The fact that students interpret scenarios.  
- Being in group, we do interesting things, like make our own videos.  
  Had fun.  
- Being here. |
| Are you comfortable participating in the group? | - All of the students replied they were comfortable.  
Reasons given-  
- Similar interests  
- I knew everyone  
- The students will keep what is said confidential. |
| Explain.                           | Four students said it was enough. |
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One student said s/he would like to be in group more because it is so much fun.

What have you learned?

- Not to talk about what YOU want to talk about all the time and talk about something else
- Respect other people’s things and follow directions.
- Don’t have to be so lengthy in conversations.
- Stuff
- Nothing

What social skills are important to you personally?

- Being able to communicate well.
- Show you are listening and express feelings appropriately.
- All of the social skills are important because they help me to talk more on the bus and at lunch.
- All
- None

Is there any part of the instruction that helps you remember and apply the skills? Describe.

- Making the videos helped him/her remember because h/she tends to learn things easier visually.
- Teaching the steps and walking them through with the other students helped.
- All parts of instruction helped him/her to remember.
- Two students said no.

What changes would you recommend to make the social skills instruction better?

- More student led activities.
- Allow students their freedom and let them build off it.
- More discussions.
- Two students said no changes to recommend.
Social Skills and Autism

How would you compare the teacher led instruction to the student led instruction?
- Student led activities were definitely better.
- I think a student picks up things better if educated from peers.
- The teacher led instruction is kind of boring because adults don’t always know what is going on socially these days. The student led instruction is lots more interesting.
- I wouldn’t
- We got to make videos.

Did the field trips help you use your social skills?
Four students said yes, one said no

What did you like/dislike about the field trips?
- I liked going to a restaurant.
- Disliked nothing.
- Liked walking around town, liked experiencing high school.
- I liked that I can just relax and learn, tension is lost.

What should be included in the instruction to help you use your skills outside of this group?
- All you need to do is be aware of situation and assess it.
- Not sure
- I don’t know.
- Nothing (two students)

What particular skill lesson do you feel has been important for you individually?
- All of it.
- Doing your part in a group. (two students)
- Don’t know

Do you invite people to do things with you more often now as a result of being in the group?
Three students said yes, one said no, one said I don’t know.

What is one thing you will try to do more often as a result of being in this group?
- Try to talk about what others want to talk about.
Social Skills and Autism

- Be social.
- Not act like an idiot
- Try to get to know people all by myself.
- Make actual friends

Do you perform your skills outside of group? Has the group helped with this? Explain.

- Yes, I take turns in a conversation.
- Yes, I believe this was accomplished.
- Yes I did try to talk with a kid that I did not know very well. It helped a lot.
- No, because I do not bother to use them.
- Yes maybe I am getting out of guidance.

What is one behavior you need to work on in order to engage more with other students?

- I need to work to not talk about baseball all the time.
- Stay on topic.
- Not make people feel bad.
- Not interrupt people.
- I don’t know.

Has the group helped you understand the behavior of other people better?

Four students said yes, one student said no.

What do you want other students to understand about you?

- I want others to understand that I play baseball and umpire and play violin.
- That I am not an outcast.
- That just because someone is different does not mean that you should not socialize with them.
- Nothing.
- Personal.

What do you want parents and teachers to understand about you?

- I want them to understand that I work in class and play baseball, umpire and play the violin so they know how busy I am all the time.
Social Skills and Autism

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you plan to participate in social skills group next year?</td>
<td>Three students said yes, two said no.</td>
</tr>
</tbody>
</table>
| How could parents, teachers, and peers help you with social skills?    | - Saying not to talk about baseball all the time.  
- I don’t know.  
- To not crowd me, just let me do my own thing.  
- Tell me what is appropriate and inappropriate socialization.  
- I don’t know. |
| Additional comments or suggestions?                                     | None     |

Five of six students were present for the group interview. Results from the group interview indicate that the students generally like the group, liked making their own videos and teaching the lessons. They expressed the idea that they were comfortable in group and learned not to talk only about their own interests. They identified social skills that were important such as being able to communicate, listen to others and express feelings appropriately. The students preferred the student led activities and felt they were better than teacher led activities. Four of five students liked the field trips. One student felt that all of the lessons were important and two students felt that learning to do their part in group was a particularly important lesson.

Four of five students expressed the idea that the group has helped them perform their skills outside of group. They try to take turns in conversation. Three of five students expressed the notion that they invite people to do things more as a result of being
in group. Other things they try to do include talking about what others want to talk about, being more social, acting appropriately and making friends. Four of five students felt that the group helped them understand the behavior of others better. Two students could not identify any aspect of the program that helped them remember and apply the skills. One student felt that making the videos helped him/her remember and apply the skills. Another student felt that learning the skills steps helped him/her remember to apply the skills.

The students shared their thoughts about what they wanted others to know about them. They wanted to be understood by other students as a person who engages in various activities, as someone who is not an outcast, as someone who is different but someone with whom they can socialize. The students wanted parents to understand that they have busy lives, that there is such a thing as having enough friends, and that they have faults, but they are intelligent. The students expressed the idea that parents, teachers and peers can help them by reminding them not to talk about preferred topics, giving them space to do their own thing and reminding them about appropriate and inappropriate socialization.

**Goal Attainment Scaling.** After eight to ten weeks of intervention, each student established a specific goal. Descriptions of each goal and degrees of improvement and regression were developed by the school psychologist in consultation with the Autistic Support Teacher and a Regular Education Teacher. Retrospective assessments of pre-during and post- intervention behavior pertaining to the student established goal was obtained from the Autistic Support teacher and a Regular Education Teacher; this is presented as Ta and Tb respectively in Table 17. In general, 0 meant that the student met
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expectations for that goal. If the student performed much better than expected and was able to generalize behavior, a rating of +2 was given. If the student performed in a way that was better than expected, a rating of +1 was given. If the student performed worse than expected, a rating of -1 was given. If the student performed much worse than expected, a rating of -2 was given. The specific goals, descriptions of improvement and regression and results from the two teacher ratings are presented in Tables 16 and 17.

Table 17

*Individual Student Goals and Goal Attainment Scaling*

<table>
<thead>
<tr>
<th>Student Goal</th>
<th>Goal Attainment Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 Stop Interrupting and correcting peers in class.</td>
<td>+2 Student will listen to peers’ opinions in class without interrupting 75% of the time in class over 2-3 weeks.</td>
</tr>
<tr>
<td></td>
<td>+1 Student will reduce interrupting behavior and listen to peers without correcting 50% of the time in class over 2-3 weeks.</td>
</tr>
<tr>
<td></td>
<td>0 Student will self-tally interrupting behavior in class and reduce interrupting behavior for 25% of the time in class for 2-3 weeks.</td>
</tr>
<tr>
<td></td>
<td>-1 Interrupting behavior is not reduced.</td>
</tr>
<tr>
<td></td>
<td>-2 Interrupting behavior increases.</td>
</tr>
<tr>
<td>S2 Doing my part in a group.</td>
<td>+2 Communicate and carry out role in a group activity and understand the role of others in the group 75% of the time over a 2-3 week period.</td>
</tr>
<tr>
<td></td>
<td>+1 Student independently chooses to work with a group 2 out of 3 opportunities over 2-3 week period.</td>
</tr>
<tr>
<td></td>
<td>0 With prompting from teacher, student will participate in group learning experiences 2 out of 3 opportunities</td>
</tr>
</tbody>
</table>
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over a 2-3 week period.

-1 Student chooses to work alone 2 out of 3 opportunities

-2 Student always chooses to work alone.

S3 Start and maintain conversation with peers.

+2 Student will start and maintain conversation with peers across classroom and lunch settings 75% of the time, over a 2-3 week period.

+1 Student will establish a set of topics s/he can use as conversation starters to use in class or at lunch.

0 Student will select one student and start a conversation that lasts for 3 volleys (a volley is one statement to another person).

-1 Student will ask a student about homework or a sports activity.

-2 Student will not initiate conversation with peers, although s/he does respond.

S4 Talk about what others want to talk about.

+2 Student will carry on conversation for 10 minutes with a peer or adult about a topic of interest to the other person, repeatedly over 2-3 week period

+1 Student will independently talk with a peer about his or her interest for 3-5 volleys.

0 Student will talk with an adult or peer about a topic of interest to him or her that includes at least 3 volleys with adult prompting.

-1 Student will ask an adult or a peer a question to find out his or her interests.

-2 Student will repeatedly talk about his/her interests in response to a conversation started by others about their interests.

S5 Stay on topic

+2 Student is able to stay on topic when talking one on one and in class/group discussions 75% of the time over a 2-3 week period.

+1 Student is able to stay on topic in classroom discussions 50% of the time over a 2-3 week period.

0 Student is able to stay on topic for 3-5 volleys with another individual.
-1 Student is off topic when talking with an individual.

-2 Student continually is off topic during classroom conversations.

S6 Stay on topic  
+2 Student is able to stay on topic when talking one on one and in class/group discussions 75% of the time over a 2-3 week period.

+1 Student is able to stay on topic in classroom discussions 50% of the time over a 2-3 week period

0 Student is able to stay on topic for 3-5 volleys with another individual.

-1 Student is off topic when talking with an individual

-2 Student continually is off topic during classroom conversations.

Table 18

*Individual Goals and Goal Attainment Scaling Results from Two Teacher Ratings Pre, During and Post Intervention Obtained Retrospectively.*

<table>
<thead>
<tr>
<th>Student Goal</th>
<th>Teacher Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre, Ta, Tb</td>
</tr>
<tr>
<td></td>
<td>During Ta, Tb, Ta, Tb Post</td>
</tr>
<tr>
<td>S1 Stop Interrupting and correcting peers in class.</td>
<td>-1, -1</td>
</tr>
<tr>
<td></td>
<td>-1, -1</td>
</tr>
<tr>
<td></td>
<td>0, 0</td>
</tr>
<tr>
<td>S2 Doing my part in a group.</td>
<td>-2, -1</td>
</tr>
<tr>
<td></td>
<td>0, 0</td>
</tr>
<tr>
<td></td>
<td>+1, +1</td>
</tr>
<tr>
<td>S3 Start and maintain conversation with peers.</td>
<td>-2, -2</td>
</tr>
<tr>
<td></td>
<td>-1, -1</td>
</tr>
<tr>
<td></td>
<td>0, +1</td>
</tr>
<tr>
<td>S4 Talk about what</td>
<td>-2, -2</td>
</tr>
<tr>
<td></td>
<td>-2, -2</td>
</tr>
<tr>
<td></td>
<td>-2, -2</td>
</tr>
</tbody>
</table>
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others want to talk about.

S5 Stay on topic
-2 -2 -1 -1 0 0

S6 Stay on topic
-1 -1 0 0

The results of the teacher ratings of student goals indicate that five of six students improved their behaviors pursuant to their goals. For one student, the behavior remained the same and he/she did not attain his/her goal. Four of five students met expectations regarding their chosen goal and one student exceeded his or her goal, based on both teacher ratings.
This study examined the effectiveness of the Social Skills Improvement System (SSIS) (Gresham & Elliott, 2008) with six eighth grade middle school students who had been diagnosed with ASD or identified with social skills deficits. A significant amount of research exists indicating that individuals with social skills deficits are at risk for social and emotional problems (Dodge, 1993; Meyer, 2006; Quiggle, Garber, Panak, Dodge, 1992; Turkat, Keane, Thompson-Pope, 1990). Children with ASD require direct, systematic instruction to facilitate the development of social understanding and social functioning (Myles, 2005; Sansoti et al, 2010). The SSIS was chosen because it is a research-based program that incorporates methods of instruction that encompass strategies consistent with those derived from three theoretical frameworks -Theory of Mind, Weak Central Coherence and Executive Functioning that purport to explain social skills deficits in children with ASD. The authors of the SSIS, Gresham and Elliott (2008), contend that teaching developmentally appropriate social skills will facilitate healthy interactions in the social world, as well as reduce the emotional and behavioral problems that these children experience.

There were three goals for each student participant in the SSIS: Goal 1- Improvement in social skills; Goal 2 -Decrease in problem behaviors; Goal 3- Improvement in social responsiveness. In addition to these three goals, each student established a personal goal. A program evaluation model was implemented to identify the important elements and modifications that may be needed to enhance outcomes for students and to identify the expectations of the stakeholders. Stakeholders were asked to
assess the risks and benefits of the SSIS for the students, and to identify aspects of the SSIS that were personally valuable to them. Multiple sources of data were used to assess outcomes. Outcomes associated with Goals 1 & 2 were primarily determined by the pre/post (near the end of the intervention) comparisons of SSRS parent, teacher and student rating scales. Attainment of Goal 3 was determined by comparisons of the pre- and post-SRS parent and teacher ratings. Goal attainment scaling provided a retrospective assessment of behavior pertaining to each student’s established goal. Interviews and surveys completed by parents, teachers and students were used for formative and summative assessment to determine the value of the program for these students and to decide if the program could be used with similar students within the school district at other levels and in other buildings.

**Review of Results**

Missing data precluded statistical analysis of group pre-and post- comparisons of the SSRS and the SRS to determine if there was improvement in social skills and social responsiveness and a decrease in problem behaviors. As a result, individual pre- and post-intervention data were examined based on percent of change. Individual results varied across subjects. For each subject, there was variation depending upon respondent-parent, teacher 1, teacher 2 and student. Data from individual student surveys and goal attainment scaling assessments provided supplementary information to illuminate an understanding and interpretation of the outcomes. Formative and summative program evaluation data gleaned from the student, parent, and teacher surveys and from student and teacher group interviews produced several themes that informed the broad questions addressed by program evaluation (See Table 2).
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**Program Evaluation-Broad Questions.** In addition to the quantitative data, formative and summative program evaluation data were collected to answer the broad questions proposed by this study.

*Did the intervention result in improved social skills?* From the multiple sources of outcome data presented for each student, 47% (See Table 19) of the data indicates that the students demonstrated improved social skills. Four students expressed the idea that the group helped them perform their skills outside of group. Five students expressed the thought that they understood the behavior of others better as a result of participation in the group. Although inconsistent with the previous statement, two students expressed the notion that they did not learn anything about themselves or about others from participation in the group. Although the responses on the parent and teacher surveys suggest caution in linking any improvement to the intervention, their responses indicate that they felt the intervention, at the very least, contributed to the improvement demonstrated by the students.

*Were the parents satisfied with the program?* Although only two of six parents completed the survey, their responses indicated that they were happy that a research-based program was being offered and that parent and student input was solicited. One parent felt that more specific communication was needed pertaining to individual student needs, progress and strategies for generalization at home. Teacher training to facilitate generalization was a recommendation. The other parent felt that the handouts pertaining to the skills being taught were helpful and sufficient to support skill practice at home. Both parents expressed the notion that it was difficult to determine if progress was due to
participation in the intervention or to a combination of participation and other services their children received.

To what extent was the SSIS implemented as designed? The SSIS was implemented as designed for the first 8 weeks of the intervention. Co-facilitators completed treatment integrity forms following the completion of each unit as a means of insuring that the lesson was taught appropriately and included all of the elements and skills steps outlined in the program. In addition to checking that each lesson was delivered appropriately, co-facilitators discussed their observations of student responses and behaviors during instruction. This information was used to enhance student involvement in subsequent sessions. The delivery of the SSIS was substantially changed during the second half of the intervention, following teacher and student group interviews. Using the SSIS lessons and guidelines for instruction, the students formed groups of three, made their own videotapes and taught the lessons to each other. The role of the co-facilitators changed from instructor to coach as they worked with the groups to help the students understand, practice and teach the lessons.

What additional elements were needed to facilitate success for these students with ASD? With input from teachers, students and parents, it was determined that instruction needed to be fun, and to incorporate some experiences from the real world. The students wanted the instruction to be more truly from their perspectives, and they were particularly unhappy with the videotapes from the SSIS. They felt that the student/actors in the videotapes were too young, which they found to be demeaning to them as 8th graders. As a result, the students chose to make their own videotapes in order to illustrate the positive and negative examples for each lesson. They also agreed to take a
field trip and invited the regular education teacher who suggested this to come to their group and help plan the trip. The increased student involvement during the second half of the intervention resulted in more enjoyment on behalf of the students. They came to class eagerly, excited about learning the lessons, and about role playing the positive and negative examples of the lessons. The co-facilitators noted that there was more laughter and engagement among students. In addition to these modifications, the regular education teachers focused on encouraging these students to engage with others in the classroom during cooperative group activities. Targeting this skill and involving all of the core, regular education 8th grade teachers were important strategies for skill generalization.

**Did the students like the program?** During the mid intervention group interviews, five of six students indicated that they liked the group. One student stated that he/she liked the group because he/she was not embarrassed to practice skills. They identified their dislikes as: too much sitting, topics too big and broad- not what individuals will need- and the kids in the video clips were too young. Results from the student surveys near the end of the intervention indicate that four of six students liked the intervention. One student expressed the thought that it was a waste of time and another student indicated that he/she mostly disliked it. Some of the aspects of the intervention that the students liked included talking with each other, learning about being social, getting peer feedback, getting teacher help with lessons, role playing, creating their own lessons, and “being treated as an actual student”.

**Were there any benefits to teachers?** One teacher expressed the idea that the intervention helped him understand his students’ behaviors better so that he could more effectively intervene and guide them. The behaviors that teachers felt were important for
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the students to demonstrate in the classroom included working with peers in groups, demonstrating perspective taking, sensitivity to others, and appropriate peer interaction. The lessons involved in the intervention were consistent with those that the teachers identified as socially relevant to appropriate functioning in the classroom. The teachers who completed the surveys expressed the thought that they felt there was an improvement in classroom functioning as a result of participation.

Few of the teachers completed the surveys and a number of teacher rating scales were not completed, suggesting that the amount of paperwork requested was a challenge for them, given their time constraints. Some of the teacher rating scales were only partially completed which may have occurred for various reasons. The teacher may have felt that he did not know the student well enough to answer the question. In addition, teachers may not have had an opportunity to observe the behavior in question or may have felt the question was unclear.

**Is the program suitable for other levels and schools within our district?** Two administrators expressed opposite views pertaining to this question. One felt that he would like to see the program expanded to the high school, but the other administrator expressed the thought that it was too elementary for the high school. Parent responses suggest that middle or elementary school may be most appropriate for this program. Four of the students indicated that they would participate if the SSIS were offered in high school. Two students indicated they definitely would not participate in the SSIS or any other social skills program. One student expressed the thought that the SSIS was the most understandable social skills program that he/she had participated in. One student felt that a “little more maturity” should be added to the SSIS for high school.
facilitators of the intervention felt that the SSIS would need to include additional elements relevant to the social challenges of high school life in order to engage these students. Not only would the content need to be modified to address the specific social issues faced by high school students such as dating, gender identity, drug use, decision making, involvement in school activities, peer pressure, and parent concerns, but also that the manner of instruction would need to be student centered.

The students who participated in this group wanted more student led activities and more lessons from the students’ perspectives. The co-facilitators recommended that the SSIS be extended to the other middle school in the district for children with social deficits. It was also recommended that the schools consider the modifications that were implemented during this intervention as well as conduct program evaluation to identify the modifications needed to meet the unique needs of the student participants in the other middle schools. The co-facilitators offered to serve as consultants to the facilitators in the other middle schools.

**Themes and Patterns From the Data.** Expectations and goals were different for parents and for teachers. Teachers were concerned with student behaviors that would facilitate appropriate classroom interaction. Specifically, they wanted to see the students engage with others in class, interact with peers and adults appropriately and work in groups cooperatively. Parent goals for their children centered around friendships. Parents wanted their children to participate with peers in social activities and to have friends to interact with informally. Teachers and parents were seeking support for skill generalization strategies specific to the skills that were important to them in their respective settings. It was recommended that regular education teachers be trained in...
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classroom strategies to support skill generalization and that the social skills instructors should model strategies in the classroom. Teachers expressed a desire for more communication among teachers to determine how their students were doing in other classes. One parent felt that more information about how skills were being taught would have helped him/her support skill generalization at home.

Students wanted the group to be more truly “from the students” perspective. They valued the student led instruction and felt they learned more from each other than from the teacher led instruction. The students wanted the group to include more fun activities and they responded well to being part of the decision-making process in planning the field trip and making the video clips.

Students clearly had expectations about what they wanted other students, their parents and teachers to know about them. They wanted to be acknowledged for their differences and similarities with their peers. They expressed a pervasive desire for acceptance. One student wanted other peers to know, “That I am not an outcast.” One student wrote: “That just because someone is different does not mean that you should not socialize with them.” Another student wrote: “I want others to understand that I play baseball and umpire and play violin.” These comments indicate a strong desire for social acceptance, social interaction and friendship. With respect to the adults in their lives, they want acceptance, but they also appear to be seeking distance and independence. The following comments were responses to the survey question, ‘What do you want parents and teachers to understand about you?’ “I want them to understand that I work in class and play baseball, umpire and play the violin so they know I am busy all the time.” “That there is such a thing as enough friends.” “That I am forgetful and lazy, but I am
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intelligent.” In addition to the special needs that these students have, they also struggle with the same adolescent issues as their nondisabled peers, which make their challenges more acute. They want to interact socially with peers and be accepted by their peers. As typical adolescents, they are seeking independence from the adults in their lives. Adult intention to help may be interpreted by the student as criticism and viewed as unsupportive. Balancing distance and support may be particularly challenging for parents and teachers of adolescents with ASD.

Student outcomes. Because of the large amount of missing data, group data could not be analyzed statistically. Pre- and post- intervention SSRS and SRS comparisons completed by parents and teachers, and SSRS comparisons completed by students indicate a lack of consistency of outcomes among respondents. This lack of consistency suggests that, as a group and individually, teachers, parents and students may identify and define desired outcomes differently.

Individual student outcomes. Multiple sources of data including quantitative and qualitative outcome data were used to provide meaningful understanding of intervention results for each individual student. Thirteen data sources were considered for each student. The quantitative data includes direction of change on the pre/post comparisons of T1, T2, parent and student SSRS social skills and problem behavior scales as well as parent and teacher pre-, post- comparisons pertaining to the SRS. Qualitative data include the results from the goal attainment scaling completed by two teachers for each student as well as individual responses on the student surveys to the following question: “Do you feel that you have learned something about yourself and how you relate to others from participation in the group?” For each student, the percent
of positive change, negative change, no change and undetermined outcomes of 13 possible outcome sources is presented in the table below. Fictitious names and gender are assigned for ease of discussion.

Table 19

Percent of Positive Change, Negative Change, No Change and Undetermined Outcomes for Each Student Based on 13 Outcome Sources

<table>
<thead>
<tr>
<th>Student</th>
<th>Positive Change</th>
<th>Negative Change</th>
<th>No Change</th>
<th>Undetermined Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 Sally</td>
<td>9/13 69.23%</td>
<td>2/13 15.38%</td>
<td>1/13 7.69%</td>
<td>1/13 7.69%</td>
</tr>
<tr>
<td>S2 Barbara</td>
<td>8/13 61.53%</td>
<td>1/13 7.69%</td>
<td>1/13 7.69%</td>
<td>3/13 23.08%</td>
</tr>
<tr>
<td>S3 Terry</td>
<td>8/13 61.53%</td>
<td>2/13 15.38%</td>
<td>2/13 15.38%</td>
<td>1/13 7.69%</td>
</tr>
<tr>
<td>S4 John</td>
<td>6/13 46.15%</td>
<td>3/13 23.08%</td>
<td>1/13 7.69%</td>
<td>3/13 23.08%</td>
</tr>
<tr>
<td>S5 Elton</td>
<td>3/13 23.08%</td>
<td>4/13 30.77%</td>
<td>1/13 7.69%</td>
<td>5/13 38.46%</td>
</tr>
<tr>
<td>S6 Brett</td>
<td>3/13 23.08%</td>
<td>3/13 23.08%</td>
<td>0/13 0.0%</td>
<td>7/13 53.85%</td>
</tr>
<tr>
<td>Total</td>
<td>37/78 47.44%</td>
<td>15/78 19.23%</td>
<td>6/78 7.69%</td>
<td>20/78 25.64%</td>
</tr>
</tbody>
</table>

The importance of using multiple sources of outcome data is illustrated by Table 19. Although the large amount of missing data precludes complete and full interpretation of results, the majority of the data collected suggests that each student demonstrated a positive outcome based on more than one source of data, and half of the students demonstrated positive outcomes on 60% or more of the measures that were used.
With respect to improvement in social responsiveness (based on the SRS) and in social skills and problem behaviors based on the SSRS, data on Sally is generally positive and fairly consistent among respondents. Sally demonstrated perceived improvement in social skills on the SSRS completed both by teachers and by her parent. Reduction in problem behaviors was observed by one teacher, by Sally and by her parent. In contrast to these data, Sally’s post intervention self-completed SSRS indicated a significant regression in social skills. These results raised concern about a possible negative effect on self-esteem pertaining to participation in the program. A plausible explanation may be that participation in the SSIS made this student more aware of her social differences and social perceptions, which was reflected in the post intervention self-rating. Sally may not have been aware of specific social skill deficits until the skill was introduced, discussed and practiced during the group intervention. As a result, particular skill deficits may have become more salient to her through participation in the intervention. The survey completed by Sally near the end of the intervention supports this interpretation. She wrote the following: “I’ve realized how annoying I am when I interrupt in class. Being aware of that has helped me immensely.” Her individual goal was to reduce interrupting others. Results from the two teacher ratings of Sally’s behavior indicate that the goal was met and she reduced the interrupting behavior. Although Sally’s SSRS self-rating suggests a regression in skills, it may actually indicate an increase in self-awareness that is not necessarily accompanied by a decrease in self-esteem. Other survey responses by Sally indicate that she felt the SSIS was helpful and understandable and that she enjoyed the class. Her negative self-rating instructs the facilitators that it is necessary to check in with students repeatedly to see how the intervention is interpreted. Does the student see
the instruction in a self-critical framework? Is the student’s self-esteem at risk? What explanations or modifications are needed to insure that students perceive the instruction in an empowering way?

For Sally, problem behaviors improved, based on T1, parent and student SSRS ratings and regressed according to T2 ratings. The lack of consistency between teachers may be a result of different teacher expectations or different classroom structures and routines. There may also be an increase in problem behaviors as students take on new social skills and attempt to practice them imperfectly in the classroom. Classroom generalization strategies may need to be more clearly defined for teachers and modeled by social skills instructors in the classroom as students are learning new skills. Overall, 69.23% of the outcome data were positive for this student.

Social skills outcome data for Barbara varied by respondent and by measure. SSRS data for T1 indicated an increase in social skills but the parent SSRS rating indicated a decrease in social skills and the self-rating reflected no significant changes. The parent SRS data indicated an improvement in social responsiveness. The inconsistency in outcomes between the parent completed SSRS and SRS may be due to several factors. These measures are assessing different behaviors. The SRS contains 65 items and is specifically designed to assess the behaviors associated with autism spectrum disorder, while the SSRS is based on a range of social skills and not only those associated with autism. The SRS may be a more robust instrument than the SSRS for assessing the behaviors associated with autism spectrum disorder. Teacher 1 SSRS data and the parent completed SRS data both support an improvement in social skills. There was consistency among respondents pertaining to the problem behavior SSRS ratings.
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T1, parent and Barbara’s self- SSRS - ratings indicated an improvement (decrease) in problem behaviors. T2 data were missing. On the student survey, Barbara indicated that she had achieved her goal of “doing my part” in groups. Barbara wrote “I actually interact with groups now rather than do the minimum of work.” The goal attainment scaling assessment completed by two teachers indicated that Barbara improved to a level better than expected. Although there was inconsistency in the quantitative data, the preponderance (61.53%) of the outcome data, including quantitative and qualitative sources, suggest that this student demonstrated social skills improvement, a decrease in problem behaviors and achieved her goal at a level higher than expected. Based on this student’s goal, improvement may have been more pertinent in the school setting. Parents may benefit from receiving more information pertaining to their child’s individual goal and the strategies to facilitate skill generalization. Although parents were invited to a group meeting to discuss the SSIS, a meeting was not held because no one was able to attend. To involve parents as a resource for skill generalization, parent meetings may need to be held outside of school hours and parent involvement may need to be individualized throughout the duration of the intervention.

SSRS social skills improvement data for Terry was missing or not significant for the two teachers. Parent and student SSRS comparisons indicated social skills improvement. SSRS ratings from one of the teachers and also Terry’s self-completed SSRS indicated a reduction in problem behaviors. In contrast, the parent-completed SSRS indicated that problem behaviors worsened. Terry established an individual goal to start and to maintain conversation with peers. Several group sessions were spent on developing conversation starters; conversation and role play were part of every group
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activity. One teacher rating indicated that Terry met his goal and a second teacher rating indicated that he exceeded the goal. The preponderance (61.53%) of the outcome data was positive for Terry. However, results from Terry’s self-report indicate that he did not like the group intervention. He did not feel that any part of the group was helpful and recommended that the program should “work on what the students actually need.” He wrote the following: “The group was a waste of time because there was this random curriculum that did not pertain to student needs.” Based on the perceptions of the co-facilitators, Terry was a leader in the group. Although he voiced dislike of the group, he participated and demonstrated skill progress during many group activities. Terry particularly disliked the video clips that came with the SSIS program. He felt the actors in the video clips were elementary school children and found the videos demeaning. After his opinion was voiced, the other students expressed agreement. During the mid-intervention group interviews with students and with teachers, suggestions were made to make the group activity more fun and more truly student-centered. With teacher and student input, the co-facilitators suggested that the students make their own video clips and teach the lessons to each other. The students liked this idea. This modification to the intervention was introduced to engage the students more fully in the lessons, and to implement student suggestions so that they would feel heard and respected. The co-facilitators felt that the student led instruction would facilitate greater interaction, more fun, and require the students to spend more time learning the lesson well enough to teach their peers. As a result, the students would be more likely to retain knowledge of the skills. Although this modification came largely because of Terry’s objection to the video clips, he repeatedly expressed that his needs were not being considered. Although most
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of the outcome data for Terry was positive, his view of the intervention was pervasively negative. He perceived his skills to be above the level being taught. Attempts to provide leadership opportunities and to connect lessons to his goal were not salient to him and did not decrease his negative perception of the intervention. Making lessons salient to each student may require more individual work or mentoring to accompany the intervention. Positive outcome data are not sufficient to insure that an intervention will be perceived positively by a student.

SSRS data for John indicated improvement in social skills based on T1 and T2 ratings. Parent data were missing and self-reported student data were not significant. SRS teacher ratings indicated improvement in social responsiveness; parent data were missing. SSRS results pertaining to problem behaviors were variable. T2 and John’s self-rating indicated improvement, but T1 indicated an increase in problem behaviors. The individual goal established by John was to talk about what others want to talk about. Both of the teacher ratings indicated that John did not attain his goal and performed much worse than expected. On the student survey, John correctly identified his goal. The following question on the survey was used to elicit a self-assessment: ‘Do you feel that you have learned something about yourself and how you relate to others from participation in the group? Please discuss.’ John wrote: “Yes and now I talk more on the bus with my friends.” He also indicated that he would recommend this group to others: “I would, because it helped me.” Although John did not attain his goal of talking about what others want to talk about, he felt that the group helped him and that he improved his ability to talk more with friends on the bus. About 46% percent of the data for John suggests that he improved his social skills.
SRS data were missing for Elton. SSRS data were significantly different when comparing teacher ratings of social skills to Elton’s self rating. Teacher SSRS data indicate a regression in social skills or no change, yet Elton’s self-rating indicated an improvement in social skills. There was a clear difference between how teachers perceived Elton’s social skills and his self-perception of social behaviors. Teachers’ ratings are based on their observations of a student performing a particular skill. This student’s positive self-rating may reflect increasing awareness or understanding of social skills, and not the performance of that skill. Thus the responses on the rating scales may reflect a different focus, depending upon the respondent. The goal established by Elton was to stay on topic in conversation. Both teacher ratings on the goal attainment scale indicate that he made significant progress and attained his goal. Although the quantitative data completed by teachers indicated a regression or no change in social skills and regression in problem behaviors, the goal attainment scaling indicated that Elton demonstrated improvement. Elton provided little elaboration on the individual survey data. When asked about the social skills that were personally important, Elton wrote “All of them- most of all- doing nice things for other people.” When asked to identify his goals, Elton wrote “I do not know. I have not thought that far ahead.” To the survey question “Do you feel that you have learned something about yourself and how you relate to others from participation in the group? Please discuss.” Elton wrote, “Honestly, no.” On a positive note, Elton’s other responses to survey questions indicated that participation in group led to better understanding of others and he was glad he participated. The variability in outcome data (23% positive) suggests that it is important
to use multiple sources of data to determine and specify the success of an intervention for any individual, and to identify areas of need.

Quantitative data were limited for Brett, who joined mid way through the intervention. Brett stated that he wanted to participate in the group to avoid going to a class he found boring. He had friends in the group and immediately participated in the group discussions. SSRS T1 data indicated a significant regression in social skills. Brett refused to complete the rating scales and the parent SSRS and SRS data were missing. Teacher SRS ratings indicated a regression in social responsiveness. On the SSRS problem scales, only T1 data were available and indicated an increase in problem behaviors. Although limited, the quantitative data available were consistent and indicated a significant decrease in social skills and regression in social responsiveness and problem behaviors based on two teacher respondents; these were T1 and the autistic support teacher who completed the SRS. It is difficult to interpret these results. Should this outcome be attributed to participation in the Social Skills Improvement System or attributed to other factors? Brett indicated that participation in social skills was simply to avoid participation in another class. Brett’s survey data were chiefly negative. When asked about likes and dislikes of the SSIS, Brett wrote “dis-mostly.” When asked if peer feedback was appreciated, Brett wrote “Sure.” When asked to identify the personally important social skills, Brett wrote “Personal.” When asked if he was glad that he participated, he wrote “semi.” The sarcastic tone to these responses and refusal to complete forms suggests lack of involvement in the group and the perception that the group was irrelevant. On the other hand, some of the other responses by Brett suggested some investment. Brett established the goal to stay on topic. When asked on the survey if
the he achieved his goal, he wrote “Yes, because I stay on topic.” Both teacher goal attainment ratings indicate that Brett attained his goal of staying on topic. Although the quantitative data indicated negative results, qualitative data, including comments by Brett and results from goal attainment scaling indicate some measure of success and agreement among teachers and this student regarding goal attainment. Although none of the quantitative data was positive, 23% of the outcome data— which was qualitative— was in a positive direction. The large amount of missing quantitative data precludes a more complete interpretation of the results.

Variability among respondents and across measures suggests that rating scales may not be sensitive enough to assess success for all students. Multiple sources of data that include quantitative and qualitative information should be examined when assessing social skills outcomes for students with social disabilities. Each data source provides a different piece of information that, when integrated, enables better understanding of intervention effects on the individual. The most positive outcomes for these students were obtained on goal attainment scaling by two teachers, whose ratings were very consistent. The two teachers independently perceived that five of the six students achieved or exceeded his/her goal. Communicating specific goals for each student helps focus the teachers on behavior changes that they need to observe and to facilitate in the classroom. Having each student establish his or her goal increases self-awareness, task investment and helps the student understand and focus on the specific behaviors associated with improvement. When a student demonstrates achievement of a self-established goal, it is also likely to increase his or her perception that he or she is capable in a social situation. Beliefs and self-perceptions about social capability are empowering
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and underlie the development of self-efficacy. Higher levels of self efficacy are associated with better performance outcomes (Bandura, 1982). In this study, three of six students felt that they had attained their goals, and one student identified a positive behavior change related to his goal. Goal attainment can lead to improved self-efficacy, which can lead to improved competence in social skills

Implications for practice

The student participants agreed that they preferred student led activities and student led instruction. When working with adolescent students with ASD, it is important to involve them in planning and implementing the instruction. Making their own videotapes and teaching each other the lessons was their preferred way of participating in the social skills group. The co-facilitators spent the first half of the intervention teaching and modeling the instruction. The co-facilitators’ role for the second half of the intervention changed to coach and consultant. This model of instruction, which changes from providing direct instruction and modeling for the first half of the intervention to providing coaching and consultation for the second half of the 7 month intervention may be an effective way to provide social skills for adolescents with social disabilities. Students are repeatedly exposed to appropriate teaching methods for the first half of the intervention and are coached to become more engaged in the instruction for the second half. The investment they make in learning the lessons, videotaping examples and teaching their peers provides them with more time on task and more opportunities for practicing the skills. As a result, the students may be more likely to remember and perform the skills in other settings.
Involving the regular education teachers helps them understand the social skills deficits exhibited by their students. It is important to meet with the teachers as a group to provide information about the students, their social skills deficits and social skills instruction. Asking for their suggestions in helping these students led to greater investment and ownership on their part in the process of facilitating generalization. Meeting as a group allowed the teachers to share perspectives on the students that they teach and share suggestions for intervention. In addition, the regular education teachers decided to focus on encouraging the student participants to engage with others in the classroom during cooperative group activities. Targeting a skill and involving the entire core of regular education teachers is recommended to facilitate skill generalization.

In order to gain greater involvement from parents, it is important to understand what parents expect and provide that for them. In this study, parents who completed the surveys indicated that they wanted strategies for skill generalization and ways to help their children develop friendships. In the future, having parents complete brief surveys at the beginning of the intervention may help the facilitators identify what the parents are asking for so they can plan accordingly. Parents may be more likely to participate if meetings are offered in the evening on an ongoing, perhaps monthly basis. Some of those meetings could include the students who could share one or two of the videotapes they made; this would help the parents better understand what the students were doing in group. Students could be encouraged to journal with their parents in order to share what they want their parents to know about them and how they feel their parent could help them.
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Each student’s experience in group provided information to guide future interventions. As students are introduced to social skills, they may become painfully aware of their deficits. Periodically checking in with each student individually is recommended in order to assess their self-esteem and determine how they perceive the intervention and themselves as a participant. Strategies for interpreting the intervention should be built into any social skills intervention. This may include explicit instruction using a Cognitive Behavior Therapy model that utilizes positive self-talk. Students can be guided to understand that as they become aware of the skills they need to develop, their thinking can lead to negative or positive feelings. Guiding that thinking in a positive way should be included in the intervention. Some students may benefit from being assigned a mentor to meet with on a weekly basis to help make the intervention more specifically focused on their individual needs and provide more opportunities to facilitate generalization. This may also make successes more salient to students. For students who do not demonstrate measurable improvement toward their goals, that goal should be reassessed and the behaviors necessary for goal attainment deconstructed so that the intervention can target an underlying behavior that may need to be taught before establishing that particular goal.

Experts who study socials skills and ASD indicate that these students require meaningful instruction as well as clear explanations about the importance of the skill in order to facilitate student “buy in” (Neuhaus et. al. 2010, Myles, 2005). The implication of these instructions and explanations is that students need to believe in the value of the intervention in order to make progress. In this study, students demonstrated significant progress even though they voiced their dislike for the program and expressed the fact that
they did not find it meaningful. Although it may appear to be logical that students who like the program may profit more from the intervention, the data from this study does not support that. Although it is certainly preferable that students like the program for a number of reasons, it is not necessary that they like it in order to profit from the intervention. This is an important point to consider when discussing social skills interventions with parents and students.

**Limitations**

Among the most limiting factors in this study were the small sample size and the significant number of missing rating scales, which precluded statistical analysis of the data. Considering that this study was undertaken to assess program effectiveness of a pilot program for the school district, it was disheartening that so much teacher and parent data were missing. The permission slips that parents signed for their children to participate included clear expectations that they would complete the required forms and surveys in the beginning, middle and at the end of the intervention. Although forms were mailed with school addressed, stamped envelopes for return of the completed rating scales and surveys, only three parents fulfilled their commitments. Follow up calls, and emails did not improve the yield. Parents may need to be provided with ongoing training and support as a group or individually to improve compliance.

Teachers were treated in a less formal way. There was no contract for them to sign or incentive offered for them to complete the forms. The lack of completed forms occurred for several reasons. The teachers who did not complete the forms expressed the fact that too much paperwork was expected of them. Missing data also occurred because of numerous, omitted items on rating scales completed by teachers, who felt they did not
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know the students well enough to answer the questions or had not observed the behavior in question. Incomplete forms could not be scored. To insure complete data collection in the future, a program effectiveness study for the school district should include an incentive for teachers to complete the forms that they are asked to complete. A possible incentive could include compensatory time for teachers for completion of rating scales. Instruction should be given to teachers to complete all items or to indicate why they were unable to complete all items so that clarification could be offered or another teacher respondent could be asked to participate.

The group of students that participated in this study was heterogeneous. Given the fact that the group was heterogeneous and there was no comparison group, the findings cannot be generalized to a larger population.

Another limitation to this study is the lack of research that links ToM, EF and WCC to the SSIS, SSRS and SRS. Although many of the instructional strategies that are incorporated into the SSIS are consistent with those recommended from the research on ToM, EF and WCC, there is a lack of data that links these domains/processes to the SSIS and the rating scales used to assess progress.

Several of the students who participated in this study received additional supports such as pragmatic language support, wrap around services, or an aide. It is not possible to determine if positive outcomes are associated with participation in the SSIS or if these outcomes should be attributed to other interventions, or to maturation and development. It is likely that positive outcomes are associated with multiple factors. However, the relative contribution of each is not possible to determine.
The autistic support teacher was involved in implementing the SSIS and was also responsible for completing the SRS for each student. This dual role could confound results. The autistic support teacher may have been more highly predisposed to see positive outcomes because of his or her investment in the intervention. Although the autistic support teacher was also involved in goal attainment scaling for each student, the ratings were consistent with the ratings of the regular education teacher who completed goal attainment scaling for each student. As a result, the goal attainment scaling for each student was less likely to reflect bias.

**Recommendations for future research**

More studies are needed to assess the effectiveness of social skills programs with children on the autistic spectrum. When conducting these studies, it is important to use multiple sources of outcome data and also to collect quantitative and qualitative data. Integrating multiple sources of data helps to better understand the meaning of an intervention for a particular student.

Social skills rating scales that assess a broad range of behaviors may not be sensitive enough to measure progress for children with ASD. An instrument like the Social Responsiveness Scale that is designed to assess behaviors associated with the specific social difficulties experienced by children with ASD may be a valuable resource for future studies. The most positive data in this study were gleaned from the goal attainment scaling. Having each student establish his/her own goal helped the student and the teachers focus on the specific behaviors needed for progress. The level of specificity of behavior described in the scaling makes it more amenable to assessment. Using two or more raters allows for consensus or social agreement regarding progress.
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and makes progress and success more salient for the student. Obtaining this type of data is efficient and easy to implement in a school setting.

It is important to understand that teachers and parents may have different social skills expectations/goals for the students. In this study, parents wanted their children to make friends. As children approach adolescence, parents may require more help in identifying developmentally appropriate strategies to facilitate friendship-making skills at home. Teachers were looking for students to display appropriate interaction with peers as well as appropriate classroom behavior. Differential training for teachers and parents based on different expectations/ goals and settings should be incorporated into a comprehensive social skills program for students with ASD. Studying programs that include this training component could lead to identifying developmentally appropriate strategies for generalization of skills that are specific to parents and teachers in their respective settings. Training should include instruction for teachers and parents about the skills and developmentally appropriate strategies to facilitate generalization. Ongoing support for parents and teachers as well as monitoring/evaluating strategies for effectiveness should be included.

More studies are needed that seek to understand the perspective of the student with ASD and incorporate student recommendations into the intervention. Valuable changes to this intervention were made in response to the concerns expressed by the students. At the middle school level, students teaching each other and making their own videotapes for instruction under the direction of the teacher is a promising approach and should be studied further. Because these students have significant social skills needs, it is important for the teachers to model the instruction as well as provide the content and
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framework for instruction. During the first 10-12 weeks of this intervention, the co-facilitators presented instruction with fidelity consistent with the SSIS. This provided the students with repeated modeling, which made the effective instructional elements salient to them. As a result, they followed the SSIS structure when presenting their lessons to each other.

Although this study did not formally attempt to identify whether or not students displayed behaviors associated with ToM, EF and WCC as a result of participation in the SSIS, it would be a useful topic for future research. The co-facilitators informally observed more planning, self-monitoring, and self-regulation during the second part of the intervention when the students were actively involved in teaching each other and preparing videotapes.

Conclusions

The SSIS was recommended for the other middle schools in the district with some additional suggestions. A comprehensive social skills program for students with ASD at the middle school level should incorporate the voices of the students as well as training for regular education teachers and parents to facilitate skill generalization. As individuals with ASD develop, their voices and interpretations of experience offer a rich source of information that can guide teachers and parents in supporting them. Training regular education teachers and parents in generalization strategies is a needed component that may require direct instruction, modeling, and ongoing support to assist adults in acquiring appropriate strategies to help children perform the skills they are learning. When assessing the effectiveness of social skills programs, multiple sources of data should be
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used. Each source of data provides different information; when taken together these
provide meaningful interpretation of the outcome for the individual participants.

The SSIS at the middle school level can provide a framework that can be
modified, based on developmental issues and expectations for different levels in the
school system. By determining developmentally appropriate behaviors for each level, the
program can build incrementally to provide age and grade appropriate interventions that
fit into the seven domains of social skills addressed by the SSIS. These domains include
communication, cooperation, empathy, engagement, responsibility, assertion, self-
control. Content and goal attainment would vary by developmental level and school level
expectations. Elementary school instruction would be teacher driven and address issues
based on the developmental milestones pertinent to the grade. Early elementary lessons
may pertain to controlling one’s body in space, separating from caregivers, using words
to express emotions. Older elementary school lessons may pertain to taking responsibility
for school work, verbal conflict resolution strategies, etc. For the high school, the content
would need to be modified to the specific social issues faced by high school students such
as dating, gender identity, drug use, decision making, involvement in school activities,
peer pressure, and parent concerns. The manner of instruction in the high school would
need to be student centered. A K-12 developmentally based social skills program that
incrementally changes in response to age and grade expectations and issues would
facilitate implementation of a universal curriculum that could also be used as beneficial
guides for remedial interventions. Conducting ongoing program evaluation at all levels
would provide data that would facilitate better decision making when planning
interventions for students with social disabilities.
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Social Skills and Autism


Dear Parent-

Your child is invited to participate in a social skills program which will be facilitated by teachers, counselors and/or the school psychologist. Ellis Middle School was given the opportunity to obtain a program called the Social Skills Intervention System (SSIS). The SSIS and its components link assessment to targeted intervention so that your child’s individual needs can be addressed. To determine each child’s needs we ask that you complete the enclosed Social Skills Rating Scale (SSRS) before, during and after the intervention. In addition to the Social Skills Rating Scale, we would like you to complete the enclosed Social Responsiveness Scale (SRS) which is another instrument that will be used. Two of your child’s teachers will also be completing the SSRS and SRS.

Participation in this program is voluntary. Should you decide to allow your child to participate, your child will complete the SSRS and will be interviewed to discuss his/her goals about participation in the program. This program will be offered twice every 6 days and will be hand scheduled into your child’s schedule during unified arts. This allows us to increase the frequency and intensity of the support compared to our previous social skills program.

Your permission to allow your child to participate indicates the following:

* Your willingness to complete the SSRS and SRS before, during and after the intervention;

* Your agreement to allow us to hand schedule the social skills group into your child’s schedule during Unified Arts; Your child’s counselor will contact you regarding this.

* Your agreement to allow your child to exchange phone numbers with other group members to facilitate social interaction;

* Your agreement to allow your child to be video/audio taped for instructional purposes only.

Please sign the attached form to indicate whether or not you want your child to participate in this program return this form to your child’s counselor by October 29th so we can get started.
If you agree to have your child participate, please complete the two rating scales enclosed and return them to your child’s counselor by November 3rd.

If you do not want your child to participate, please return the blank SSRS and SRS forms to your child’s counselor.

We are excited to be able to offer this program and look forward to working with your child. Please feel free to contact us if you have any questions.

Sincerely,

Ms. C. Support Teacher
Ms. L, CCIU Consultant
Ms. B School Counselor

Ms. L. School Psychologist
Ms. M, School Counselor
Ms. D. School Counselor

October 25, 2010

PERMISSION FORM FOR PARTICPATION IN THE SOCIAL SKILLS IMPROVEMENT SYSTEM

Student’s Name ______________________  Grade ______________________

Parent’s Name ________________________

My Child has permission to participate in the Social Skills Improvement System program

Yes ________  No ____________

_________________________  ____________________
Parent Signature          Date
Permission for your child to participate includes the following:

Your willingness to complete the SSRS and SRS before during and after the intervention

Your agreement to allow us to hand schedule the social skills group into your child’s schedule.

Your agreement to allow the children to exchange phone numbers to facilitate social interaction.

Your agreement to allow your child to be video/audio taped for instructional purposes only.
(Tapes will be destroyed after we use them.)

PLEASE RETURN THIS FORM TO YOUR CHILD’S COUNSELOR BY OCTOBER 29th

PLEASE RETURN THE COMPLETED RATING SCALES TO YOUR CHILD’S COUNSELOR BY NOVEMBER 3rd
Appendix B
Student Survey

Key
SSIS  Social Skills Improvement System

What do you like and dislike about participating in the social skills group?

Were you satisfied with the scheduling of social skills group?

Were the teachers helpful?

Did you appreciate peer feedback?

Was role playing helpful?

What social skills are important to you personally?

What aspect of the social skills group has been helpful to you?

Is there any part of the instruction that helps you remember and apply the skills? Please describe.

What changes would you recommend be implemented in the future to improve the program?

What short term and long term goals do you have for yourself regarding participation in the SSIS program?
   Did you achieve your goals? How do you know?

Do you invite people to do things with you more now as a result of being in the group? Why or Why not?

What is one thing you will try to do more often as a result of being in this group?

Do you perform your skills outside of group? If yes, has the group helped you perform the skills outside of the group? If no, explain why.

Do you feel that you have learned something about yourself and how you relate to others from participation in the group? Please discuss.

Do you feel you understand the behavior of others better as a result of participating in the group?
Social Skills and Autism

Are you more aware of the skill steps involved in certain social skills and situations? Please explain.

Are you glad that you participated?

Would you recommend the group to others?

Would you continue to participate in the SSIS group if it is offered in high school?

Would you continue to participate in a different social skills group if offered in high school?

Suggestions for improvement

Other comments
Teacher/ Administrator Survey

**Key**

SSIS  Social Skills Improvement System

Person Completing this form_______Teacher ______________Administrator*

______Regular Ed. ____ Special Ed.**

What are your expectations regarding the short and long term outcomes for students who participate in social skill instruction using the SSIS?

Have you observed social skills improvement in your classroom with respect to the students you teach who participated in the program? Please describe.

What are the most important social skills for the students to demonstrate?

How would you describe a successful outcome?

How would you know if a successful outcome demonstrated by a child is related to participation in this program?

What aspect of the program is socially relevant to you as a teacher/administrator of the children in the program?

Were aspects of the program too time consuming? Please describe.

What elements of the program were effective? Ineffective?

What additional supports were needed to facilitate skill development in students with ASD?

Can the program be modified to improve effectiveness? How?

**Was the program easily implemented with fidelity by the teacher?**

*Is the program cost effective?*

*Is the program recommended for K-5 and 9-12 students in the WCASD? Why?*

* Does student outcome data match parent/teacher expectations regarding outcome for middle school?

* Suggestions for improvement
Social Skills and Autism

Parent Survey

**Key**
SSIS  Social Skills Improvement System

What are the risks and benefits of participation in the SSIS for Middle School Students?

With respect to your child’s participation in the SSIS, what are your short and long term goals for your child?

What are the most important social skills for your child to demonstrate?

How would you define a successful outcome?

Do you notice social skills progress in your child since he/she began the program? Please describe.

What do you like and dislike about the program?

What aspect of the program is personally valuable to you as a parent whose child is participating?

Were you provided with sufficient communication regarding the curriculum?

Were you provided with sufficient communication regarding your child’s progress?

What elements of the program were effective? Ineffective?

What additional supports are needed to facilitate skill development and generalization?

Do you feel the SSIS was an effective program? Would you like to see the district continue to offer this program in them Middle school? Elementary school? High school?

Additional Comments
Appendix C
Group Student Interview

• Do you like participating in the social skills group?
  What do you like?   What do you dislike?

• Are you comfortable participating in the group?  Why or Why not?

• Is twice a cycle enough,  too much, or not enough?

• What have you learned?

• What social  skills are important to you personally in your life?

• Is there any part of the instruction that helps you remember and apply the skills?
  Please describe.

• What changes would you recommend to make the social skills instruction better?

• How would you compare the teacher led instruction to the student led instruction?

• Did the field trips help you use your social skills?

• Did you like going on the field trips?  Explain

• What should be included in the instruction to help you use your skills outside of
  this group?

• What particular skill lesson do you feel has been important for you individually?

• Do you invite people to do things with you more now as a result of being in the
  group?  Why or Why not?

• What is one thing you will try to do more often as a result of being in this group?

• Do you perform your skills outside of group?
  If yes,  has the group helped you perform the skills outside of the group?
  If no, explain why.

• What is one behavior you need to work on in order to engage more with other
  students?

• Has the group helped you understand the behavior of other people better?
Social Skills and Autism

• What do you want others students to understand about you?
• What do you want your parents and teachers to understand about you?
• Do you plan to participate in a social skills group next year?
• How could parents, teachers and peers help you with social skills?
• Suggestions for improving social skills group
• Other Comments