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SPECIAL OLYMPICS ATHLETES

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of the requirements for the

Ph.D. degree in Kinesiology

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**SOCIAL SKILLS AND SPORTS (S³) PROGRAM: DEVELOPING THE SOCIAL
SKILLS OF YOUNG ADULT SPECIAL OLYMPICS ATHLETES**

By

Melissa Grace Fraser Alexander

A DISSERTATION

**Submitted to
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ABSTRACT

SOCIAL SKILLS AND SPORTS (S³) PROGRAM: DEVELOPING THE SOCIAL SKILLS OF YOUNG ADULT SPECIAL OLYMPICS ATHLETES

By

Melissa Grace Fraser Alexander

The Social Skills and Sports (S³) program was designed to teach social skills to people with intellectual disabilities within a sports setting. The purpose of the study was to determine if participants could develop and refine the target social skills as a result of S³; generalize social skills to other environments; and maintain social skills five weeks after the completion of the intervention. The three targeted social skills were contributing relevant information to a conversation, making eye contact, and turn taking. Five males and females between the ages of 13 and 24 participated in the 14 week program that met for 90 minutes, two times a week. Participants were taught social skills through classroom activities, soccer activities, and material presented by their parents at home. Four peers who did not have a disability were also included in the study to serve as role models for the people with disabilities. Participant's families (particularly their mothers) were incorporated into the home practice component of the program. Data were collected through observations during the program, parent interviews, parent rating forms, and staff journals. Participants' social skills were measured on four occasions, baseline, post-classroom, post-soccer, and retention. As a case study approach was used, data were analyzed using visual analysis and qualitative methodology. The results of the study are presented in two manuscripts. The first manuscript provides results and discussion for the three research questions. The second manuscript reports the practicality of incorporating a social skills program into an adolescent's home. The second manuscript also

discusses if parents valued the S³ program and if participants enjoyed the S³ program. Based on the data, four of the five participants showed a clinically significant increase in at least one of the targeted skills. These four participants generalized the skills to other settings, and maintained the skills five weeks after the completion of the intervention. Participants also developed non-targeted social skills, such as maintaining a conversation. Three of the five families reported that they practiced social skills for double the amount of time that was requested for each week. However, parents felt that it was difficult to find time to practice the social skills. Parents valued the soccer portion of the program, the specific social skills that were chosen for the program, the use of people without disabilities as role models, and the activities that were provided to incorporate practice at home. Participants enjoyed the soccer and classroom portion of the program. However, two of the three participants did not enjoy interacting with their mothers and practicing social skills at home.

This dissertation is dedicated to my loving and devoted husband whose patience and support provided me the strength needed to complete this project. I also dedicate it to my parents who have always supported my dreams and made me the person I am today. Lastly, I dedicate this document to all the children in the world who have been told they cannot do something and have gone on to prove the world wrong.

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PREFACE

Melissa G. F. Alexander's dissertation committee agreed to a non-traditional format for her dissertation.

The committee accepted a grant proposal submitted to Special Olympics International (Chapter 1) as her dissertation proposal, with the proviso that Melissa prepare and include a more comprehensive literature review (Chapter 2) in the dissertation. The only changes made to the grant proposal included minor revisions to the methods to reflect actual participants, actual rather than proposed procedures, and changes from future to past tense where appropriate.

The committee encouraged Melissa to present the results and discussion sections of her dissertation (Chapters 3 and 4) in the form of journal manuscripts. This approach led to redundancy for readers with respect to multiple presentations of the introduction, literature review, and methods content.

Gail M. Dummer

Gail M. Dummer, Ph.D.

Dissertation Committee Chairperson

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CHAPTER 1: SPECIAL OLYMPICS GRANT PROPOSAL

Project Name

Social Skills and Sports (S³) Program: A Problem-Solving Approach to Developing the Social Skills of Young Adult Special Olympics Athletes

Project Description

Jessica loves to play soccer with her Special Olympics team. She has a great sense of humor when interacting with her family, but at practice she is very quiet. She responds to her coach with smiles, but when her coach asks a question, (e.g., “do you want to be on the green team or the red team?”) she simply mumbles “I don’t know” and stares at the ground. Jessica eventually joins the game and plays well, though she does not respond to her teammates when they try to interact with her. When everyone lines up to shake hands, Jessica stands to the side and watches. Her teammates yell for her to come over and join them. Jessica cries and runs over to the coach.

Jonathon is skilled at every sport he tries. But Jonathon has poor social skills, especially turn-taking. For example, he ran over to his teammates and coach, eager to join their conversation. Using a high pitched voice that was close to a whisper, he started repeating every word his coach said. He smiled at the coach while he spoke over his teammates. His teammates responded by talking even louder so they could be heard. Jonathon was overwhelmed by the noise, covered his ears, and walked over to another group where he tried the same approach, with a similar lack of success. Jonathon ran over to the corner of the gym where he bounced a ball by himself. Occasionally he would glance

over to the group with a look of anticipation.

Katie is very social, especially with boys. Katie constantly stops her teammates to ask questions about what they are wearing, what they are doing, what their band-aids are for, and what their names are. Some of her teammates get frustrated by her constant questions and tell her to leave them alone. Instead of choosing a different conversation point, Katie becomes very quiet with a puzzled look on her face. When asked to find a partner for an activity, Katie typically grabs onto a male classmate and starts yelling “Jason is my partner. He is going to work with me! He is my boyfriend!” She then gives Jason a hug. Jason quickly pushes Katie away and tells her to stop touching him.

These vignettes illustrate some of the struggles Special Olympics athletes may have with their social skills. Through my work as a coach of Special Olympics soccer players and swimmers, I have observed first hand that many Special Olympics athletes lack the social skills needed for effective participation in group activities. My observations are not anomalous. The research literature provides evidence of similar problems in the school and community settings. Individuals with intellectual disabilities (ID)¹ have difficulties creating friends, keeping friends, and demonstrating socially appropriate behaviors (Parker, Rubin, Price, & DeRosier, 1995; Patton & Polloway, 1990; Szymanski, 1980; Zetlin, & Murtaugh, 1988).

Little research has been done to determine the potential of social skills development in Special Olympics. Special Olympics states, “children and adults with ID

¹ Throughout this document, the term intellectual disabilities (ID) will refer to individuals with a cognitive impairment (CI) (e.g. mental retardation) and individuals with autism spectrum disorder (ASD) (e.g., autism and Asperger’s syndrome).

who participate in Special Olympics develop improved physical fitness and motor skills, greater self-confidence and a more positive self-image. They grow mentally, socially and spiritually..." (Joseph P. Kennedy, Jr. Foundation, n.d.). However, while research has indicated (a) the physical and health benefits associated with a Special Olympics program (Siperstein, Harada, Parker, Hardman, McGuire, n.d.); (b) the importance of Special Olympics as a social network for individuals with intellectual disabilities (Farrell, Crocker, McDonough, & Sedgwick, 2004); and (c) the value parents place on Special Olympics as a tool in developing their child's social skills (Siperstein, et al., n.d.), there is little empirical evidence about ways in which participants naturally develop their social skills while participating in Special Olympics. There is also no literature exploring the use of a social skills intervention within a Special Olympics setting.

As a doctoral student specializing in adapted physical activity and sport psychology, I have decided to focus my dissertation research on helping to solve this problem. Thus, *the purpose of this project is to determine whether young adult Special Olympics athletes can develop, refine, and maintain social skills through participation in a Social Skills and Sports (S³) program.* Participants in this study will have a mild to moderate ID. The S³ program will include classroom instruction in social skills, as well as structured opportunities for participants to practice social skills in the context of Special Olympics soccer training. Parents will also be given supplemental activities to do at home with the participants to encourage and help develop the skills learned in S³. The effectiveness of the S³ program will be determined by a series of parent interviews and surveys, as well as repeated observations of participants' social skills.

Project Objectives

The research questions focus on whether young adult Special Olympics athletes with mild and moderate intellectual disability:

1. Develop and refine social skills as a result of the S³ program.
2. Maintain the social skills developed in the S³ program until six weeks post intervention.
3. Generalize the social skills developed in the S³ program to home, school, and community settings.

For the purpose of this research study, social skills will include making eye contact while talking with others, taking turns in the conversation, and contributing relevant information to the conversation. The goal is for participants to learn/practice these skills within safe, educational and controlled settings (S³ and with their families) and then apply the skills when interacting with other participants in the study as well as people in their family and community

Rationale

Social Skills for People with Intellectual Disabilities

Need for effective social skills. Effective social skills are needed in home, school, work, and community environments. They are often referred to as an essential component for life adjustment (Neel, 1988). Without social skills, people with an ID cannot communicate their needs, establish appropriate relationships with others, and communicate their thoughts. “Communication competence may be the primary factor determining the extent to which individuals with ASD develop relationships with others and participate in daily activities and routines at school, at home, and in the community”

(Woods & Wetherby, 2003, p.180). Non-disabled peers often reject people with mental retardation not because of their academic incompetence, but because of the inappropriate behaviors they demonstrate when in a social situation (Gottlieb, Semmel, & Veldman, 1978). Social skills are associated with having an increase in academic success, being accepted by others, having high levels of self-esteem, and having high levels of self-confidence (Elksnin & Elksnin, 2003). When individuals do not develop necessary social skills they are at risk of being rejected, experiencing increased difficulties in school, suffering mental health problems, and being under or unemployed during their adult years (Elksnin & Elksnin, 1995; 1998; 2001).

Significant others, teachers, and people with ID disabilities all value the development of social skills. Significant others of adults with MR *[sic]* commonly reported vocational, social, and personal skills as the skills most needed to be successful in community living (Lovett & Harris, 1987a). Adults with MR *[sic]* have also reported that they feel social skills are essential for success in community living (Lovett & Harris, 1987b). Despite public misconception, individuals with ASD want to build social relationships and enjoy contact with their peers (Mesibov, 1984). Especially with higher functioning children with autism and individuals with Asperger's syndrome, it has been found that the largest social difficulty is related to social-emotional understanding and is not because of social insensitivity or social disinterest (Bacon, Fein, Morris, Waterhouse, & Allen, 1998; Sigman & Ruskin, 1999). Just like any other person, people with ASD do not like situations where they do not know what they are supposed to do, what they should expect others to do, or how to react to other's behaviors (Coyne & Fullerton, 2004). In the school setting, many of individual education plans (IEP) focus on the need

for appropriate social skills (Epstein, Polloway, Patton, & Foley, 1989). In fact, IEP goals for individuals with disabilities are most frequently related to language, speech and communication and make up around 25% of all IEP objectives (Campbell, Stremel-Campbell, & Rogers-Warren, 1985).

Social skill characteristics of people with intellectual disabilities. The research literature indicates that persons with ID often have ineffective social skills. The nature of the social skill deficits varies for different cognitive disabilities.

By definition, persons with MR [*sic*] often have poor social skills. The DSM-IV-TR (APA, 2000) states that an individual with mental retardation has “sub average general intellectual functioning... that is accompanied by significant limitations in adaptive functioning in at least two of the following skill areas: communication, self-care, home living, social/interpersonal skills, use of community resources...” (p.41). While individuals with MR [*sic*] struggle with social skills, there is a large amount of variance on which particular skills are a problem (Korinek & Polloway, 1993). Therefore, there is no specific list of social skills that individuals with MR [*sic*] need to improve.

Individuals with ASD are also described as demonstrating very poor social skills. The DSM-IV- TR (APA, 2000) states that individuals with pervasive developmental disorders (including individuals with autism and Aspergers) “are characterized by severe and pervasive impairments in several areas of development: reciprocal social interactional skills, communication skills, or the presence of stereotypical behavior, interests, and activities” (p.69). Individuals with ASD not only receive and process information differently than the general public, but they also respond to the information in a unique manner (Coyne & Fullerton, 2004). They tend to have great difficulties with

the development of their pragmatics (Gerber, 2003). As a result they tend to “include irrelevant details in conversations, interrupt, shift inappropriately to another topic, and overall fail to develop conversations” (Wicks-Nelson & Israel, 2000, p.325). Individuals with ASD have difficulties with social learning (difficulties learning social interchanges used in everyday society) (Towbin, Mauk, & Batshaw, 2002). One young man with autism describes his difficulties in society as “getting off of a plane in a foreign country without knowing the language, cultural gestures or cultural norms” (Coyne & Fullerton, 2004, p.19). They also have difficulties integrating verbal and nonverbal components of communication (Towbin, Mauk, & Batshaw, 2002). Many of the stereotypical behaviors associated with ASD, such as hand wringing, self-stimulatory behaviors, and echolalia, also make social interactions and communication difficult (Towbin, Mauk, & Batshaw, 2002). All of these behaviors lead peers to perceive persons with ASD as odd or unapproachable. On top of that, their inability to express their opinions in a socially expected manner often leads to inappropriate or aggressive verbalizations which ostracize them even more than before they tried to initiate contact (McGee, Krantz, & McClannahan, 1984).

Results of social skill deficiencies. Because of social skill deficits, persons with ID of all ages are likely to experience challenges in their daily interactions. Many individuals with MR [sic] have difficulties interacting with their classmates (Korinek & Polloway, 1993). As a result, they have a much greater chance of being neglected or rejected by peers at their school (Parker, et al., 1995; Polloway & Smith, 1983; Zetlin & Murtaugh, 1988). The friendships that the individuals with mild MR [sic] do have tend to be less stable and are sustained over a shorter duration than the friendships of their

nondisabled classmates (Zetlin & Murtaugh, 1988). Social isolation experienced by the individuals with ID occurs in both the segregated and inclusive environments. Krauss, Seltzer, and Goodman (1992) found that when students with ID were placed first in a segregated classroom and then an integrated classroom, they experienced a great deal of difficulty making friends in both settings. Luftig (1988) supported these findings when he noted that individuals with ID who were integrated demonstrated much higher levels of isolation and loneliness compared to their peers without ID. Social skills have also been found to affect successful adjustment into employment and independent living post-school (Chadsey-Rusch, Rusch, & O'Reilly, 1991; Edgar, 1987; Edgar, 1988).

Social skills deficits can also affect the leisurely activities of people with ID. Individuals with ID often lack social skills needed to participate in more active and socially inclusive activities (Schleien & Ray, 1997). Without social skills training, adults with mental retardation [*sic*] tend to become increasingly isolated from normal adult activities and participate in activities alone within their home. Furthermore, leisure activities tended to be very sedentary such as watching television or doing arts and crafts.(Johnson, McGrew, Bloomberg, Bruininks, & Lin, 1996; Lancioni, & Kierans, 2000; O'Reilly, Thurlow, Bruininks, Lange, 1989; Schleien, Meyer, Heyne, & Brandt , 1995). Because of the difficulties individuals with ASD have with social skills, they are often not welcome to participate in inclusive program including community leisure programs (Schleien & Ray, 1988).

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Conceptual Model

The student investigator was unable to locate theories or conceptual models that address the development, maintenance, and generalization of social skills *by persons with ID*. Therefore, she developed a unique conceptual model for use in this study (Figure 1).

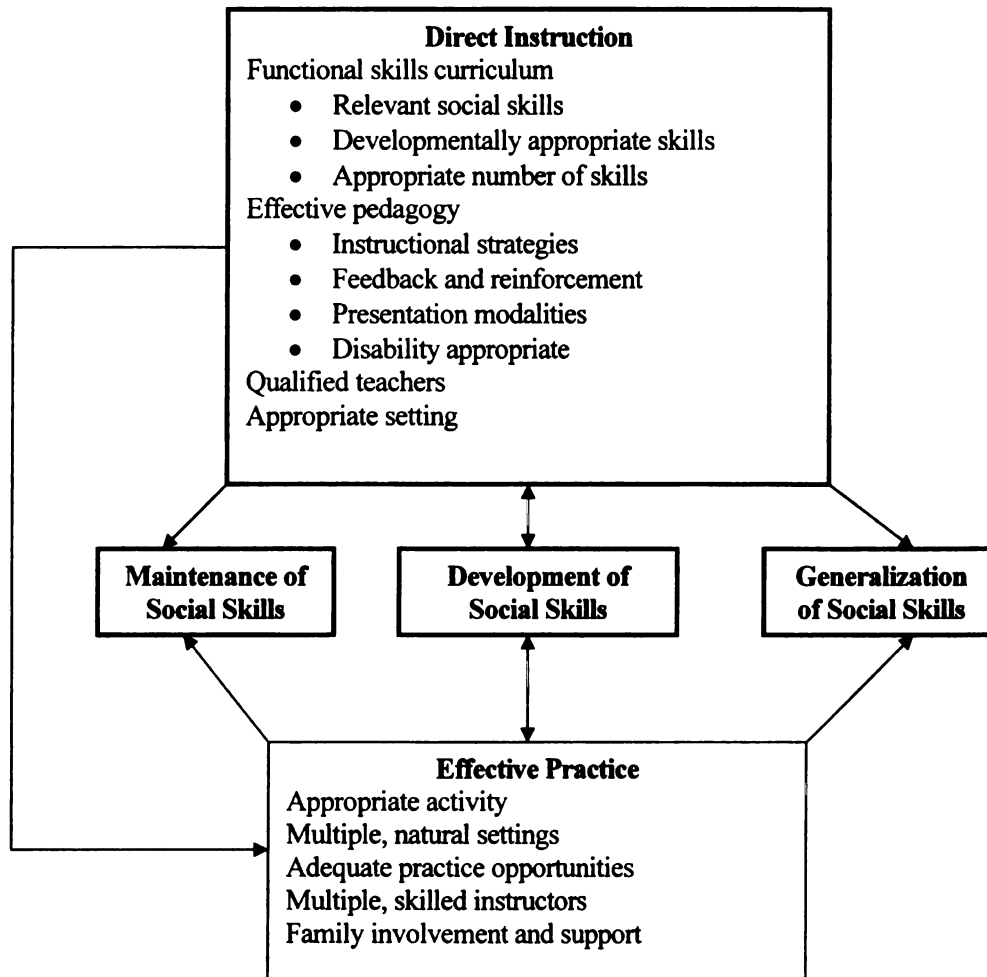


Figure 1. Alexander model for the development, maintenance, and generalization of social skills

In order for individuals with ID to develop, maintain, and generalize social skills, they must be provided with direct instruction and effective practice. A participant must receive direct instruction that contains: (a) functional skill curriculum; (b) effective pedagogy; (c) a number of qualified teachers; and (d) is taught in the appropriate setting. Concurrent with direct instruction, the participant must participate in effective practice that consists of: (a) the appropriate activity; (b) multiple, natural settings; (c) adequate practice opportunities; (d) multiple, skilled instructors; (e) family involvement and support. While both direct instruction and effective practice are essential for skill development, direct instruction does have an effect on effective practice. Without receiving information on the appropriate social skill and how to demonstrate it, one cannot practice the skill. However, the combination of direct instruction and effective practice will lead to the development and generalization of social skills. While direct instruction has some impact on the maintenance of the individuals' social skills, the primary factor that is needed for an individual to maintain their social skills is effective practice.

While this is an original model, other theoretical positions were influential in its creation. The Ecological Systems Theory (Bronfenbrenner, 1979a) was a strong influence on the incorporation of numerous practice setting and teachers into the model. Bronfenbrenner suggests that the child is affected by four different interrelated system starting with the microsystem (e.g., family, school and peers) and moving all the way to the macrosystem (e.g., dominant beliefs, cultural values). As the child moves from one system to the next, the level of influence becomes broader. Teaching the social skills directly in a structured environment relies on the use of the microsystem. The effective

practice seen in the proposed model takes advantage of the microsystem as well as the mesosystem (e.g. home, neighborhood, community) and exosystem (e.g. extended family, health and social service agencies).

Sargent's (1989) created a model regarding social competence in individuals with mental retardation [sic]. Sargent's model consists of three main components: (a) social affect (the appearance of the person to others); (b) social skills (the specific skills that are necessary for social interactions; and (c) social cognition (the individual's intelligence and its relationship to his/her ability to respond to social interactions). All three of these components must be addressed for social skill development in people with mental retardation [sic].

Direct Instruction

Functional skills curriculum, relevant social skills. Social skills taught to people with ID must be relevant for daily living and improve social interactions. Pragmatics are a set of cultural rules that govern social interactions, particularly in regards to the use of language (Bates, 1980). It is "the social use of language as is involved in sustaining or initiating a conversation" (Baker, 2003, p.17). Many of the skill deficits demonstrated by people with ID are issues with pragmatics, such as making eye contact, using correct tone and volume, having appropriate body language, being able to respond to a comment appropriately, and staying on topic in a conversation. To address this problem, educators have started to focus on teaching proper pragmatics instead of focusing on proper syntax (how the thought is communicated through the use of proper grammar) (Haring, Roger, Lee, Breen, & Gaylord-Ross, 1986). Which exact social skills are taught is decided upon by the educator and should be based on the needs of the participants. Many researchers suggest focusing on social skills

that participants will need to make immediate interactions and that will enhance their chances of being successfully integrated into the community with the general population (Morgan, & Jensen, 1988; Polloway & Smith, 1983; Sargent, 1989).

Functional skills curriculum, developmentally appropriate skills. Participants need to understand the purpose of the skill they are supposed to be learning (Scruggs & Mastropieri, 1993). If the skill is not developmentally appropriate and therefore is not considered significant to the individual, he/she is unlikely to learn the skill due to lack of motivation. Students with MR [sic], like any students, tend to learn better when they are motivated to do so (Baumeister & Brooks, 1981).

Functional skills curriculum, appropriate number of skills. Programs that focus on the development of a few skills are much more effective than those that try to teach numerous skills in one program. While many published social skills interventions focus on numerous skills, focus should be placed on a few concrete skills with repeated practice, especially when working with students who have difficulties with abstract social skills (such as individuals with ID) Therefore, the number of skills taught should be an appropriate match to the amount of available instructional time (Baker, 2003; Kamps, et al., 1992; Sasso, Melloy, & Kavale, 1990).

Effective pedagogy, instructional strategies. Researchers have tried many different methods to teach social skills to individuals with ID including behavioral rehearsal (Bates, 1980; Filipczak, Archer, & Friedman, 1980) direct instruction (Blew et al., 1985; Matson & Andrasik, 1982; Ozonoff & Miller, 1995), pivotal response training (Haring, et al., 1986; Koegel, Koegel, & Schreibman, 1993), social scripts (Loveland & Tunali, 1991; Thiemann & Goldstein, 2001; Zanolli, Daggett, & Adams, 1996), and peer mediation/peer modeling (Blew,

et al., 1985; Egel, Richman, & Koegel, 1981; Goldstein, Kaczmarek, Pennington, & Schafer, 1992; Kamps et al., 1992; O'Reilly & Glynn, 1995). However, two strategies that seem to be the most promising are social problem solving approach and modeling.

The social problem solving approach, sometimes referred to as process training, is a four step approach that can be applied to any social interactions. Instead of teaching a specific response or action for each situation, which often leads to very poor generalization, people are taught to work through a situation using a progressive step model allowing them to apply it to a variety of different settings and situations (McFall, 1982). Each intervention or personalized strategy uses different steps. However, the steps are usually:“(a) discriminating salient social stimuli (decoding); (b) identifying alternative social behaviors and identifying the most appropriate social behavior for the social situation (deciding); (c) performing the social behavior(performing); and (d) evaluating the effectiveness of the social behavior once it has been performed (evaluation)” (O'Reilly et al., 2000, p.251). A simplistic example of this approach would be (a) A stranger walks up to Sue and smiles at her, (b) Sue could run away, give him a hug, give him a “hi five”, or say hi and introduce herself, (c) Sue chooses to say hi and introduce herself, (d) Sue then watches the facial expressions of the stranger and listens to the stranger’s response to determine if the stranger responded to her fondly. This process would then repeat itself. While the stages in this process may seem complex, they are performed by individuals in the general public everyday. However, because people who do not have difficulties with social skills process this information naturally and within an extremely short period of time (less than a second), they do not think about it.

The goal of this approach is to get people with ID to the point where they also apply the skill naturally without having to think about it (O'Reilly & Glynn, 1995).

Because the social problem solving approach can be applied to any social environment and does not rely on specific social cues, it has a high level of maintenance, transferability, and generalizability (Browning & Nave, 1993; O'Reilly & Chadsey-Rusch, 1992; O'Reilly & Glynn, 1995; O'Reilly et al., 2000; Park & Gaylord-Ross, 1989; Rosenthal-Malek & Yoshida, 1994). O'Reilly and Glynn (1995) taught people with mental retardation *[sic]* how to initiate and respond appropriately to a teacher's questions. The two students who participated in the study transferred the skill from the training setting into the classroom setting and maintained the skill when tested four weeks later. In another study by O'Reilly et al. (2000), four adults with moderate levels of mental retardation *[sic]* were taught social skills needed to be social in a local bar. Using the problem solving approach, the participants were able to develop the social skills needed and were able to maintain these skills up to three years after the training was completed.

Modeling is one of the most commonly used strategies to teach social skills. When using the modeling approach, a skilled coach demonstrates the appropriate actions and then asks the person with a disability to replicate the skill (Baker, 2003; Foss, Auty, & Irvin, 1989). A four step approach can be applied; (a) tell the student they are going to perform the skill when the demonstration is over, (b) tell the students what they should focus on in the demonstration, (c) say each step as you demonstrate the skill, and (d) help the students remember the steps before they attempt the skill themselves (Yelon, 1996). In order for modeling to be successful, the individual who is observing the modeling

must pay attention and realize what the coach is trying to demonstrate (Goldstein, Sprafkin, Gershaw, & Klein, 1980; Yelon, 1996). Because individuals with ID may have increased difficulties recognizing what part of the demonstration they should focus on, extra direction may be needed. Modeling must also be accompanied by other methods in order to teach the person “how” to demonstrate the appropriate behavior and “why” they should demonstrate the behavior (Goldstein et al., 1980). For this reason modeling is often paired with one or two other approaches.

Effective pedagogy, feedback and reinforcement. Feedback that is given to the participants needs to be developmentally appropriate, immediate and specific. Feedback that is developmentally appropriate uses terminology that is understood by the participant and helps to clarify how to produce the skill. If participants have to think about what a word means or what an unfamiliar expression is referring to, it distracts them and deters their learning. It is also essential that the feedback that is provided is immediately after the skill is completed. If the feedback cannot be given immediately, the purpose of the feedback should then be to improve future performances. Whether feedback is given immediately or after a period of time, participants must be given the opportunity to retry the skill. Feedback also needs to express exactly what was good and bad about the performance. When first developing a social skill, the feedback given to the individual should focus on the intent of the skill and not on the small details. This helps to increase motivation, and self confidence. As the individual progresses in skill, more focus is placed on the smaller details (Rink, 2002). Reinforcements should also be used to “help define the behavior and make clear the expectations” (Rink, 2002, p.148). Positive

reinforcement helps to increase self confidence as well as self efficacy (Weinberg & Gould, 1999)

Effective pedagogy, presentation modalities. A variety of different presentation strategies should be used to accommodate different styles of learning. The use of instructional media, lectures, active learning, and demonstrations should all be used. Instructional media can include PowerPoint presentation, movies, pictures, and audio recordings. When using a variety of modalities to teach material, one increases the interest of the students by addressing the different learning styles (Sargent, 1989).

Effective pedagogy, disability appropriate. When working with individuals with ID, consideration should be placed on language choice as well as developmentally appropriate material. Because of the decreased IQ of individuals with ID, they may not have the vocabulary that their peers have. Using simple language where there are only a few key terms, pictorial cues, and minimal reading and writing activities increases the individual's understanding while not detracting from the information being presented (Korinek & Polloway, 1993). When working with an individual with autism, use short utterances that do not include unnecessary words. One should also use statements that tell the person what to do instead of what not to do (e.g. "look at Johnny when you are talking to him" and not "don't look at the floor") (Coyne & Fullerton, 2004). The use of visual supports, images that enhance understanding like a schedule, also increase understanding and learning of people with ASD. These images should remain simplistic and each image can only represent one thought. Images with busy backgrounds or numerous objects in them often lead to confusion (Coyne & Fullerton, 2004).

Qualified teachers. As with any teaching environment, the teachers need to be knowledgeable on the material that they are presenting, the learning styles of the participants, and the needs associated with the disability population they are teaching.

Appropriate setting. The use of a group setting has lead to a more positive development of social skills compared to a single-trainer model. Interventions for people with disabilities that have been based on a single-trainer model have had limited success (Koegel & Rincover, 1974; Strain, Kerr, & Ragland, 1979). The single-trainer model is not only unsuccessful, but it also requires a great deal of the teacher's time, making it difficult or unrealistic in many classroom settings (Brown & Odom, 1995). The more current approaches that uses two-trainer interaction or groups of people with and without disabilities interacting, have been found to be more successful in teaching skills such as expressive language, contextually appropriate behaviors, and play skills (Ihrig & Wolchik, 1988; Pepperberg & Sherman, 2000; Pierce & Schreibman, 1997). When teaching social skills, the use of a group also allows for a larger number of social contacts that are more diverse than those that would occur when conducting a single-trainer model.

The teacher to participant ratio must also be taken into consideration when teaching social skills. Special Olympics general ratio of supervision is 3 participants to 1 adult. Exceeding this number during direct instruction decreases the amount of interactions a participant has with the instructors and could decrease the amount of information developed and maintained. Even in general education lower student-to teacher ratios decrease the amount of time needed to develop a skill (Kelly & Melograno, 2004).

Lastly, the environment where the skills are being taught need to be considered. Small sensory occurrences such as a flickering light, the chatter of people in a hallway, or sitting in

very close proximity to other can be incredibly distracting to people with ID disabilities, especially those with ASD (Coyne & Fullerton, 2004). Provide an environment that minimizes distractions and creates a warm comfortable environment for all participants.

Effective Practice

Appropriate activity. The sport setting is an ideal environment to teach social skills because of the social relationships that are established amongst teammates. Castaneda and Sherrill (1999) found that the benefit of a Challenger baseball team program that the parents valued most was not the physical activity but the social interactions their children received. As one father said, "...The little friendships that occur are the most important thing of all because they have to struggle so much for friends." (p. 385). One of the most commonly reported reason for Special Olympics athletes to participate in Special Olympics is so that they could socialize with other people and make friends (Farrell et al., 2004; Shapiro, 2003; Siperstein, et al., n.d.). In Shapiro (2003) the Special Olympics athletes described the optimal environment as one "where coaches provided time for fun, facilitated opportunities for fitness, provided time to be with friends, and emphasized effort and improvement" (p.150). It is important that educators provide children the opportunity to choose their own situation, activities, and peers to interact with (Brown & Odom, 1995). A natural setting such as Special Olympics does not force the participants to be social but allows them to choose when they would like to interact with others. In a few documented cases, the Special Olympics environment has been successful in teaching a variety of skills including self-confidence, social competence, self-image, and the ability to develop and maintain friendships (Castagno, 2001; Riggen & Ulrich, 1993)

The use of play to teach social skills has also proven to be very successful. Delprato (2001) found that an intervention that was normalized and that included play or everyday activities was more successful in teaching language to children with autism compared to interventions that were more discrete-trial based . Physical education and sports have been cited as ideal natural environments to practice newly developed social skills (Groft & Block, 2003). Other studies have found that game experiences help people with disabilities to become more capable of interacting (Collard, 1981; Jansma, 1982; Schleien, 1983; Wehman & Schleien, 1981).

Multiple, natural settings. Naturalistic teaching, when the individual learns through guidance in natural interactions and experiences, has been found to be a successful teaching strategy that results in the skills being maintained and transferred to other settings (Barnett, Carey, & Hall, 1993; McClean & Cripe, 1997). Many interventions in the past have focused on having adults provide verbal and physical prompts, directions, and praise in order to teach social skills to young children with autism (Kohler Strain, 1990; Strain & Odom, 1986). With this approach, an adult sits with the child and provides him/her with a specific prompt. When the child responds appropriately the adult gives praise verbally or through a token system. If needed, the adult gives directions on how to improve the response. One of the reasons this particular approach often fails is because it does not promote generalization or maintenance (Brown & Odom, 1995). Without the prompt presented by the adult, the individual does not demonstrate the desired behavior. When taught in a natural setting, participants do not rely on the prompt. Naturalistic settings also lead to generalization. Because many individuals with ID do not generalize new skills to a different situation without specific

guidance, naturalistic programs are a more suitable approach for teaching and assessing social skills (Kohler, Anthony, Steighner, & Hoyson, 2001; McGee, et al., 1984). A natural setting is also essential to determine if the social skill training has been effective (Korinek & Polloway, 1993). In order to determine if the participants truly developed the social skill, they must be observed in natural settings where the environment and their interactions are not controlled. Observations taken in a natural environment allow one to pinpoint exactly what aspects of the intervention were successful and what components of the skill have been developed.

In a previous publication, Special Olympics Inc. acknowledged the importance of using an appropriate environment to facilitate skill development, stating that “policy makers and health organizers need to frame appropriately the opportunities that exist to facilitate skill development and independence for persons with mental retardation *[sic]*” (Special Olympics Inc., 2001, p.7). The natural environment created by a Special Olympics program can be structured to provide individuals with the opportunity to receive instruction and still practice their social skills naturally. Participants need a natural environment where they can practice their social skills in a natural setting without fearing the consequences associated with making a mistake (Baker, 2003). During a Special Olympics program, participants can practice their social skills through the use of fun activities and games while not having to worry about the social consequences of making a mistake. Participants then associate the social skills with a fun and positive experience. Feelings of success lead to a higher level of self-confidence, encouraging the participant to continue practicing and developing the skills.

Adequate practice opportunities. When compared to their peers, individuals with ID tend to require more repetition and practice of a skill in order to master and maintain the skill. Therefore, an extended amount of structured practice time must be provided (Korinek & Polloway, 1993). Individuals with ID often lack of adequate social experiences where they are able to practice their social skills. As social inadequacies pair with a general lack of experience, people find themselves in a situation where they are constantly failing at their social attempts. Eventually the constant failures lead to isolation where the individual does not want to try to interact with others or develop meaningful relationships for fear of rejection (Kirby, 2002). In order to combat this problem, a significant amount of time must be given to practice the development of social skills. The amount of time that participants have to practice their skills within the natural setting may affect the level of skill development more than the actual intervention. When comparing different social skills teaching strategies, Foss, et al. (1989) found that all strategies were effective to some extent. However, the amount of time spent actually teaching the skill had a negative effect on the students' performance of the skills. Activities that allowed for less teaching time and more practice and development of the skill in a natural setting were found to be more successful. Therefore, it is not the amount of instructional time that results in the development of skills, but the amount of time the individual is able to practice the skill in a natural setting.

Multiple skilled instructors. Instructors need to be knowledgeable on the social strategies that are being taught as well as how to help the participants develop the skills naturally. They should be skilled in providing reinforcement and feedback to provide the needed information to the participants while they are practicing the social skills. The use

of multiple instructors allows for an increase in diverse social interactions as well as practice time. Multiple instructors can be used within one environment (e.g., having buddies and coaches as seen in the Special Olympics Unified model) or they can be in different environments (e.g., the teacher at school, the coach at Special Olympics, and the parent at home).

Family involvement and support. Researchers have shown that having parents serve as a teacher in the home environment increases the child's learning and retention of skills (Baker, 1989; Graziano & Diamant, 1992; Tiedemann, Georgia, & Johnston, 1992; Webster-Stratton & Hammond, 1990). Having parents work with the child at home increases the number of instructional hours received by the child while avoiding the large expenses associated with extensive one-on-one therapy or instruction. Home instruction can occur seven days a week and can be done numerous times through out the day, increasing the participants' exposure to with the material. Another advantage of including parents is that they are able to provide meaningful reinforcers that may not be available to a practitioner. While information and feedback can be given to the participants in a program, the reinforcers that are provided at home tend to be much more powerful (Goldstein & Lanyon, 1971). Parents are also with their children with disabilities in a variety of environments outside of the school setting. When they have received training on how to help their children, parents can remind them of essential skills when entering a new environment (e.g., work) or when the skill may be forgotten (Ozonoff & Cathcart, 1998).

Lastly, having the parents serve as another teacher allows the child to practice the skills in another natural setting while also receiving necessary direction. As discussed

earlier, a natural setting is necessary for skill development and transferability. Because parents are teaching the child throughout the day, they are able to encourage the use of appropriate social skills whenever an appropriate situation arises and not just within the planned period of time. Because of numerous benefits associated with using parents in an intervention, many models including the well known TEACCH model (Treatment and Education of Autistic and Related Communication-Handicapped Children) (<http://www.teacch.com>) rely on the use of parental involvement to complement in-school interventions that are provided by a teacher or therapist.

Providing instruction to parents on how to teach their child with ID, results in parents serving as more effective teachers in the home setting. In order for the parents to be successful, many need to be given instructions on how to help their child develop and how to provide different opportunities to practice the social skills. Gerber (2003) states that one common problem seen with using parents as a teacher is that parents are so eager to help their child develop social skills that they constantly ask their child questions and do not give the child a chance to initiate a conversation or ask a question. In order to prevent parents from putting their child in a passive role, Gerber recommends that parents should be given suggestions and guidance about what they should expect and how to incorporate it into their own lives.

Methods

Research Design

This study consisted of multiple replications of a single-subject research design, specifically an A-B-C-A quasi-experimental repeated measures design. The independent variables were the classroom, soccer, and retention phases of the Social Skills and Sports

(S³) program. The dependent variables were social skills, namely making eye contact, staying on topic, and taking turns during conversations.

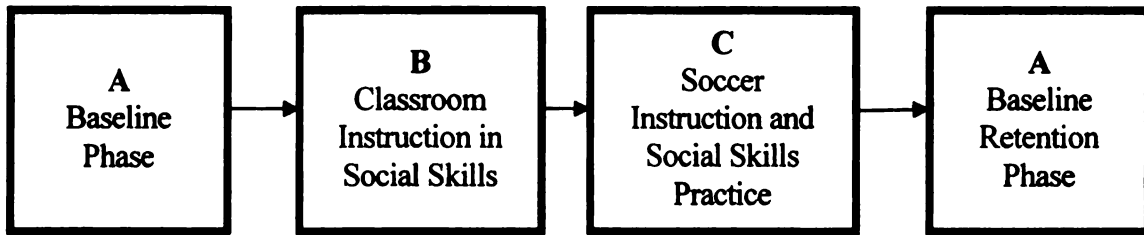


Figure 2. Research design

Inter- and intra-participant variability is a major challenge when conducting research among persons with intellectual disability (Batshaw & Shapiro, 2002; Towbin, et al., 2002). A single-subject design permitted the student investigator to search for aptitude-treatment interactions. Having participants serve as their own controls sidestepped the virtually impossible challenge of trying to identify a matched control group. The repeated measures feature permitted the student investigator to account for “off-days” in participants’ social behaviors. The A-B-C-A components of the design allowed analyses of the effectiveness of each phase of the intervention (Barlow & Hersen, 1984).

Participants

The primary participants were young adults who were eligible to participate in Special Olympics programs. To recruit the participants, Melissa Alexander distributed flyers that provided a brief overview of S³, along with her contact information. The flyers were distributed to all of the schools within a 45 minute driving distance of the facility, Area 8 Special Olympics office, Special Needs Network at Michigan State University, soccer organizations in the area (e.g. Capital Area United Soccer Club), and disability

support groups in the Lansing area such as the Down Syndrome Support group.

Participants included:

Special Olympics participants. Five young adults (4 males and 1 female) from mid-Michigan participated in the study. They were between the ages of 14 and 24 with the mean age being 17.4 (SD= 2.57). In order to be included in the study participants had to (a) have a mild/moderate intellectual disability (such as mental retardation, autism, and Asperger's Syndrome) as the primary disability, (b) be verbal, (c) have current Special Olympics Application for Participation and Medical Update forms, and (d) have parent consent and participant assent. Potential participants who had atlantoaxial instability were not eligible to participate because of the potential for injury in the soccer component of the intervention.

The disabilities represented by the participants were autism, mental retardation, Down syndrome, severe learning disability, ADHD, and emotional impairment (some participants had more than one disability). All participants were enrolled in special education classrooms within a 20 minute radius of a Midwestern city, were verbal, and demonstrated a lack of general social skills before entering the program. None of the participants had received social skills training outside of school. However, all participants had worked with speech therapists and/or paraprofessionals and teachers through out their lives in an attempt to improve their social skills. Four of the five participants had participated in Special Olympics sports before participating in this study.

Parents. One parent for each participant was involved in the study. Parents provided written informed consent for their involvement. Three of the five families were single parent homes with the mother serving as the primary caregiver. The other two participants were raised by a mother and a father, however the mother was the primary

participant in this study. In both of the dual parent homes, the parents were in their second marriage. The five mothers/step-mothers were between the ages of 38 and 50 with a mean age of 45.8 (SD= 5.03). Their level of education ranged from “did not complete high school” to “completed an associates degree” and none of the mothers had received previous training on how to teach social skills to their child.

Partners. Through out the entire program, four young adults from local high schools served as partners to the participants with disabilities as in the Special Olympics Unified Sports Program. There was one male and three female partners who were all 15 years of age. The partners were all current member of a private traveling soccer club in the Mid-Michigan area and they had assisted with the local Special Olympics Soccer team during the previous year.

Five participants were chosen to ensure the safety and a quality program. The initial research proposal suggested that eight individuals would participate in the program. However, due to difficulties recruiting individuals who met the project’s qualifications and were interested in participating, only 5 participants enrolled in the program.

Table 1
Description of Parents and Participants in S³

Name	Age	Education	Child's Name	Child's Age	Child's Disability
Laura	38	Completed high school	Tony	14	Down Syndrome
Amanda	44	Completed high school	Jackie	16	Emotional impairment and learning disability
Kathy	47	Associates degree	Jeff	15	Autism and intellectual disability
Sandy	50	Did not complete high school	Billy	18	Down syndrome
Martha	50	Associates degree	John	24	Down syndrome and ADHD

Although five individuals participated in the intervention, complete data were only collected for four participants. All five participants received the full intervention, and their social skill development was evaluated using all of the instruments except for the Observation Skill Rating Form. The Observation Skill Rating Form could only practically be conducted with a small number of participants. Therefore, only four participants were observed. The four participants that were observed were selected based on their disability and level of social skill demonstrated at the program's onset. The four males were chosen because they encompassed the Down syndrome and autism disability labels and demonstrated the lowest level of social skills at the onset of the program.

Intervention

In the 14-week S³ program, participants learned social skills in a classroom setting, practiced those skills in the context of soccer activities, and practiced the skills with their family in the home and community setting. Several attributes of S³, determined from the review of literature, helped to insure the success of the program.

Numerous skilled teachers. During the classroom activities, the participants received expert instruction from one classroom teacher and the head coach. They also received information from the assistant coach and high school aged partners. During the soccer portion of the program, participants' social skills were reinforced and redirected by the coaches and partners. In addition, parents reinforced the use of social skills in home and community settings using the Parent Supplemental Activities Packet.

Natural settings. Participants practiced the skills in a variety of real-life settings, including soccer, home, and community. The multiple settings were used to help facilitate eventual generalization of social skills to other environments.

Physical activity component: Soccer was an ideal team sport because it is common, popular with a variety of age groups, affordable, and understood by the student investigator. By acquiring basic skills in soccer, participants can now play in disability-specific programs such as Special Olympics. They can also participate in inclusive soccer activities with their families, their peers, and other people in the community. Soccer does not require a large amount of equipment, making it an affordable sport, as well as one that can be played in a backyard or a community center. At the completion of the program, participants were given their own soccer ball, allowing them to continue practicing their skills at home.

Because soccer is a team sport, the participants were also able to learn how social skills can lead to friendships as they developed positive relationships with their teammates. The social relationships that were developed increased the participants' enjoyment of the social skills activities as well as the sport. The primary investigator was currently certified as a Special Olympics soccer coach and had coached a Special Olympics soccer team in the previous year, helping to ensure a quality experience for the athletes. The two coaches also had extensive experience playing and coaching soccer.

Safe, fun, and positive environment. Soccer provided a fun environment where participants felt safe to practice their emerging social skills. Special Olympics athletes received positive reinforcement from other participants, partners, and coaches. The

student investigator ensured that all participants felt safe and comfortable through out the program by directly communicating with the participants' about their emotions, correcting and redirecting any negative behavior between participants, and talking with parents through out the program. The student investigator also ensured the program was fun by incorporating drills that the participants reported they enjoyed, asking the participants for suggestions on discussion topics, talking with the parents to ensure the participants were expressing enjoyment about the program, and reviewing the partners' and coaches' daily journals.

Extensive socialization opportunities. Participants interacted with a variety of people including other participants, partners, coaches, the student investigator, family members, and community members. As the ratio of coaches and partners to participants was at least a 1:1 ratio, participants were always given the opportunity to interact with a partner or a coach during the program. Partners and coaches were trained to initiate a social interaction when they were waiting in line, were taking a water break, or waiting for soccer practice to start. During the two informal scrimmages that were arranged with a local Special Olympics soccer team, participants were also given the opportunity to interact with other people who have intellectual disabilities. In addition to approximately 12.4 hours of social skills instruction and 35.6 hours of practice opportunity during the soccer component of S³, participants also practiced their social skills at home and in the community with their families. Parents were asked to practice social skills 4 days a week x 15 minutes per practice across 12 weeks.

Effective pedagogy S³ consisted of 14 weeks x 2 sessions per week x 90 minutes per session. There were six phases of the program; introduction, baseline, classroom, soccer, party, and baseline/retention (Figure 3).

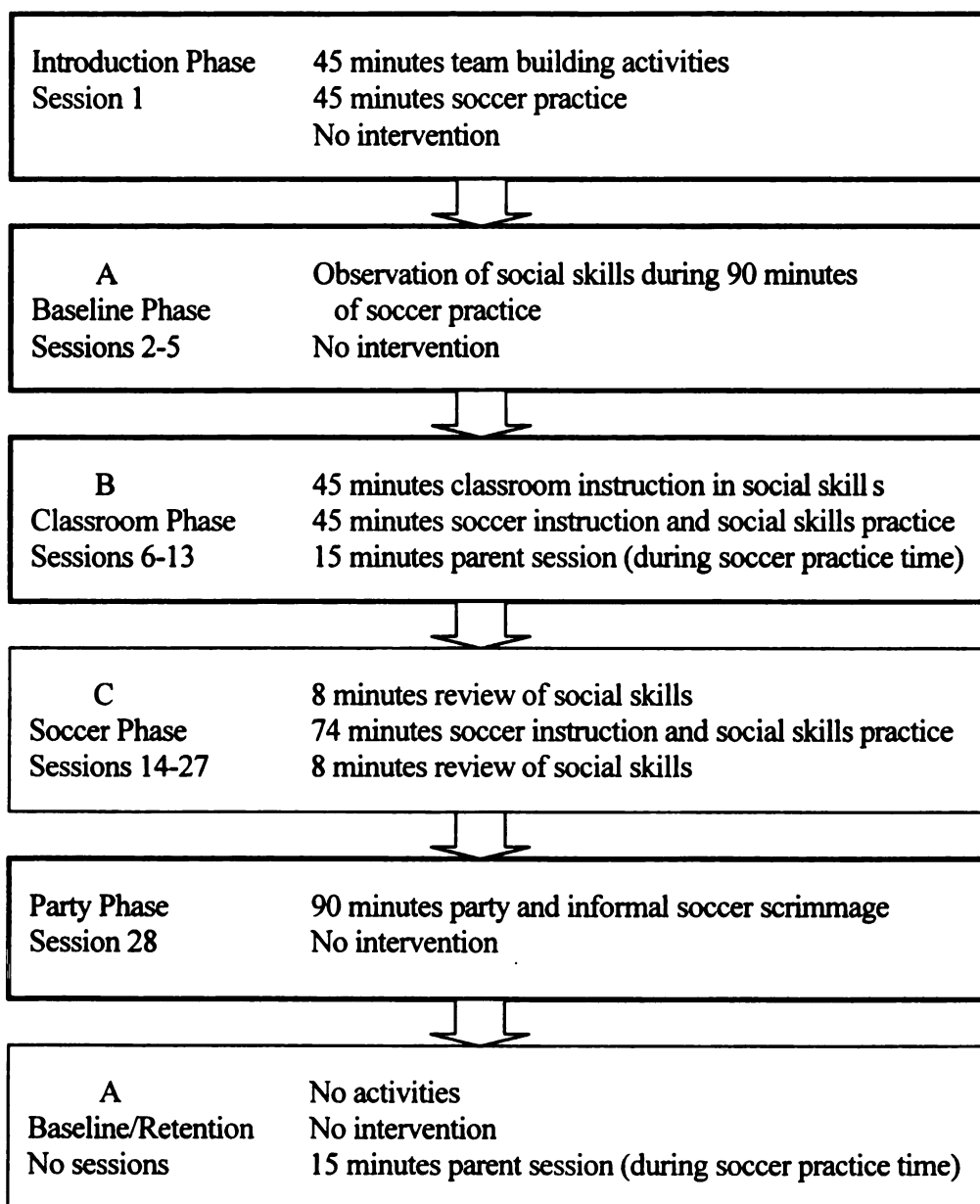


Figure 3. Phases of the S³ Program

Introduction phase. The purpose of this phase was to start developing a sense of group unity and trust amongst the participants. Participants were introduced to the staff and other participants, received a tour of the facility, participated in team-building activities, and played in soccer activities. During this time the participants also came up with a team name. There was no social skill instruction given during this phase.

Baseline phase. The baseline phase was used to determine the participant's baseline level of social skills using The *Observer Skill Rating Form*. Participants were engaged in soccer drills and activities, but the staff did not encourage or reward participants for socializing with each other nor did staff provide specific instructions on the target social skills. During this phase, one session had to be canceled due to bad weather. However, observation data were still collected over four sessions.

Classroom phase. The purpose of the classroom phase was to directly teach the participants social skills before giving them the opportunity to practice the skills in soccer. Each session of the classroom phase consisted of 45 minutes of classroom activities for participants to discuss social skills and play games and 45 minutes of soccer where participants practiced social skills while participating in soccer activities.

The intervention, written by Melissa Alexander, applied a combination of proven strategies including direct instruction (Elliott & Gresham, 1993; Gresham, 1984), modeling (Baker, 2003; Foss et al., 1988), and process training (Huang & Cuvo, 1997; O'Reilly et al., 2000). As suggested by Baker the intervention consisted of a lot of "...teaching strategies that rely on pictures, physical prompts, and direct modeling..." (2003, p. 29). In order to accommodate the cognitive level of the participants, process training was taught in a very simplistic form. Participants were taught to (a) look at the

person you wanted to talk to, (b) listen to what the person was saying, (c) think about what you should say in response, (d) talk to the person, and (e) repeat the steps. To assist the participants in remembering the steps, the participants and student investigator would summarize the steps as “look, listen, think, talk”. As they said the step, the student investigator and participants would point to the appropriate body part. For example, when participants said “look” they would point at their eyes. A poster that showed the four steps was also created. This poster was incorporated into all activities in the classroom, on the soccer field, and at home.

For each lesson, a PowerPoint presentation that used both pictures and words was created in order to accommodate the different levels of abilities and learning styles. The presentation was projected on a screen and was also printed and placed in a 3-ring binder that was given to each participant. While each lesson varied a general format was followed. When participants first arrived to each session they talked casually amongst each other. For the first 2-3 minutes of each session the classroom instructor would ask the participants to share information about their day or the previous weekend. The following 7-10 minutes were used to present the PowerPoint material and introduce the concept of the day. During this time participants were also provided with a small healthy snack. Following the PowerPoint presentation, the participants were engaged in structured activities for approximately thirty minutes. These activities were created to help the participants learn and practice the specific social skill discussed during the session. They were also given direct feedback on the performance of the skill and instructions on how to improve the skill. For the remaining 45 minutes of each session,

the participants completed soccer activities where they continued to practice their newly learned skills.

During Sessions 5-7 the classroom instruction focused specifically on contributing relevant information to the conversation. Sessions 8-9 focused on taking turns, and Sessions 10-11 focused on making eye contact. Session 12 was a review of the three social skills. As the sessions progressed, participants were reminded to incorporate previously learned skills. For example, during Session 9 participants were reminded that while they are taking turns, they should also contribute relevant information. For a sample lesson plan please refer to Appendix A.

Soccer phase. The purpose of the soccer phase was to allow participants to develop and practice the skills they learned during the classroom portion of S³ through natural interactions and planned activities. Specific lesson plans that included soccer drills as well as social activities were created for each session. The participants were instructed on soccer skills for a total of 74 minutes each session. During the 8 minute review sessions that occurred before and after the soccer activities, participants discussed the three social skills (Table 2). The classroom instructor reminded participants of the social skills, encouraged to use of the skills, provided verbal positive reinforcement for proper demonstration of the skill, and gave redirection as needed. Participants also participated in brief games to remind them how to perform the skill correctly.

Throughout the soccer practice, structured activities fostered social interaction. For example, during snack, participants could bring an item in to share with the group. Each participant was given a turn to talk about their item with the group and participants were encouraged to contribute to the conversation by asking questions or adding

information. Each soccer practice would also have one or two drills specifically formatted to allow the participants to develop their soccer skills while also conversing with a partner. For example, participants would play a modified game of tag where they would dribble the ball around in a large box. When a participant was tagged they were required to wait until another participant asked them a question. The “frozen participant” had to respond to the question using relevant information and making eye contact before they could continue playing the game.

Table 2
General Format of a Soccer Session

Time Interval	Activities
8 minutes	Review of social skills
74 minutes	Soccer
	10 minutes warm-up
	45 minutes skill development
	25 minutes modified game time
	10 minutes cool-down
8 minutes	Review of social skills and positive reinforcement of skills applied

There were also a variety of natural social interactions that occurred throughout the soccer practice. The high school aged partners intermingled with the participants helping create spontaneous social interactions throughout the practice. When waiting in line, during warm-up and cool-down, during water break, and while doing activities where the partners and participants were paired, natural conversations were strongly encouraged. Partners also provided positive reinforcement when they observed appropriate social interactions, and provided redirection as needed. Another time that social interaction occurred was during the two informal scrimmages that were arranged

with a local Special Olympics team. These two scrimmages, lasting 25 minutes each, occurred at the end of two soccer sessions. Participants were strongly encouraged to interact with the other team during the half time water break as well as before and after the scrimmage.

The soccer portion of the program resembled a typical Special Olympics soccer practice with only a few modifications made to the drills in order to encourage social interactions. While the rules specified by Special Olympics (Joseph P. Kennedy Foundation, n.d.) were applied, there was some flexibility to accommodate the participants' development and understanding of the game. Due to the fact that there were only five participants and they were not physically fit, the playing field was shortened so that participants felt successful and did not become too fatigued. For a sample soccer lesson plan see Appendix B.

In order to ensure the coaches were comfortable delivering the different drills, the head coach assisted the student investigator in designing the lesson plans. The head coach contributed information regarding the warm-up activities, drills, and games played by the participants. The lesson plans were made at least one week in advance. Both coaches discussed lesson plans with the student investigator before the start of the program. Coaches went over the goals for each session and responsibilities that each coach was going to take during the session. The partners were also told of the lesson plan before the start of the session. If a revision to the lesson plan was needed (e.g., participants struggled to understand the concept of an activity putting the group behind schedule) the student investigator and head coach would make the change to the schedule

on the spot and inform the assistant coach immediately. These changes were then recorded in the coaches' and student investigator's journals.

Party phase. The party was a time to recognize the participants for their accomplishments while also creating a sense of closure. Occurring on the last day of the program, the party consisted of a scrimmage where the participants played against their families followed by an award ceremony and pizza party. Each participant received a certificate for completing the program, a certificate listing areas of personal improvement, and a soccer ball to take home. Parents were given a picture frame with a team picture.

Parent Supplemental Activities Packet. The parents helped participants develop their social skills at home through an activities packet that complemented the classroom material discussed in S³. On the first day of the classroom session, parents received a 3-ring binder that contained the Parent Supplemental Activities Packet. This packet contained additional information about the social skills being discussed; information about how to practice and encourage the use of social skill in the home; activities parents could do at home to complement the classroom material discussed in S³; and a copy of the PowerPoint presentations used in the classroom. For a sample of activities provided in the packet refer to Appendix C.

The list of activities was designed to be incorporated in the family's daily lives and was not meant to interfere with their normal routine. Many of the activities were games that could be done while driving in the car, doing chores, or eating dinner. For example, an activity that was designed to practice contributing relevant information was to play "I spy" in the car. People involved in the game would point out something they

saw as they were driving by it. They would then try to think of things they could say about the object or questions they could ask a person. For example, I spy a woman walking her dog. I could ask “what is your dog’s name?” or “how old is your dog?” Some of the other activities were more structured and required the families to set aside a specific amount of time. For example, all families received cards that could be used to play the Memory game. While playing Memory, the parents were encouraged to talk about the pictures on the cards (e.g. a card with an apple could start a conversation like “I don’t really like apples, but I love apple pie”). Parents were also encouraged to place emphasis on turn taking within the actual game as well as within the conversation.

Along with the activities, parents were asked to provide positive reinforcement to their child when they saw him/her demonstrating the social skills correctly through out the day. If the participant was not demonstrating the skill correctly, parents were asked to redirect the behavior giving direct instruction as needed.

Parents were asked to practice the social skills at least 4 times a week for 15 minutes each practice session, resulting in at least 60 minutes of practice time each week. When parents received the packet, the primary investigator met with them to discuss how to properly use the activities. The parents were instructed to pick the activities that they felt best fit into their family’s routine and would be enjoyed by their child. It was emphasized that their child may not like all of the activities. Parents were also told that they could modify the activities to fit the needs of their family as long as they made note of modifications. The researcher also encouraged parents to come up with their own activities if they felt their child would prefer a different activity. If a new activity was created, parents were asked to describe it when recording their practice times.

For the following 4 weeks, the primary investigator met with the parents twice a week for 15 minutes to discuss how to teach the skills to the participants, how to use the parent activities, and how to complete a progress report on the child's practice attempts during the program. One area of particular focus was introducing the "look, listen, think, talk" model. While in these meetings, parents were also encouraged to discuss which activities were working well, any frustrations they may be having, or ask questions about unclear information. After the four week period, the student investigator called parents every two weeks to check on their progress and to answer any questions.

Instrumentation

Several instruments were used for data data. Please refer to the data collection procedures for information on who administered the instruments, when they were administered; and where they were administered.

Demographic profile (Appendix D). Parents were asked to provide basic information such as the participant's age, sex, disability, extent of participation in extra curricular/sports activities, and past social skills training. They were also asked to provide their own age, experiences teaching social skills to their children, and highest level of education.

Special Olympics Athlete Application to Participate and Athlete Medical Update Form (Appendix E). To insure eligibility for Special Olympics and to obtain relevant health information, participants were asked to complete the paperwork required by Special Olympics. Parents were asked to sign a waiver (part of the consent form) that allowed Special Olympics Michigan to provide the student investigator with a photocopy of these forms. The information obtained from the Special Olympics forms was used to

determine any health concerns that needed to be addressed, such as allergies, and to indicate medical clearance to participate in soccer. Coaches, partners, and the interviewer were provided with a summary of need to know medical information for all participant.

Interviews with Parents (Appendix F) . Parents were interviewed before the program started (baseline), at the completion of classroom phase (post-classroom), at the completion of the soccer phase (post-soccer), and 5 weeks after the intervention was completed (post-retention). Before starting an interview, parents were reminded that they could skip any question that they were not comfortable answering and could stop the interview entirely at any time. They were also reminded that they should answer all questions as honestly as possible and not give answers that they thought the researchers wanted to hear. All interviews were semi-structured. Therefore the interviewer followed a script but had the freedom to ask follow-up probes as needed.

The baseline, post-classroom, and retention interviews lasted approximately 5-15 minutes and the post-soccer interviews lasted about 15-20 minutes. In all of the interviews, the parents were asked to reflect on the participant's social skills at home, at school, in the community, and with strangers. During the post-classroom, post-soccer, and retention interviews, they were also asked about any changes in their child's social skills abilities. Another area of discussion during the post-classroom, post-soccer, and retention interviews was the Parent Supplemental Activities Packet. Parents were asked to discuss their use of the packet, activities they did and did not like, activities their child did or did not like, struggles they had with the packet, and recommendations to improve the packet. Lastly, parents were asked some questions regarding their overall opinion of the program and recommendations for future programs.

Alexander Adaptation of Skill Rating Form for Parents (Appendix G). The Alexander adaptation of Baker's Skill Rating Form (2003) was completed by the parents before each interview (baseline, post-classroom, post-soccer, and retention). Parents were asked to rate the participants' social skills on a scale of 1-5. A score of 1 represented that the participant almost never demonstrated the skill and 5 represented that the participant almost always demonstrated the skill. Next to each social skill there was also a column to record if the skills were inconsistent or varied depending on the environment.

Observation Skill Rating Form (Appendix H). The Observation Skill Rating Form was used to judge the participants' social interactions while playing soccer. Each observation periods was 70 minutes long. The participants were observed for 4 days during baseline, 2 days post-classroom, and 2 days post-soccer. Observers recorded how many times participants demonstrated the behaviors, with whom they demonstrated the behavior, and the quality of the demonstrated behavior. The quality of each demonstrated behavior was based on a three point scale consisting of a zero, minus, and plus sign. A zero sign suggested participant did not attempt the appropriate behavior or the correct behavior was unrecognizable. A minus sign signified an attempt was made at the correct skills but that it was demonstrated at a beginning level or at an emerging level. A plus sign signified that the participant demonstrated a functional and proper use of the skill. A notes column was also present to record any thoughts or observations made by the observer. For example, the observer could elaborate on why the skill was labeled as a beginning level. There were two observers. Each observer was responsible for observing two participants at one time. In order to ensure inter-observer agreement, the observers participated in a training period before the start of the program where they observed a video that replicated the

program. In order to ensure inter-observer agreement, the observers participated in a training period before the start of the program where they observed a video that replicated the program. During this training period, observers had to be in agreement 85% of the time with each other and the primary investigator. Inter-observer agreement was calculated as the number of agreements divided by the number of agreements plus disagreements multiplied by 100 (Kazdin, 1982). Inter-observer agreement during training was calculated at 87%. While the observers were collecting data, the coaches and partners did not provide participants with social skills instruction or redirection, but simply allowed for natural social interactions to occur.

Tracking Your Progress Form. (Appendix I). Parents were asked to keep a weekly record of the practice activities they did at home. On the Tracking Your Progress form, parents recorded what activity they did with their child, how much time they spent on the activity and the results of the activity (e.g. did their child enjoy the activity). Parents were asked to return the completed sheet the following Monday.

Journals (Appendix J). After every session, the coaches, instructors, and partners completed a one to two page journal entry that summarized any observations about participants' social skills during the session. The coach journal focused on the implementation of the lesson plans and participants' reactions to the lesson plans. The partner journal focused on the quality of social interactions with the participants. The instructors' journal recorded observations about data collection, classroom instruction, and soccer instruction. All journals asked about observations such as a positive change towards the goal behavior, a decrease in the goal behavior, frustration demonstrated by the participant when trying to perform a goal behavior, or an unusual approach at a goal

behavior. Reasons that a participant may be having an “off day” or an exceptionally good day were also recorded by all staff. The journals were sent to an email account specifically created for this project within 48 hours of the session completion. The student investigator immediately read the journal entries to determine the integrity of the data-collection process and the fidelity of the S³ intervention as well as to address any problems or concerns expressed by the staff.

Data Collection Procedures

Staff training. All staff members were required to complete preliminary training. Before there was any interaction with the participants, coaches and the student investigator were required to complete a Special Olympics Volunteer A Form, the Special Olympics General Orientation Online, The Special Olympics Protective Behavior Lesson Online, First-Aid Certification, and CPR certification. All staff were also trained by the student investigator on how to interact with Special Olympics athletes and their parents.

The student investigator met with the two coaches at two different occasions for a total of 2.5 hours. During the first session, the coaches received three manuals: (a) a general staff manual, (b) a first aid manual, and (c) a coaching manual. The general manual gave an outline of the program, clear definitions of the social skills that were being emphasized in the program, important information to know about the population they would be interacting with, policies regarding confidentiality, payroll information, and important contact numbers (see Appendix K for the General Manual’s Table of Contents). The first aid manual outlined general first aid procedures that would most likely be needed given the physical activity and the population. The coaching manual

gave a detailed outline of expectations and responsibilities, a general outline of a coaching plan, important coaching strategies including behavior management techniques, motivational tools, information on how to provide positive reinforcement, and a list of different activities that would be done during the program. During the first meeting, the student investigator highlighted important parts of the manual and discussed the program in general. She also discussed how to complete the journals and had the coaches complete a practice journal. During the second meeting, the student investigator created the first four soccer lesson plans with the assistance of the coaches making sure to educate the coaches on important disability principles. She also answered questions they had about the manuals and the overall program. During this meeting the student investigator also informed the coaches of the enrolled participants general interests, disability information, motivations, and possible things to avoid. Lastly, she reviewed how to appropriately interact with people with disabilities as well as their parents.

The partners met for one training period that was two hours long. During the meeting, the partners received the (a) general manual, (b) first aid manual, and (c) partner's manual. The partner's manual was very similar to the coach's manual but focused on the responsibilities of the partners. During the meeting, the student investigator went through the manuals in great detail and discussed how to complete the journals. The coaches were also required to attend this meeting so that the coaches and partners could become acquainted before the start of the program. After discussing the lesson plans for the first two weeks, the student investigator then had a discussion with the partners about how to appropriately interact with the participants, how to encourage good social behaviors, how to initiate social interactions, and how to provide positive

reinforcement. The meeting was concluded by discussing any questions, concerns, or fears that the partners were experiencing.

The observers met with the student investigator on two different occasions for a total of 2.5 hours. Before the first meeting, the observers were given a general manual as well as an observer's manual. The observer's manual gave a detailed description of their responsibilities, directions on how to complete the Observation Skill Rating Form, and a sample of a completed Observation Skill Rating Form. The observers were asked to review the material before the meeting. At the meeting, the student investigator went through the general manual highlighting the important information. She provided directions of how to use the Observation Skill Rating Form in detail. After giving instructions on the instrument and answering the observer's questions, the observers were asked to practice using the instrument on a video recording of a Special Olympics soccer practice. The student investigator then took the practice instruments and did a comparison of the two observers. The observers had to show 85% inter-observer agreement between each other as well as in comparison to the student investigator. As this level of agreement was not met, another meeting was scheduled. During the second meeting the student investigator reviewed the instrument and discussed the different levels of skill demonstration. She then demonstrated how she would code the social interactions by watching 10 minutes of a video clip and verbally analyzing the participants' interactions. After the demonstration, the student investigator answered the observer's questions and had them conduct another practice attempt. At this point, the observer demonstrated inter-observer agreement between themselves. They also demonstrated inter-observer agreement with the student investigator at an acceptable

level. Before the first day of data collection, the observers were given a lab notebook to record notes that would not fit on the instrument as well as a sheet that provided the observers with the coaches, partners, and participant's name and photo. This information was given to the observers in advance so they could familiarize themselves with the people they would be observing.

The interviewer met with the student investigator on two occasions for a total of three hours. During the first meeting, the interviewer was provided with the general manual as well as the interviewer's manual. The interviewer's manual outlined the expectations for the interviewer as well as the interview protocol for all four interviews. The manual also discussed how to complete field notes, how to work the recording equipment, and how to transcribe the data. After discussing how to properly conduct an interview, the interviewer was asked to conduct a mock interview on the student investigator using the protocol from Interview 1. Through out the interview, the student investigator would stop the interview in order to provide the interviewer with instruction or to clarify the procedures. The interviewer then conducted a second practice interview on the student investigator using the protocol for the second interview. During this interview the interviewer was not provided feedback from the student investigator until the completion of the interview. Following this meeting, the interviewer was required to conduct the interview at least four more times with a peer. She was asked to tape record each of the practice interviews. During the second meeting, the student investigator listened to the interviews providing a running commentary to the interviewer. Satisfied with the quality of interviews provided by the interviewer, the student concluded the interviewers training.

Consent Process. Once the parents contacted the student investigator, a preliminary meeting was arranged at the family's home. The student investigator provided the parents with the consent form (Appendix L) and then gave a detailed description of the program including the purpose of the intervention, responsibilities of the child, responsibilities of the family, potential benefits of the program, and potential risks of the program. With the parents' permission, the student investigator then spoke with the potential participants who had a disability. After introducing herself, she had a casual conversation with the participants asking questions like "where do you go to school" and "what did you have for lunch today". The purpose of this interview was to determine the participants' level of functioning abilities to ensure they qualified for the program. If the participants could answer at least 4 out of 6 questions, they were considered eligible (assuming they met all other criteria).

Once the parents provided consent for their children to participate, the student investigator talked with the potential participants about the program. Parents were asked to observe these interactions to ensure that the student investigator were not upsetting or coercing potential participants. The student investigator showed a brief video clip of a Special Olympics soccer practice so that the children would understand what the activities would be like. She also discussed how the group would learn how to talk to people and make new friends. If the participants said that they wanted to participate in the program, they were asked to sign an assent form.

Before leaving, the student investigator asked the parents to also complete the demographic profile. If they did not have a Special Olympics Athlete Application to Participate or a current Special Olympics Medical Update Form on file with Michigan Special Olympics office, they were given the appropriate document and asked to complete it before

the start of the program. Parents were also given a second copy of the consent form and information packet to keep.

Data collection schedule and procedures. Data was collected at four different intervals throughout the program: (a) during the baseline phase; (b) after the classroom phase; (c) after the soccer phase; and (d) five weeks after the completion of the intervention (Table 3).

Attendance was taken at every session to ensure that participants were being exposed to the classroom material and receiving sufficient time to practice the skills during the soccer sessions. Participants had to be present for at least 75% (9 out of 12 sessions) of the classroom/baseline phases of the program and 80% (23 of the 28 sessions) of the entire program to be included in the sample population. One participant was present for 100% of the sessions, two participants were present for 96% of the sessions, one participant was present for 93% of the sessions, and the last participant was present for 89% of the sessions.

The interviewer was responsible for arranging the interviews, conducting the interviews, and reporting back to the student investigator. She contacted the families and arranged for a convenient time and location to administer the Alexander Adaptation of Skill Rating Form for Parents and the interviews. At the completion of each official interview, the interviewer completed a field note report that was emailed to the student investigator. The report included the amount of time the interviews took, a general overview of how she felt the interviews went and any of the interviewer's concerns. This data was recorded by the student investigator in a separate lab notebook. The interviewer was then responsible for transcribing the interviews verbatim within two weeks after the

completion of the interviews. The interviewer was also responsible for entering the data gathered on the Alexander Adaptation of Skill Rating Form for Parents. After transferring this data into an electronic file, the data was placed into a secure filing cabinet

Table 3
Schedule of Instrumentation

Instrumentation	Administered By	Where Administered
Pre-program (before program starts)		
Consent/Assent Form	Student Investigator	Participant's Home
Demographic Profile	Student Investigator	Participant's Home
Special Olympics Athlete Application to Participate	Student Investigator	Participant's Home
Special Olympics Medical Update Form	Student Investigator	Participant's Home
Baseline (Sessions 2- 5)		
Observer Skill Rating Form	Observers	Soccer Sessions
Parental Interview	Interviewer	Participant's Home
Alexander Adaptation of Skill Rating Form	Interviewer	Participant's Home
Post-Classroom (Sessions 13-15)		
Observer Skill Rating Form	Observers	Soccer Sessions
Parental Interview	Interviewer	Participant's Home
Alexander Adaptation of Skill Rating Form	Interviewer	Participant's Home
Post-Soccer (Sessions 25-27)		
Observer Skill Rating Form	Observers	Soccer Sessions
Parental Interview	Interviewer	Participant's Home
Alexander Adaptation of Skill Rating Form	Interviewer	Participant's Home
Retention (5 weeks after soccer)		
Parental Interview	Interviewer	Participant's Home
Alexander Adaptation of Skill Rating Form	Interviewer	Participant's Home

The Observer Skill Rating Form was completed during 70 minutes of soccer play by two investigators who have no other role in the research project. When the observers arrived at the program, they were given a clipboard, two blank copies of the Observation Skill Rating Form and a copy of the session's lesson plan. As two of the partners were identical twins, clothing differences between the two young women were also identified. The observers were then told which two participants they would be observing for that particular session. In order to ensure that each observation period was exactly 70 minutes, the student investigator told the observers exactly when to start and stop recording social interactions. At the completion of each data collection session the observers returned the completed observation forms to the student investigator. These forms were then placed into a file folder that went into a secure briefcase. The observers were responsible for keeping their lab notebook until the completion of the final observation. At this time the student investigator collected the notebooks and stored them in a locked filing cabinet.

Data management. Data management includes three main components, ownership, access and control of the data.

Ownership. Michigan State University owns all data that was collected in this project.

Access. Melissa Alexander and her advisor, Dr. Gail Dummer, were the only people who had access to all of the raw data collected in this study. Other members of the research staff and the dissertation committee had access only on a need-to-know basis (e.g., the interviewer had access to the Demographic Profile to learn about the participant and family as a means of facilitating a successful interview).

Control. In order to protect participants' privacy, consent and assent forms are currently stored in a locked file cabinet that is located in a locked private office at Michigan State University. All print and digital media data are also stored in a separate locked file cabinet. Digital recordings of interviews were erased as soon as interviews were transcribed and the transcription had been verified for accuracy. Different items of data from the sample participant are linked using code numbers/pseudonyms, and the link between participants' names and the code numbers/pseudonyms will be destroyed as soon as practical.

Data Analysis

Qualitative and quantitative methodology was applied to analyze the data gathered from the different instruments (Table 4). As this study involved five separate case studies, each participant's data were analyzed separately. When analyzing the Observation Skill Rating Form, a 5% change in the mean of skill attempts from one time period to another was considered clinically significant. For the Parent Skill Rating Form, a change of one level was considered clinically significant. The data gathered on the Observation Skill Rating Form and the Parent Skill Rating Form was also compared to the interview data.

All interviews were transcribed verbatim and analyzed using the procedures recommended by Patton (1990). The student investigator, the faculty advisor, the head soccer coach, and the assistant soccer coach independently analyzed the data using axial coding. All four researchers then met to come to a consensus about the lower order and higher order themes.

Table 4
Data Analysis by Research Question

Question	Data Source	Analysis	Decision
1- Did participants develop and refine social skills as a result of the S ³ program?	Parent Interviews (baseline, post-classroom, post-soccer)	Qualitative analysis: themes and subthemes	Look for parent report of development of skill in program skills as well as other social skills Look at other general themes presented
	Observer Skill Rating Form (baseline, post-classroom, post-soccer, retention)	Visual analysis	Visual trend of progression Comparison of means from each phase
2- Did participants maintain the social skills developed in S ³ until 5 weeks post program?	Parent Interviews (post-soccer and retention)	Qualitative analysis: themes and subthemes	Look for parent report of skill maintenance in program skills as well as other social skills
	Alexander Skill Rating Form for Parents	Visual analysis	Visual comparison of numbers
3- Did participants generalize the social skills they developed in the S ³ program to home, school and community setting?	Parent Interviews (post-classroom, post-soccer, retention)	Qualitative analysis: themes and subthemes.	Look for parent report of skill generalization in program skills as well as other social skills
	Alexander Skill Rating Form for Parents	Visual analysis	Visual comparison of numbers

Visual inspection was used to analyze the data gathered on the Observation Skill Rating Form. The researchers calculated the total number of social skill attempts recorded for each skill (eye contact, turn taking, contributing relevant information). The data for each social skill was then sorted into three separate skill levels; (a) functional and

proper use of the skill; (b) beginning or emerging skill level; and (c) no attempt at skill.

The researchers were focused on the change of skill level and not in the change of skill attempts. Therefore, the following formula was used to calculate the percentage of

correct skill attempts: $\% \text{ correct skill} = \frac{\text{number of correct attempts}}{\text{total number of attempts}} \times 100$. This formula

was also used to determine the percentage of developing skill attempts and skill attempts that did not occur.

These percentages were then graphed. In order to evaluate the effectiveness of the intervention, the mean percentage of skill attempts from each phase (baseline, post-classroom, and post-soccer) was calculated, graphed, and visually analyzed. The change in mean percentage of skill attempts from baseline to post-soccer was also calculated. The Alexander Adaptation of Skill Rating Form for parents was analyzed using visual comparison. To determine if the participant had generalized the skill to another setting, the participant's mean for skill attempts that occurred during the baseline of the program was compared to the mean of skill attempts that occurred during post-soccer. The participant's post-soccer score was also compared to the score given during the retention phase to determine if the participant had retained the social skills.

When analyzing the Observation Skill Rating Form, a 5% change in the mean of skill attempts from one time period to another was considered clinically significant. For the Parent Skill Rating Form, a change of one level was considered clinically significant. The data gathered on the Observation Skill Rating Form and the Parent Skill Rating Form was also compared to the interview data.

The Alexander Adaptation of Skill Rating Form For Parents was analyzed using visual analysis. In order to determine if the participant had generalized the skill to another setting, the participant's score during the baseline of the program was compared to the score that was reported post-soccer. The participant's post-soccer score was also compared to the score given during the retention phase to determine if the participant had retained the social skills.

Personnel

Student Investigator

The Student Investigator, (Melissa Alexander, MS) was responsible for planning S³, implementing S³, overseeing all personnel related to S³, and disseminating the results from S³. She recruited participants to the study, conducted the qualification interviews, and administered the consent/assent process. She also conducted the retention interview with the families. During the program, Mrs. Alexander administered the classroom portion of S³ as well as the parent supplemental portion of S³. Lastly, I was responsible for the data analyses dissemination of results.

Through my experiences in academics, research, teaching, and practical experiences Mrs. Alexander have developed the skills necessary to complete this project. For a detailed explanation of her experiences please refer to her Curriculum Vitae.

Academics. Mrs. Alexander has a BA in psychology, a BS in Health and Sport Studies, a coaching minor, and a MS in Sport Psychology. She has completed courses in qualitative and quantitative research methods, as well as classes in research methodology and research ethics. In the process of attaining my PhD with a focus in adapted physical activity, Mrs. Alexander has completed numerous classes related to different aspects of disabilities and physical activity.

Research She has previously conducted research studies, including a thesis on how collegiate participants cope with pain. In research designed to teach life skills (such as coping skills and making friends) to teenagers with physical disabilities, Mrs. Alexander co-wrote the intervention, and assisted with the delivery the intervention, staff training, data collection, data analysis and dissemination of results.

Teaching She has held a variety of teaching roles including teaching art for a summer day camp, teaching pre-schoolers ages 1 -4, and instructing physical activity and academic classes at Michigan State University.

Practical Experiences As a certified Special Olympics coach in both aquatics and football (soccer), Mrs. Alexander has coached swimming for four years and has coached a Special Olympics soccer team for the last year. She have served as the head coach for the MSU Special Olympics swim team at both the local and state level. Mrs. Alexander has also conducted and assisted coaches certification courses for Special Olympics. At festivals geared towards disability sports, she has taught sport skills to people with a variety of different disabilities. Working for the Associate Provost for Undergraduate Education, she has organized conferences held on campus, administered computerized tests, and analyzed data that was gathered across the campus. She has also managed teams of undergraduate workers in a variety of different settings.

Faculty Advisor

Dr. Gail Dummer, Ph.D., was the faculty advisor and dissertation director for this research project. Her responsibilities to the Department of Kinesiology included teaching graduate and undergraduate courses, and serving as director of the Sports Skills Program

in which kinesiology students learn to teach and coach persons with disabilities. She was internationally recognized for her expertise in curriculum and instruction, inclusion, and disability sports. Her curriculum vita includes over 120 publications, 100 presentations, and 40 funded projects. Dr. Dummer has mentored several graduate students in externally funded research, and also contributed her expertise in research methods, statistics, and responsible conduct of research to this project.

Germane to this project, Dr. Dummer has made extensive contributions to the Special Olympics program. She is a certified Special Olympics aquatics coach. In addition to educating university students to coach a variety of Special Olympics sports, Dr. Dummer conducts an annual aquatics coach education/certification clinic for Special Olympics-Michigan, and serves as meet director for the annual Area 8 swimming competition. She regularly coaches Sports Skills Program swimmers at the Michigan Special Olympics Summer Games, served as head swimming coach for the Michigan delegation at the 2006 USA National Special Olympics Games, and will participate as an assistant swimming coach for the USA team at the 2007 World Special Olympics Games in Shanghai, China. Please refer to an abridged version of Dr. Dummer's curriculum vita.

Dissertation Committee

Melissa Alexander's dissertation committee consisted of four faculty members, namely Dr. Gail Dummer (see above information), Dr. Esther Onaga, Dr. Karin Pfeiffer, and Dr. Daniel Gould. Dr. Esther Onaga is a professor in the Department of Family and Child Ecology. Her role in this project was to provide advice on involving family and community in the intervention. Through her own research and the experiences she has had with her son who has autism, she has become very knowledgeable about disability

accommodations, interventions and social skills training. Dr. Karin Pfeiffer has a degree in both sport psychology and exercise physiology. She currently is an assistant professor in the Department of Kinesiology. Dr. Pfeiffer has developed considerable expertise in designing and conducting interventions associated with her research on physical activity programs for children and youth. She contributed her expertise on interventions and research methodology to this project. Dr. Dan Gould is a professor in the department of Kinesiology the Director of the Institute for the Study of Youth Sports at Michigan State University. He contributed his expertise in sport psychology and youth sport to the design of the intervention.

Other Personnel

MSU is an equal opportunity employer. Therefore, individuals with and without disabilities were hired for this research study. A description of the personnel's qualifications and responsibilities can be found in Table 5.

Table 5
Qualifications and Responsibilities for Other Personnel

Personnel	Qualifications	Responsibilities
1 Assistant Instructor	First Aid and CPR certified Knowledge of people with disabilities and appropriate pedagogical techniques	Assisted student investigator with all Pretest, Introduction, Classroom, Soccer, and Party Phases (teaching, classroom set-up, etc.) Assisted with the review of communication skills to participants before and after physical activity during soccer phase Kept daily journal
2 Soccer Coaches	First Aid and CPR certified Completed adapted physical activity course at MSU Completed Special Olympics orientation program Knowledge about soccer and coaching	Assisted with Introduction, Classroom, and Party Phases Taught soccer skills Encouraged use of social skills during soccer practice Provided feedback to participants during soccer Kept daily journal
2 Observers	Knowledge about disability and disability sport Knowledge about social skills	Recorded social skills of participants during soccer using the Observers Skill Rating Form
1 Interviewer	Interviewing skills Knowledge about disability sport	Conducted all interviews with parents Administered Alexander Adaptation of Skill Rating Form for Parents
4 Partners	General soccer knowledge Good people skills	Interacted with Special Olympics athletes during all phases Encouraged and helped direct social skills during soccer portion of program Kept daily journal

Resources

Michigan State University (MSU). MSU has over 45,000 students enrolled in more than 200 undergraduate and graduate programs of study; making among the 10 largest universities in the United States. It has exceptional library and computer facilities, providing faculty and students with access to electronic mail, internet information, data analysis software, database systems, data backup servers, and research literature including newspapers, magazines, books, and journals.. The MSU Contract and Grants office assisted with the distribution of funds and compliance with financial policies. Amy Rivard, a staff member in the Department of Kinesiology, maintained financial records and budget records.

Special Olympics Area 8 (Michigan). Area 8 consists of two Michigan counties (Ingham and Eaton). There are currently 1,473 athletes registered in Area 8. Thus there is an ample number of prospective participants for this research.

Facilities and Equipment. Facility needs include a classroom and nearby indoor soccer gymnasium. Indoor facilities were needed because of Michigan's winter climate. Likely facilities include a child development center on the MSU campus or a local community center. Table 8 provides a list of the equipment needed to complete this project. All equipment purchased with grant funds was donated to Michigan Area 8 Special Olympics at the completion of the study.

Table 6
Available and Needed Equipment

Function	Available from MSU	Need to Purchase from Grant Funds
Classroom	Projector Screen	Paper Pens 3-ring binders Photocopies of Intervention Classroom facility
Soccer	Soccer goals and nets	Gym Soccer balls Ball bag Pinnies Cones Dry erase board (to display daily schedule) T-shirts (to develop team bond) First-aid kits
Data Collection	2 digital tape recorders Private office with locking file cabinets Computers for data storage Data transcription software Foot pedal for data transcription	Storage media Paper Pens
Party		Facility Food and drink Certificates for participants

Budget

Table 7
Proposed Budget for S³

Line Item and Justification	Cost
Personnel	
1 head coach/student worker (36 hrs intervention [45 min x 9 sessions and 70 min. times 19 sessions] plus 2 hrs training @ \$8 per hr)	304.00
1 assistant instructor/student worker (6 hrs classroom intervention and 2 hrs training @ \$8 per hr)	64.00
1 assistant coach/student worker (36 hrs intervention [45 min x 9 sessions and 70 min. times 19 sessions] and 2 hrs training @ \$8 per hr)	304.00
2 observers/student workers (15 hrs observation [90 min. x 10 sessions] and 2 hrs training @ \$8 per hour)	272.00
1 Interviewer/student worker (20 hrs interviewing and transcribing and 2 hrs training @ \$8 per hour)	176.00
3 partners to receive a gift card to the local mall (3 gift cards @ \$100 each)	300.00
Total	1420.00
Photocopies	
Instrumentation (approximately 19 pages per participant with 8 participants @ \$0.05 per page)	7.60
Advertisement Flyer (200 copies @ \$0.05 per page)	10.00
Consent Letter (6 pages per letter with 2 copies per 8 families @ \$0.05 per page)	4.80
Handouts for classroom session (approximately 24 pages per participant with 8 participants @ \$0.05 per page)	9.60
Parent copy of classroom material and home program (approximately 30 pages per parent with 8 parents @ \$0.05 per page)	12.00
Total	44.00
Office Supplies	
Storage media (CD), file folders, paper, writing utensils, flash drives, etc.	100.00
T-Shirts	
15 shirts (1 coach, 1 assistant coach, 1 student investigator, 8 participants, and 4 partners) @ \$10 a shirt	150.00

Table 7 Continued
Proposed Budget for S³

Sport Equipment (all donated to Area 8 Special Olympics at completion of project)

8 soccer balls @ \$8.50 each plus 6% sales tax (additional balls will be borrowed from Michigan State University and the Michigan Chill Soccer club)	72.08
1 ball bag @ \$6.99 plus tax	7.41
1 dry erase board to post daily schedules @ \$15 plus tax	15.90
15 pinnies @ 5.50 each plus tax	87.45
20 cones @ \$0.99 each plus tax	20.98
4 latex free first aid kits @ \$25 each plus tax	106.00
Total	309.82

Intervention Supplies

8 three-ring binders to hold the participants' classroom material @ \$5.94 each plus 6% sales tax	50.37
8 three-ring binders to hold the parents' activities program @ \$5.94 each plus tax	50.37
9 three ring-binder to hold staff training manuals and safety information @ 5.94 each plus tax	56.67
Certificate to give to the participants at the End of the Program Party @ \$14 a package plus tax	14.84
Total	172.25

Conference to Disseminate Results

Registration fee for the student investigator at the North American Federation for Adapted Physical Activity	125.00
4 nights stay at a hotel in Indianapolis @ \$50 a night (cost of room to be shared with colleague)	200.00
Total	325.00

Facility Rental

Location to be determined. At this time a price will be negotiated	975.00
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Total Budget	\$3,496.07
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CHAPTER 2: LITERATURE REVIEW

Social skills are essential for the many interactions that occur through out one's life time. They affect an individual at school, work, home, and in the community. Unfortunately, many people with mental retardation (MR) or a pervasive developmental disorder (PDD) struggle tremendously with the development of basic social skills. A young man with autism once described his difficulties with social skills as "getting off of a plane in a foreign country without knowing the language, cultural gestures or cultural norms" (Coyne & Fullerton, 2004, p.19). While people with MR or PDD may have difficulties developing the skills, many of them recognize the importance of the skills and desire social interactions. Adults with MR have reported that they feel social skills are essential for success in community living (Lovett & Harris, 1987b). And despite public misconceptions, individuals with autism spectrum disorder (ASD) want to build social relationships and enjoy contact with their peers (Mesibov, 1984).

The following review of literature will: (a) discuss the social difficulties experienced by people with intellectual disabilities; (b) analyze the consequences of social skills deficiencies; (c) introduce a conceptual model that describes the necessary components for the development, maintenance, and generalization of social skills; and (d) discuss past research that supports the conceptual model. For definitions of mental retardation, pervasive developmental disabilities, and other terminology presented in this research study please refer to Appendix M.

Social Skills Deficiencies of People with Intellectual Disabilities

There is no universally accepted definition for the term social skills (Bielecki & Swender, 2004). However, the term generally refers to “a complex set of skills that include communication, problem-solving and decision making, assertion, peer and group interaction, and self-management” (Kolby & Hanley-Maxwell, 2003, p.163). Social skills are learned behaviors that an individual must observe and/or be taught in a variety of different environments (Bielecki & Swender, 2004). Without these skills, people cannot initiate and maintain positive relationships with a variety of people including family members, teachers, co-workers, peers, and people in the community (Quinn, Jannasch-Pennel, & Rutherford, 1995). These skills also promote independence, increase social acceptability, and increase quality of life for the individual (Bellack, 1983).

By definition, people with mental retardation or a pervasive developmental disorder struggle with appropriate social skills. Countless studies have documented the social skills difficulties experienced by individuals with intellectual disabilities (e.g., Coie, 1985; Gresham, 1981; Gresham & Elliott, 1989). The cause of these social deficiencies is diverse and it affects all domains of life.

Mental Retardation

People with mental retardation (MR) have been found to have difficulties with social skills starting as infants. When compared to typically developing children, babies with MR tend to initiate fewer social interactions and respond less to social invitations from others (Guralnik & Groom, 1987; Koop, Baker, & Brown, 1992). The age at which they speak their first words also tends to be delayed (Berglund, 2001). Once they do start

speaking, their development of expressive language skills continues to develop very slowly compared to typically developing children (Fabbretti, Pizzuto, Vicari, & Volterr, 1997).

Individuals with MR tend to have difficulties developing many social skills that are needed for successful interactions with others. Many of the skills that they have difficulties developing, such as joking, talking about the same subject, and asking about an individual's personal life are essential for initiating friendships and creating social networks (Chadsey-Rusch, 1990; Chadsey-Rusch & Gonzales, 1988; Williams, Walker, Holmes, Todis, & Fabre, 1989). When eleven parents of adolescents with MR were interviewed, they reported that their children lacked the skills needed to initiate and maintain friendships. The parents said their children needed to be specifically taught: (a) how to discern the motives of others, (b) how to perform general communication skills, (c) how to demonstrate empathy, and (d) how to interpret general social cues (Kolb & Hanley-Maxwell, 2003).

People with MR particularly struggle with the ability to understand a social situation from someone else's perspective. They tend to have a difficult time interpreting other people's feelings and realizing what those feelings may represent in the social environment (Bradley & Meredith, 1991; Moffatt, Hanley-Maxwell, & Donnellan, 1995). Individuals with MR may have difficulties taking another person's perspective because they have difficulties interpreting more complex emotions. In general, individuals with MR can decipher more simplistic emotions such as happy and sad; however, they have difficulties when it comes to emotions such as frustration or anxiety (Wilczenski, 1991). A typically developing child can usually reliably identify emotions portrayed by facial

expressions by the time they are two years of age (Cohn et al., 1990, Huebner & Izard, 1988). However, researchers have suggested that compared to people without a disability, even in adulthood individuals with MR have a much harder time recognizing emotions from facial expressions (Mauer & Newbrough, 1987, Rojahn, Rabold, & Schneider, 1995). Rojahan, Rabold, and Schneider (1995) compared people with MR to a group that was matched based on chronological age and a group that matched based on maturation age to determine if slow development was the cause for the individual's inability to recognize emotions through facial expressions. When compared to both groups, people with MR demonstrated a significantly lower level of ability to recognize emotions. The amount of experience people with MR had observing emotions in others did not improve their ability to interpret emotions correctly.

People with mental retardation may also demonstrate a social skill in a socially unacceptable manner. For example, they may demonstrate a social skill in excess, such as hugging a stranger and not letting go (Duncan, Matson, Bamburg, Cherry, & Buckley, 1999). They may also demonstrate the appropriate social skill, but the skill is undeveloped. For example, while attempting to make eye contact in a conversation they may open their eyes too wide and appear as though they are staring. These undeveloped skills often lead to peer ridicule and further isolation.

Pervasive Developmental Disabilities

Because persons with autism and Asperger's syndrome share some of the same underlying characteristics, professionals often have a difficult time diagnosing the difference between high functioning autism and Asperger's syndrome. Unlike MR, the medical community has not been able to identify a biological marker or a causation that

can differentiate between autism and Asperger's syndrome (Reed & Collier, 2002). To compound the issue, when working with people with different PDDs, the same pedagogical principles are used to teach and accommodate their needs (Wing, 1997). This has lead to debates about if there is really a need for the different subtypes and if we are truly able to identify between high functioning autism and Aspergers. Some researchers (Schopler, 1998; Volkmar & Kim, 2001; Wing, 1997) have even suggested that there is no difference between the two groups. Because of the difficulties associated with differentiating between autism and Asperger's syndrome, many researchers combine both populations for research purposes and refer to the individuals as having autism spectrum disorder (ASD). Unless otherwise specified, in this paper ASD will be used to refer to all individuals with autism or Asperger's syndrome.

Individuals with ASD tend to have difficulties developing all areas of social skills. They not only receive and process information differently than the general public, but they also respond to the information in a unique manner (Coyne & Fullerton, 2004).

One area of development that is particularly problematic for people with ASD is pragmatics (Gerber, 2003). Pragmatics is "the social use of language as is involved in sustaining or initiating a conversation" (Baker, 2003, p.17). It focuses on skills such as making eye contact, using correct tone and volume, having appropriate body language, being able to respond to comments appropriately, and staying on topic in a conversation. Because this is an area of difficulty for people with ASD they tend to "include irrelevant details in conversations, interrupt, shift inappropriately to another topic, and overall fail to develop conversations" (Wicks-Nelson & Israel, 2000, p.325).

Individuals with ASD also have difficulties with social interchanges used in everyday society (Towbin, Mauk, & Batshaw, 2002). For example, in order to sustain a friendship, one must have some rudimentary skills including the ability to be a fun companion, be dependable, assist others when necessary, and express and interchange feelings (Asher, Parker, & Walker, 1998). However, these are all skills that individuals with autism struggle to develop (Kasari, Chamberlain, & Bauminger, 2001; Kasari & Sigman, 1996). As a result many people with ASD have a limited number of friends.

People with ASD often seem to be aloof to other people and to their surroundings. They tend to avoid making eye contact and may treat humans more like objects than living beings. They may also interact with objects in an unusual manner which makes them seem uninterested in their surroundings. In some cases, they may not interact with surrounding objects at all. In other cases, they will interact with an item in a manner that is not age appropriate. If a person tries to interfere with the odd play behavior, the individual with ASD will often experience distress (Kraft, 1983). For example, a kindergarten aged boy may stack cars and trucks into a pile as if they were blocks. However, when given blocks, he pushes them around on the floor as if they were cars or ignores the blocks all together. When a peer picks up one of the blocks, the boy starts screaming, and kicks the blocks around the room while flapping his hands.

The largest social difficulty, particularly for people with higher functioning ASD, is related to social-emotional understanding . The social difficulty is not because of social insensitivity or social disinterest (Bacon, Fein, Morris, Waterhouse, & Allen, 1998; Sigman & Ruskin, 1999). In other words, it is not that the people with ASD don't want to be social; they just have an extremely difficult time interpreting the social interactions of

others. However, according to Chalop and Walsh (1986), the standoffish appearance demonstrated by people with ASD makes others think that they are uninterested in social interaction. As a result parents, peers, and teachers are discouraged from attempting to make social contact with the individual, which in turn results in fewer opportunities to develop new social skills.

Individuals with ASD also have difficulties developing the language skills that are necessary for social interactions (Liber, Frea, & Symon, 2008). Initiating speech or generalizing spontaneous speech in a variety of different contexts, including environments and people, is an area in which people with ASD struggle (Charlop & Trasowech, 1991). They also tend to have difficulties integrating verbal and nonverbal components of communication (Towbin, Mauk, & Batshaw, 2002).

Unfortunately, some of the gestures and responses of individuals with ASD further increases their level of social rejection. Many of the stereotypical behaviors associated with ASD, such as hand wringing, self-stimulatory behaviors, and echolalia make social interactions and communication difficult (Towbin, Mauk, & Batshaw, 2002). All of these behaviors lead peers to perceive persons with ASD as odd or unapproachable. Another issue is people with ASD often have difficulties expressing their opinions in a socially acceptable manner. People with ASD are often in situations where they feel uncertain because they do not know what they are supposed to do, what they should expect others to do, or how to react to the behaviors of others (Coyne & Fullerton, 2004). Their uncertainty and inability to express themselves appropriately to others often results in inappropriate or aggressive verbalizations towards peers (McGee,

Krantz, & McClannahan, 1984). For this reason peers reject and sometimes even fear people with ASD.

Cause of Social Skill Deficiencies

There are a variety of different variables that cause a deficiency in social skills. First and foremost, the general nature of people's disabilities may inhibit their social skills development. For example, due to slow development, people with MR may continue to demonstrate some childhood behaviors longer than is seen in typically developing children. By the time people with Down syndrome (DS) reach early childhood, they tend to score two standard deviations below typically developing children on a cognitive development test (Hauser-Cram, Warfield, Shonkoff, Krauss, Upshur, & Sayer, 1999). As a result, concepts such as sharing and turn taking may occur later than is expected for typically developing children. Without these general skills, social interactions with typically developing peers can be strained. People with MR also tend to enjoy playing games with people who are much younger than themselves, resulting in a lack of modeling from age appropriate peers (Thomas, 1996). Because of the odd play behaviors sometimes demonstrated by people with ASD, they often have difficulties interacting with others.

Other reasons for a lack of social skills could be (a) a lack of general knowledge regarding appropriate social skills, (b) insufficient or ineffective feedback about the social skills they demonstrate, (c) a problem perceiving social cues, (d) an absence of appropriate social cues in the environment, (e) problem behaviors which interfere with social interactions such as self stimulating behaviors or attention difficulties, (f) an inability to recognize the goals of social interactions, and (g) differing opinions on the

goal of social interactions (Coie & Koepl, 1990; Elliott & Gresham, 1993; Ladd & Mize, 1983; Oden & Asher, 1977; Renshaw & Asher, 1983).

A lack of practice with other individuals who demonstrate appropriate social skills may also cause a deficiency in social skill. In school, many children with intellectual disabilities are segregated into special education classrooms where they have limited interactions with peers who do not have disabilities (Huang & Cuvo, 1997). In the work setting, people who had MR were much more likely to interact with other people who also had MR and not with people who were considered typically developed (Huang and Cuvo, 1997). Both of these situations often result in a lack of positive modeling of the desired behaviors from other peers.

Decreased social skills could be from the person feeling frustrated and discouraged. Because of the improper use of social skills, individuals with ID frequently receive negative feedback (e.g., taunting or ridicule) from their peers. As a result, the individual may not try to interact with others or develop meaningful relationships for fear of further rejection. Instead they develop avoidance behaviors that lead to an increased levels of isolation (Gresham, 1986; Kirby, 2002).

Implications of Social Skill Deficiencies

Social skills are often referred to as an essential component for life adjustment (Epstein & Cullinan, 1987; Neel, 1988). Woods and Wetherby (2003) stated that “communication competence may be the primary factor determining the extent to which individuals with ASD develop relationships with others and participate in daily activities and routines at school, at home, and in the community” (p.180). Without social skills, people cannot communicate their needs, establish appropriate relationships with others, and

communicate their thoughts. They are at risk of being rejected, experiencing increased difficulties in school, suffering mental health problems, and being under or unemployed during their adult years (Elksnin & Elksnin, 1995, 1998, 2001).

Many individuals with ID experience difficulties related to social acceptance from their peers (Elliott, 1988; Walker, Irvin, Noell, & Singer, 1992; Korinek & Polloway, 1993). Individuals with mental retardation are more likely to be rejected or neglected by their peers, especially in the school setting (Chamberlain, Kasari, & Rotherma-Fuller, 2007; Polloway, Epstein, Patton, Cullinan, & Luebke, 1986). When compared to their classmates who do not have disabilities, they tend to have significantly fewer friends. The relationships that are established tend to be less stable and sustained over a shorter duration of time (Bauminger & Kasari, 2000; Soresi & Nota, 2000; Zetlin & Murtaugh, 1988). Non-disabled peers often reject people with mental retardation not because of their academic incompetence, but because of the inappropriate behaviors they demonstrate when in a social situation (Gottlieb, Semmel, & Veldman, 1978).

People with ID may also have a skewed perception of their friendships. When 398 children from inclusive classrooms were asked to list their top three friends and their best friend, the 17 individuals with ASD had fewer reciprocal nominations than students without ASD. Therefore, while individuals with ASD may have perceived a student without a disability to be their best friend, the feelings were not mutual. The children without disabilities also reported that the relationships they had with the students with ASD were qualitatively different than those that they had with their typically developing peers” (Chamberlain, Kasari & Rotheram-Fuller, 2007).

Difficulties with social skills have been cited as one of the primary reasons students are unsuccessful in their transitions from school to employment and independent living (Chadsey-Rusch, Rusch, & O'Reilly, 1991; Edgar, 1987; 1988). Strain and Odom (1986) reported that a deficiency in social skills during an individual's childhood was the best single predictor of significant problems with adjustment during the person's adult life. There are also many studies that have identified a positive correlation between social/interpersonal skills and work adjustment/tenure (Auty, Goodman, & Foss, 1987; Brickey, Campbell, & Browning, 1985; Foss & Bostwich, 1981; Greenan, 1983; Greenspan & Shoultz, 1981; Hill, Hill, Wehman, & Goodall, 1985; Salzber, Likins, McConaughy, Lignugaris, Kraft, & Stowitschek, 1986).

Social skills are especially important when entering the workforce to help overcome some of the negative perceptions that may be held by supervisors or other coworkers. Due to many of the negative stereotypes held in society about people with ID, coworkers tend to create a negative work environment for people with ID before they are given a chance to develop positive relationships. Examples of these stereotypes include the belief that people with ID cannot perform basic tasks without constant supervision or people with ID cannot interact with customers appropriately. Appropriate social skills help to combat stereotypes and lead to a more successful employment experience (Gaylord-Ross et al, 1986).

The social skills needed to participate in more active and socially inclusive activities are often not present in individuals with ID (Schleien & Ray, 1997). Therefore, many individuals with disabilities who lack social skills are not welcome to participate in integrated school and community leisure programs (Schleien & Ray, 1988). For

example, McGee, Krantz, & McClannahan (1984) found that people with autism are limited in opportunities to participate in recreation activities due to their lack of assertiveness skills. Their inability to interact socially and express themselves assertively has led to aggressive verbalization and actions. Especially when specific social skills are needed for the specific activity such as sharing the ball in a team sport, social skills training is needed to teach the context specific skills (Schleien, Green, & Heyne, 1993).

Without social skills training, adults with mental retardation tend to become increasingly isolated from normal adult activities and participate in activities alone within their home. Furthermore, leisure activities tended to be very sedentary such as watching television or doing arts and crafts (Johnson, McGrew, Bloomberg, Bruininks, & Lin, 1996; O'Reilly, Lancioni, & Kierans, 2000; Schleien, Meyer, Heyne, & Brandt, 1995; Thurlow, Bruininks, & Lange, 1989). However the individual's quality of life can be significantly improved when provided the skills to share interests and activities with others, and access resources available in the community such as recreation programs (Rusch, Chadsy-Rusch, & Johnson, 1991).

Parents and significant others of people with ID have called for social skills training programs because they recognize the social skills deficiencies (Sheridan et al., 1996). When significant others of adults with MR were interviewed, they reported the skills most needed to be successful in community living were vocational, social, and personal skills (Lovett & Harris, 1987a). In the school setting, many individual education plans (IEP) focus on the need for appropriate social skills (Epstein, Polloway, Patton, & Foley, 1989). In fact, IEP goals for students with disabilities are most frequently related to language, speech and communication.

These goals make up around 25% of all IEP objectives for people with disabilities in the school setting (Campbell, Stremel-Campbell, & Rogers-Warren, 1985).

Conceptual Model for the Development of Social Skills

The researcher was not able to find a theoretical model that addresses the development, maintenance, and generalization of social skills by persons with ID. Therefore, she developed a conceptual model called the Alexander Model for the Development, Maintenance, and Generalization of Social Skills (Figure 4).

Alexander's Model

In order for people with ID to develop, maintain, and generalize social skills, they must be provided with direct instruction and effective practice. Participants must receive direct instruction that includes: (a) functional skill curriculum, (b) effective pedagogy, (c) qualified teachers, and (d) appropriate instructional settings. Concurrent with direct instruction, participants must participate in effective practice that consists of: (a) appropriate activity; (b) multiple, natural settings; (c) adequate practice opportunities; (d) multiple, skilled instructors; and (e) family involvement and support. The combination of direct instruction and effective practice will lead to the development and generalization of social skills. While both direct instruction and effective practice are essential for skill development, direct instruction has an effect on effective practice. Basic knowledge of the skill, including what the appropriate social skill is and how to demonstrate it is needed before one can practice the skill. Though direct instruction has some impact on the maintenance of people's social skills, the primary factor that is needed to maintain social skills is effective practice.

While the Alexander model is an original model, other theoretical positions were influential in its creation. The work of Bronfenbrenner (1979a, 1979b), Bandura (1969, 1977, 1986), and Sargent (1998) were all influential in the development of the Alexander model.

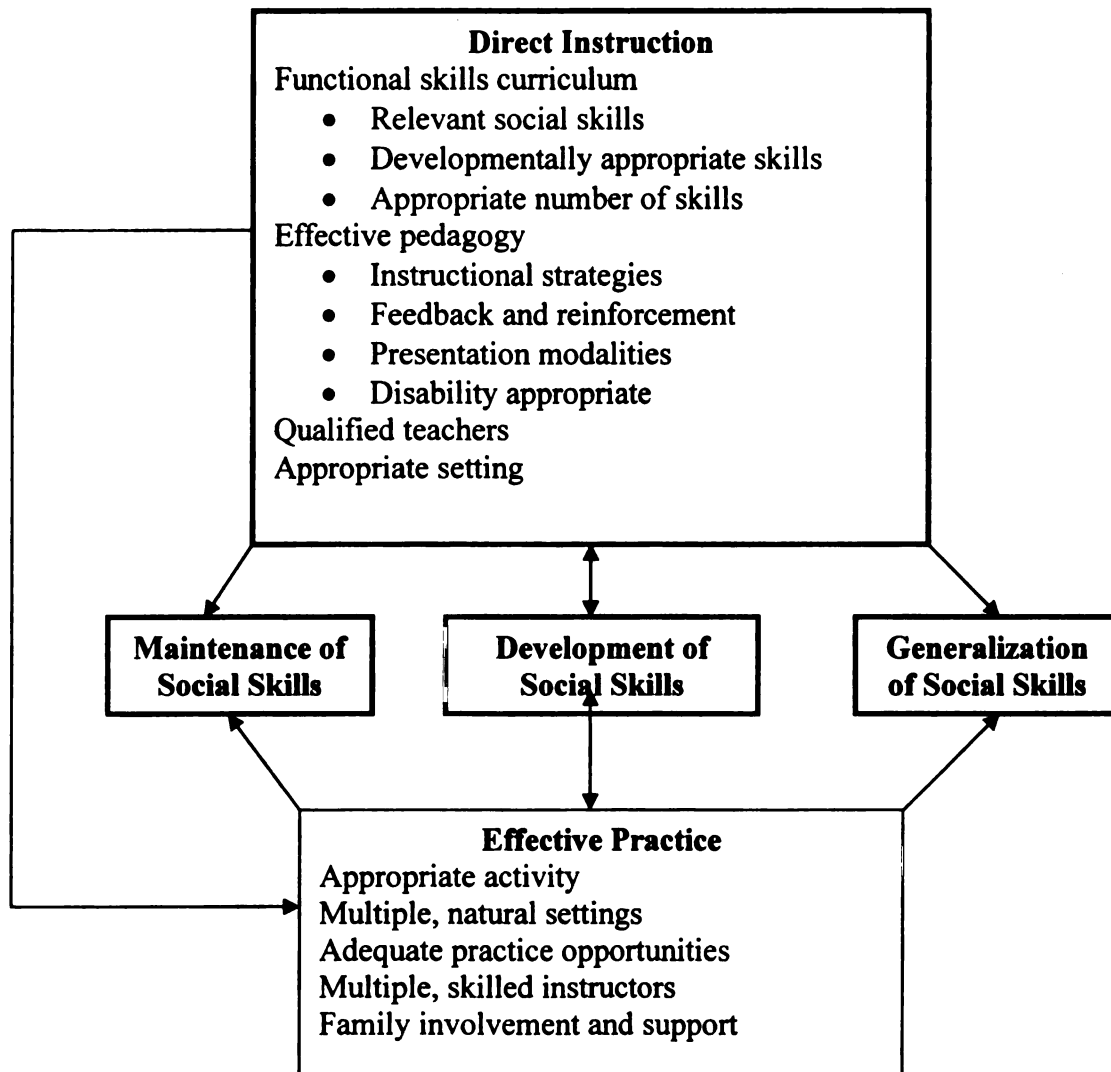


Figure 4.
 Alexander model of the development, maintenance, and generalization of social skills

Bronfenbrenner's Properties of Human Development and Model

In 1979, Bronfenbrenner stated that there are “four properties of ecological environment that foster processes of human development” (p. 845). These four propositions were created from extensive research conducted by Bronfenbrenner (1979b) as well as other

researchers and educators. They have become the basis for much of the human ecology literature as well as research.

Bronfenbrenner's first two propositions are necessary conditions that must be present for development to occur. Proposition 1 states that,

“...A primary developmental context is one in which the child can observe and engage in ongoing patterns of progressively more complex activity jointly with or under the direct guidance of persons who possess knowledge and skill not yet acquired by the child and with whom the child has developed a positive emotional relationship.” (Bronfenbrenner, 1979b, p.845).

In summary, children must be provided with a safe environment that they trust in order for skill development to occur. Within this environment children must receive direct instruction, observe modeling of the appropriate behavior, and be given an opportunity to practice the skill further. The situation must be adaptable to allow for more complex activities as children continues to develop. Proposition 2 states,

“...A secondary developmental context in one in which the child is given opportunity, resources, and encouragement to engage in the activities he or she has learned primary developmental contexts, but now without the active involvement or direct guidance of another person possessing knowledge and skill beyond the levels acquired by the child.” (Bronfenbrenner, 1979b, p. 845).

The second proposition is referring to an environment that facilitates practice of the newly developed skills. During the practice time, children should not receive direct instruction

or feedback on their skill performance. However children should be provided with the needed resources and encouragement to create a positive experience.

The first two propositions are codependent. People cannot practice skills as suggested in Proposition 2 without having learned the skills as is stated in Proposition 1. However, without the ability to practice newly acquired skills in an environment that fosters development, the skills will not mature. While Propositions 1 and 2 cannot occur at the same time, they can occur in the same context or in two different contexts such as school and home.

Proposition 3 establishes the effect that a third party has on the learning environment. It states “the developmental potential of a setting depends on the extent to which third parties present in the setting support or undermine the activities of those actually engaged in interaction with the child.” (Bronfenbrenner, 1979b, p.847). In this situation, third parties refers to people with whom children interact, including grandparents, aunts, uncles, cousins, friends, teachers, and neighbors. Therefore Bronfenbrenner is focusing on the impact that other people have on the development of children.

The last proposition establishes the connection between the potential of the environment and the other contexts in which a child is reared. It states

“the developmental potential of a child-rearing setting is increased as a function of the number of supportive links between that setting and other contexts involving the child or persons responsible for his or her care. Such interconnections may take the form of shared activities, two-way communication, and information provided in each setting about the others” (Bronfenbrenner, 1979, p.848).

Proposition 4 is not only focused on the environments potential but also the link between the environment and the other 3 propositions.

In 1979a, Bronfenbrenner introduced the Ecological Systems Theory (Figure 2). Just like his propositions, this model revolves around the theory that children are directly and indirectly influenced by a variety of different systems found in society. The model suggests that children are affected by four different levels. There is the

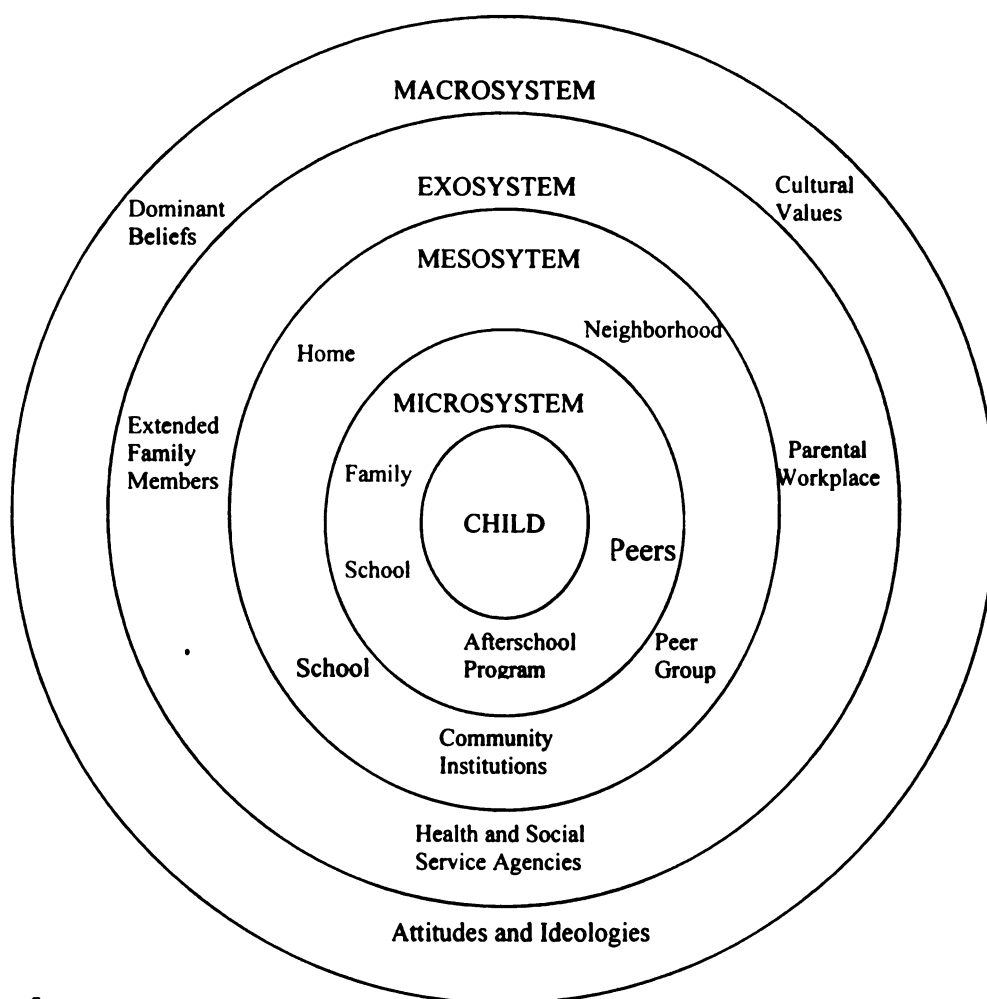


Figure 5.
Ecological system theory (Bronfenbrenner, 1979)

microsystem, the mesosystem, the exosystem, and the macrosystem. The model itself looks like a dart board. The circle in the very middle, or the bull's eye, represents the

child. The ring closest to the bull's eye represents the microsystem, followed by the next ring which represents the mesosystem, etc. The outer most ring of the dartboard represents the macrosystem.

The levels of the model are interrelated. Therefore, each system affects the other directly or indirectly. The child is placed within the middle of this model in order to represent how the child is encompassed by the subsystems and is therefore always affected by all of the ecological levels. Bronfenbrenner also suggests that the influence is by no means unidirectional. The macrosystem can indirectly affect a child just like a child can indirectly affect a macrosystem.

The microsystem consists of variables that come directly in contact with the child and have a direct influence on the child. Some of these variables are family, school, afterschool programs, daycare, and peers. It is through interactions with these variables that the child learns social skills, develops academic skills, is nurtured, and receives other areas of information needed to succeed and survive in life.

The mesosystem contains settings in which the microsystem's interactions take place. It consists of locations such as the home, school, community institutions, peer groups, and the neighborhood. The interactions that occur within the microsystem to create the macrosystem can be between two individuals or they can be between actual microsystem components. An example of how two individuals within the microsystem create an interaction that is represented by the mesosystem occurs when a mother and a father make a decision about whether or not to send their 3 year old child with a disability to a public child care facility or a specialized child care facility. The interaction between

the parents (microsystem) creates an impact on the chosen school (mesosystem). The chosen school and teachers within the school then influence the child.

The third level of the model, the exosystem, consists of structures that do not affect the child directly, but instead affect people and environments in the child's microsystem. Some of the different structures found in the exosystem are the parental workplace, extended family members, and health and social service agencies. While these variables do not come in direct contact with the child, they influence people who do have direct contact with the child which results in an influence on the child. For example, a parent's work schedule may not directly affect the child. However, if the mother is the primary caregiver of the child and a sudden change in her work schedule results in her working evenings, the child may have limited interactions with the mother. The change in the work schedule will mean that someone else will become the primary caregiver and the child will be influenced by someone other than the mother.

The last ring in the model, called the macrosystem, consists of factors that are not as tangible as the other layers. The macrosystem consists of dominant beliefs, attitudes and ideologies, and cultural values. It revolves around what society believes in and what society supports. For example, if society is supportive of incorporating people with disabilities into the community (macrosystem), a person with a disability is much more likely to be welcomed into a community sports program (mesosystem)

Sargent's Conceptual Framework of Social Competence

Another influential model was Sargent's (1998) Conceptual Framework of Social Competence (Figure 3). Sargent believes that social competence consists of countless variables that are continuously interacting and overlapping. He created the conceptual

framework to assist in understanding problems associated with social development. In this model one starts with inputs, moves to the processes level, and then concludes with the outcomes.

Sargent defined cultural determinants as “values and social standards by which individuals live” (1998, p.3). These variables vary according to the individual’s context. Factors such as community size, ethnic diversity, religious preferences, geographical location, and traditions all contribute to what is considered socially acceptable behavior. When people go against the cultural determinants, they are often rejected by the community. Therefore, it is essential that one have a strong understanding of cultural boundaries.

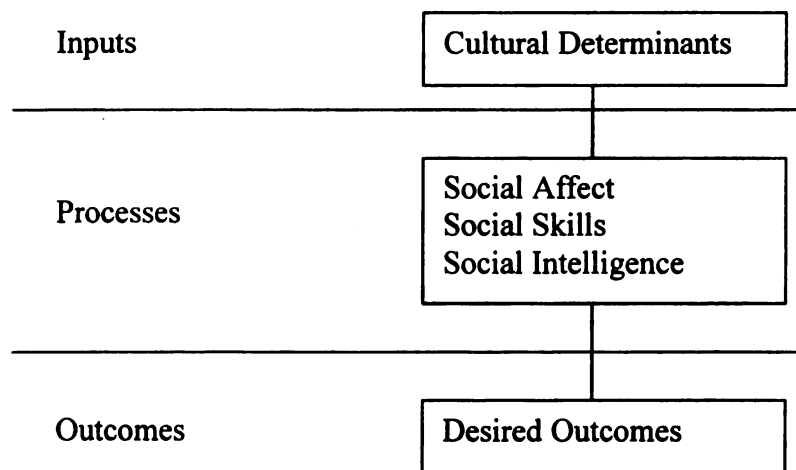


Figure 6.
Sargent’s conceptual framework of social competence

After cultural determinants have been identified, the three process components of the model must be addressed. Social affect, social skills, and social cognition “warrant attention from professional educators; failure to address all areas represents only a partial attempt to achieve the desired outcomes” (Sargent, 1998, p.4). Social affect is how the person appears to others in society. It refers to how society interprets people based upon general persona. Some

of the variables that would fall under social affect are enthusiasm, confidence, independence, personal hygiene, and sense of humor. While affect is important, focus must also be placed on the development of social skills in order for people to be socially competent.

Social skills are defined by Sargent as “the behaviors which represent the most obvious aspect of social competence” (p. 4). There are hundreds of social skills needed for an individual to be socially competent. These skills can fall into four general categories: (a) interaction initiative, such as initiating a conversation) (b) interaction responses, such as responding to criticism; (c) personal social behaviors; such as dealing with frustration, and (d) setting specific skills and behaviors for environments such as school, work, or the community. In order to teach these skills, one can use a variety of techniques such as the ones discussed later in this review of literature. However, no matter what techniques are applied, one must also make sure that social cognition is also being developed.

The term social cognitions refer to an individual’s ability to understand, interpret, and respond appropriately to a variety of social contexts and personal interactions (Greenspan, 1979). According to Sargent, social cognitions are the greatest challenge for people with mental retardation. When a disability is not present, many people develop social cognitions through natural interactions and observations. However, individuals with ID do not tend to develop these skills naturally and often need to receive direct instruction. Fortunately, the direct instruction is often accepted because of the positive outcomes that occur when people demonstrate social competence. Some of the benefits an individual could gain from social competence are self-esteem, social independence, and acceptance in the community and by peers.

Influence of Bronfenbrenner's and Sargent's Conceptual Models

Bronfenbrenner's focus on the interconnections between people, contexts, and the child was very influential in the creation of the Alexander model. Teaching the social skills directly in a structured environment relies on the use of the microsystem. Through the use of the child's microsystem, researchers would in turn affect the actual child. The effective practice seen in the proposed Alexander model takes advantage of the microsystem as well as the mesosystem (e.g., home, neighborhood, community) and exosystem (e.g. extended family, health and social service agencies). The use of the inter-related environments provides a greater likelihood that the child will not only generalize the skills to a variety of environments but will also maintain the skills over a period of time. The application of qualified teachers along with the need for appropriate settings, were also a direct result from Bronfenbrenner's model and his propositions.

Sargent's focus on developing all aspects of personal social skills also influenced the creation of the Alexander model. One area of specific importance was the focus on social affect. According to Sargent, people must be confident that they can perform the social skill effectively. In order to help foster this confidence, the Alexander Model has incorporated the use of positive reinforcement when providing direct instruction. This reinforcement would encourage people to continue demonstrating the skills while also improving self confidence. The increases in self confidence will have a corollary positive influence on social affect. The use of effective practice is meant to increase self confidence as well as skill development. By practicing a skill in a variety of positive, natural environments, people are given the chance to successfully demonstrate the skill. This successful demonstration should in turn lead to an increase in self confidence.

Social cognition from Sargent's model affected the design of both the direct instruction and effective practice components of the Alexander model. In accordance with Sargent's suggestion that instruction is needed to teach social skills, the Alexander model relies on direct instruction. At the same time, in order for people to experience social interactions that would provide a plethora of different social cues, the Alexander model proposes the use of multiple, natural settings. This allows people varied opportunities to practice the social skills for which they have recently received instruction.

Research Supporting Direct Instruction

Component of Alexander Model

The previously discussed models were not the only influential variables in the creation of the *Alexander Model for the Development, Maintenance and Generalization of Social Skills*. The following review of literature will discuss past research and pedagogical principles that influenced and support the creation of the model as well as elaborate on the different subcategories. Each subcategory under direct instruction (e.g., functional skills curriculum) and effective practice (e.g., appropriate activity) will be discussed in further detail.

Functional Skills Curriculum

Relevant social skills. Social skills taught to people with ID must be relevant for daily living in order to improve the individual's social interactions in society. Many of the skill deficits demonstrated by people with ID are issues with pragmatics, such as making eye contact, using correct tone and volume, having appropriate body language, being able to respond to a comment appropriately, and staying on topic in a conversation. As pragmatics usually have a more functional effect on other people (Sailor et al., 1980), educators have started to focus on teaching proper pragmatics instead of focusing on proper syntax (how the

thought is communicated through the use of proper grammar) (Haring, Roger, Lee, Breen, & Gaylord-Ross, 1986). Therefore, instead of focusing on syntax, emphasis should be placed on the development of basic conversation skills that will increase social engagement such as greetings, turn taking, making eye contact, and asking and responding to questions (e.g., Carr & Kologinsky, 1983; Elliott & Gresham, 1993; Lancioni, 1982; Leiffer & Lewis, 1984; Reichle, Rogers, & Barrett, 1984).

The specific social skills taught to people with ID are decided upon by the educator though they should be based on the needs of the participants. Researchers suggest focusing on social skills that are needed to make immediate social interactions and that will enhance the chance of being successfully integrated into the community (Morgan & Jensen, 1988; Polloway & Smith, 1983; Sargent, 1989). The context in which skills will be used should also be taken into consideration (Huang & Cuvo, 1997). For example, after surveying 56 work supervisors, Rusch and Mithaug (1980) devised a list of important social skills necessary for job performance. Some of the skills identified in their study, such as responding to safety signals appropriately, were work specific. However, many other skills identified by Rusch and Mithaug, as well as other researchers including Foss and Peterson (1981), were skills that could be applied in a variety of domains. For example, requesting assistance when needed is not only important at work but can also be used when at a store or a bus stop.

Some researchers argue that therapists and teachers do not place enough emphasis on choosing appropriate skills or defining the criteria that constitute a proper skill demonstration. Teachers or therapists usually choose social skills that they personally believe are the most valuable and needed skills. The teachers or therapists then create a level of performance that they believe is appropriate (Hansen, Watson-Perczel, & Christopher, 1989). However, some

people argue that we should strive to teach skills that have been agreed upon as socially valid behaviors and use universally agreed upon criterion levels to judge skill improvement (Christopher, Nangle, & Hansen, 1993). Social skills would be chosen based on societal desire and preference, giving consideration to the individual's social skills deficiencies. To make a list of skills deficiencies and to define which skills individuals with ID need to be socially successful, researchers have compared individuals who have disabilities to matched peers who were considered typically developed and who demonstrated appropriate skills (Hansen, St. Lawrence, & Chrisoff, 1989; Tisdelle & St. Lawrence, 1988). Researchers have also surveyed teachers and peers on skills that were considered socially desirable (Elder et al, 1979; Plenis et al, 1987). However, there is still little agreement on exactly which skills should be taught in social skills curriculum.

Developmentally appropriate skills. It is essential that participants understand the purpose of the skills being taught (Scruggs & Mastropieri, 1993). If skills are not relevant to the participants, they are unlikely to learn the skill due to lack of motivation. In his social learning theory, Bandura (1986) states that an appropriate level of motivation must be present for people to replicate a behavior that they have observed. Students with MR, like any students, tend to learn better when they are motivated to do so (Baumeister & Brooks, 1981). For example, O'Reilly, Lanson, and Kierans (2000) taught four adults with mental retardation the proper social skills that would be needed for them to visit a local bar on a weekly basis. Obviously these skills would not be appropriate for an adolescent, and the chance of the adolescent being motivated to learn these skills would be very low. However, for the adults in this study, the skills were important and valued. Participants reported "... that the social skills allowed them to be more at ease when they visited the bar" (p. 257) and that

“they were happy to interact with the bar staff and other patrons” (p. 257). Partly due to their motivation to learn the skills, the participants not only developed the appropriate social skills, but maintained the skills 36 months after the completion of the study. When taken to two different bars, they were able to generalize the social skills to the new environments.

Adolescence is an important time to focus on social interactions. In a large meta-analysis of social skills training studies, Schneider and Bryne (1985) found that preschoolers and adolescents benefited more from social skill interventions than students in elementary school. Some researchers have also suggested that as adolescents grow older, they have a significant increase in desire to have positive social interactions (Kanner et al., 1972; Rutter, 1970; Schopler & Mesibov, 1983).

Compared to their childhood, adolescent’s social interactions and relationships with peers become more intricate and adultlike. At the same time, adolescents tend to spend less time with their parents and more time with their peers and individuals of the opposite sex (Berndt, 1982; Csikszentmihalyi & Larson, 1984; Peterson & Hamburg, 1986). The increase in social interactions results in adolescents’ social skills being tested and refined through the positive and negative responses of their peers (Schloss, 1984). Adolescents also need social skills to interact with their peers, in order to create a sense of belonging in a group other than one’s family. Peer interactions lead to the development of more mature social skills, and emotional and behavioral adjustments (Csikszentmihalyi & Larson, 1984). Because of the increased in complexity and number of social interactions experienced by adolescents, social skills training programs can significantly influence the positive development of behaviors during this growth period (Taylor & Larson, 1999).

Appropriate number of skills. Programs that focus on the development of a small, select number of skills are more effective than those that teach numerous skills at once. Many published social skills interventions focus on a large selection of skills. However, when working with students such as individuals with ID who have difficulties with abstract social skills, focus should be placed on a few concrete skills with repeated practice. Therefore, the number of skills taught should be an appropriately matched to the amount of available instruction time and level of disability (Baker, 2003; Kamps, et al., 1992; Sasso, Melloy, & Kavale, 1990).

Effective Pedagogy

Instructional strategies. In order to accommodate different learning styles and to communicate the material effectively, many interventions combine different pedagogical approaches into one package (Huang & Cuvo, 1997). These packages are often referred to as social skills training packages (SST) (Andrasik & Matson, 1985; Chadsey-Rusch, 1986; Marchetti & Campbell, 1990). Unlike programs that only rely on one technique, such as direct instruction, SSTs combine a variety of techniques in order to improve participants' learning. While there is no specific set of pedagogical principles that must be used in these packages, researchers commonly combine of direct instruction, modeling, role playing, and social feedback to create a SST (Huang & Cuvo, 1997).

It is unclear if SST packages effectively increased participants' ability to perform the targeted social skills. When using an SST program, adults with MR demonstrated a significant improvement in their behaviors during informal conversation hours and their ability to role play. The staff rating of the participants social skills also increased. A comparison group that received traditional psychotherapy only improved their abilities to role play (Matson &

Senatore, 1981). Other researchers have had similar success with SST packages (Bornstein, Bach, McFall, Friman, & Lyons, 1980). However, some studies that have relied on SST packages have not resulted in participants sustaining or generalizing social skills (Huang & Cuvo, 1997). This difficulty sustaining and generalizing the skill could be due to the combination of pedagogical techniques that are used in most SSTs. Other variables, such as the lack of opportunities provided to practice the skills in natural settings, may have also hindered skill acquisition.

Teaching social skills includes many of the same techniques used in the classroom to teach academic concepts. Educators in both settings rely on the use of modeling correct behaviors, having the student imitate desired behaviors, providing feedback to the student when needed, and creating opportunities to practice skills in a safe environment (Cartledge & Milburn, 1986). Other methods used by researchers to teach social skills to individuals with ID include behavioral rehearsal (Bates, 1980; Filipczak, Archer, & Friedman, 1980), direct instruction (Blew, Schwartz, Luce, 1985; Matson & Andrasik, 1982; Oznoff & Miller, 1995), pivotal response training (Haring, Roger, Lee, Breen, Gaylord-Ross 1986; Koegel, Koegel, & Schreibman, 1993), social scripts (Loveland & Tunali, 1991; Thiemann & Goldstein, 2001; Zanolli, Daggett, & Adams, 1996), time delay procedures (Charlop & Trasowech, 1991; Charlop & Walsh, 1986; Leung, 1994; Taylor & Harris, 1995) and peer mediation/peer modeling (Blew, Schwartz, & Luce, 1985; Egel, Richman, & Koegel, 1981; Goldstein, Kaczmarek, Pennington, & Schafer, 1992; Kamps, Leonard, Vernon, Dugan, Delquadri, Gershon, Wade, & Folk, 1992; O'Reilly & Glynn, 1995). It is outside the scope of this literature review to discuss all of the pedagogical principles that researchers have used in an attempt to teach social skills. Therefore, only the techniques used in this study will be

discussed. The approaches that will be discussed include direct instruction, process training, coaching, and modeling.

Studies have found direct instruction to be an effective way of teaching communication skills as well as social skills, though the skills did not always generalize to other situations without further instruction (Blew, Schwartz, Luce, 1985; Coe, Matson, Fee, Manikam, & Linarello, 1990; Matson & Andrasik, 1982; Ozonoff & Miller, 1995, Stainback & Stainback, 1987). Direct instruction is when the individual is specifically told how to perform a skill. As has already been discussed, individuals with ID may have difficulties imitating their peers and may not develop social skills naturally (Gresham, 1984). Therefore, they may need to be provided with information on how to specifically perform the task before being asked to demonstrate it. The information is usually presented to the individual through spoken language. An instructor gives a detailed description of the skills and then explains when and/or how to produce the skills (Elliott & Gresham, 1993).

Coaching is a specific type of direct instruction. People work directly with a coach to improve their skills. "First, the child is presented with rules for, or standards of, behavior. Second, the selected social skills are rehearsed with the coach. Third the coach provides specific feedback during the behavior rehearsal and offers suggestions for future performance" (Elliott & Gresham, 1993, p. 304). While this approach is classified as verbal instruction, it also relies on the use of modeling and reinforcement. The coach often models the correct behaviors and rewards the child with positive reinforcement when the skill is demonstrated correctly (Elliott & Gresham, 1993).

Coaching has been successful in the development of social skills in students with ID (Ladd, 1981; Oden & Asher, 1977). Bierman and Furman (1984) worked with

preadolescents who were disliked by peers and considered inadequate in social skills. Half of the participants received coaching and half received peer involvement under supervision. While the peer involvement led to a temporary increase in classroom sociometric status, it did not result in an increase of social skills. The individuals who received the coaching not only increased their level of performance dramatically in both dyadic and group conversations, but they also sustained the skills six weeks after the completion of the treatment. In a study comparing modeling and coaching, Gresham and Nagle (1980) found that third and fourth graders developed social skills from both teaching strategies. However, the individuals who received modeling combined with coaching developed more skills in social initiations and experienced fewer negative social interactions with peers than those that only received modeling.

Process training, also referred to as the social problem solving approach, is a four step approach that can be applied to any social interaction. Instead of teaching a specific response or action for each situation, which often leads to very poor generalization, people are taught to work through a situation using a progressive step model that can be generalized to most social interactions (McFall, 1982). Participants develop a general understanding of the social rules for the culture and how to appropriately act in those situations (Huang & Cuvo, 1997). Process training also requires people to be “active participants in their learning by requiring them to think about and understand general rules” (Huang & Cuvo, 1997, p. 29). As a result, this process empowers people to become more independent and successful in their everyday lives (Browning & Nave, 1993).

While the steps may vary depending on the program, the specific steps for process training are usually: “(a) discriminating salient social stimuli (decoding); (b) identifying

alternative social behaviors and identifying the most appropriate social behavior for the social situation (deciding); (c) performing the social behavior (performing); and (d) evaluating the effectiveness of the social behavior once it has been performed (evaluation)” (O’Reilly, Lancioni, & Kierans, 2000, p.251). A simplistic example of this approach would be: (a) a stranger walks up to Sue and smiles at her; (b) Sue could run away, give him a hug, give him a “hi five”, or say hi and introduce herself; (c) Sue chooses to say hi and introduce herself; (d) Sue then watches the facial expressions of the stranger and listens to the stranger’s response to determine if the stranger responded to her positively. This process would then be repeated. While the stages in this process may seem complex, they are performed by individuals in the general public everyday. When people have developed their social skills, they process this information naturally and within an extremely short period of time. The goal of process training is to get people with ID to the point where they can also apply the skill naturally without having to think through each step (O’Reilly & Glynn, 1995).

Because process training can be applied to any social environment and does not rely on specific social cues, it tends to facilitate a high level of maintenance, transferability, and generalization (Browning & Nave, 1993; Collet-Klingenberg & Chadsey-Rusch, 1991; O’Reilly & Chadsey-Rusch, 1992; O’Reilly & Glynn, 1995; O’Reilly, Lancioni, & Kieran, 2000; Park & Gaylord-Ross, 1989; Rosenthal-Malek & Yoshida, 1994). Two students with MR were taught how to initiate and respond appropriately to a teacher’s questions. They transferred skills from the training setting into the classroom setting and maintained the skills when tested four weeks later (O’Reilly & Glynn, 1995). In another study by O’Reilly, Lancioni, and Kierans (2000), four adults with moderate levels of MR were taught skills needed to be social in a local bar using the problem solving approach. The participants

developed the needed social skills and maintained these skills up to three years after the training was complete.

When compared to other strategies such as modeling or behavioral rehearsal, social problem solving was found to be more effective when teaching people how to resolve difficult social interactions (Foss, Auty, & Irvin, 1989). It has also been found to be a more effective strategy when compared to typical SST packages that incorporate direct instruction and modeling. When three people with MR were taught social skills using a SST package, they did not maintain the skills or generalize the skills to other settings. When taught using process training, the participants not only demonstrated a more substantial increase in ability but also maintained the skills and generalized them to a natural work setting (Park & Gaylord, 1989).

The social skills problem solving approach can also be taught through the use of interactive videos. Browning and Nave (1993) used an interactive video to teach students with mild MR and learning disabilities. At the completion of the program, the participants showed a statistically significant improvement in their social skills. Teachers and participants reported they enjoyed the program and felt it was beneficial.

While process training has been found to be very successful, there is evidence that some individuals who are cognitively lower functioning may not benefit from this approach because of its complexity. When using a process training method, Collet-Klingenberg and Chadsey-Rusch (1991) found that while two participants with higher functioning MR showed a significant increase in skill, another individual with a lower level of functioning consistently performed poorly and was never able to develop the skill.

Modeling is one of the most commonly used strategies to teach social skills. It has long been recognized by social learning theorists as an effective method to teach social skills

to people with and without disabilities (Foss, Auty, & Irvin, 1989). Parents and teachers find the technique appealing because it is non-invasive (Elliott, 1988).

Before using modeling, it is important to determine the cause of the social skill deficiency as modeling is an appropriate strategy to assist people who have difficulties acquiring a skill, but may not assist people who have a problem that is interfering with the skill performance. In some cases, individuals may have a deficiency because they have not acquired the skill. For example, a child with autism may not have learned how to make eye contact. In this case, modeling is an appropriate teaching strategy because modeling demonstrates how to perform the skill properly. Other individuals may have developed the social skill but have a problem that interferes with the skill delivery. A young man with severe ADHD may know how to make eye contact, but is so distracted by the children moving around in the background that he fails to make eye contact with the person he is addressing. Modeling is not beneficial for people who have an interfering problem because modeling does not teach people how to cope or resolve the problem (Elliott & Gresham, 1993).

There are two different types of modeling, live and symbolic. In live modeling, participants observe an individual in a natural setting such as a classroom or in a more controlled environment such as a laboratory. The model is a live person who demonstrates the appropriate skill. With symbolic modeling, participants watch a video clip of an individual modeling the appropriate social skills (Gresham, 1981).

Both live and symbolic modeling follow similar procedures. A skilled coach demonstrates the appropriate actions and then the observer is asked to replicate the skill (Baker, 2003; Foss, Auty, & Irvin, 1989). A four step approach is often applied: (a) tell students they are going to perform the skill following the demonstration; (b) tell students what

they should focus on in the demonstration; (c) say each step as you demonstrate the skill; and (d) help students remember the steps before they attempt the skill themselves (Yelon, 1996). These four stages are essential for the individual to acquire the skill.

According to modeling theory (Bandura, 1969, 1977) certain variables must be in place for people to benefit from modeling. Individuals must: (a) attend to the relevant stimulus; (b) retain the information presented through the modeling; (c) have the ability to reproduce the skill; and (d) be motivated to perform the observed behavior. Observers not only need to pay attention to relevant stimulus but they must also realize the purpose of the demonstration (Goldstein, Sprafkin, Gershaw, & Klein, 1980; Yelon, 1996). Because individuals with ID may have increased difficulties recognizing what part of the demonstration they should focus on, they may need extra direction in this area. Bandura (1969, 1977) suggests the use of narration when watching a model to help observers focus their attention on the relevant information and to also give the specific behaviors a verbal label.

Modeling has several benefits when teaching people with ID. One benefit is that it has been successfully used to teach people with all level of MR, including those with severe MR (Huang & Cuvo, 1997). The second benefit is that is can be taught on a one-on-one basis or it can be used to teach a large group of people. Therefore, a therapist or teacher could use time more efficiently by teaching an entire class of students at one time (Elliott & Gresham, 1993; Huang & Cuvo, 1997). Modeling is also beneficial because it can easily be built into existing programs. For example, it can easily be incorporated into a classroom without changing the classroom curriculum. This not only decreases the amount of time necessary for a successful implementation, but it also increases the possibility of generalization (Elliott & Gresham,

1993). The last benefit of modeling is that it provides participants with a visual image of the correct performance and sequencing of a skill. While this information can be communicated verbally, a visual presentation it is much more effective (Elliott & Gresham, 1993).

Using a videotape of derived behaviors allows greater control over the demonstration. Researchers have taught a variety of skills to adults with mental retardation using video models (Gresham, 1981; Kelly, Wildman, & Berler, 1980; Morgan & Salzberg, 1992). From a research perspective, experimental control is improved because participants are seeing a consistent image (Elliott & Gresham, 1993). From a practical standpoint, accessibility of training is improved given that videos can be used in numerous environments including school and home (Walther & Beare, 1991). Videos also can be used when a practitioner is not able to give a correct demonstration of the desired skill. Lastly, a videotape allows researchers or practitioners to edit the recording, resulting in an ideal replication of the skill. This helps control for human error.

Modeling has been found to be more successful when one uses high prestige models, multiple models, and other methodology to compliment the modeling. Models who are respected by the observer are more likely to be influential (Bandura, 1969, 1977). Researchers have found models are considered more prestigious than others when they are competent and typically developing (Beck & Glidden, 1979; Peterson, Peterson, & Scriven, 1977). The use of multiple models has a variety of benefits that increase the likelihood of the desired behaviors. With numerous models, there is an increased chance that the observer will choose to imitate at least one of the people modeling the correct behavior. Multiple models also increases the length of exposure observers have to the behavior because of the numerous skill demonstrations. Lastly, when people are exposed to a variety of different models, they are

more likely to generalize the skill observed to different settings (Bandura, 1977). However, for modeling to be successful, it must also be accompanied by other methods that provide people with information on specifically how to perform the appropriate behavior and why they should perform the behavior (Goldstein et al., 1980). For this reason modeling is often paired with one or two other teaching strategies such as direct instruction.

Feedback and reinforcement. Feedback to participants should be developmentally appropriate, immediate, and specific. Feedback that is developmentally appropriate uses terminology that is understood by participants. If participants have to think about what a word means or the reference for an unfamiliar expression, they become distracted and their learning is deterred. Feedback should be provided immediately after the skill is completed so that learners can relate the feedback to that specific skill attempt. If the feedback cannot be given immediately, the purpose of the feedback should then be to improve future performances. Whether feedback is given immediately or after a period of time, participants must be given the opportunity to retry the skill in order to apply the newly acquired information (Rink, 2002).

Feedback should be informative, expressing exactly what was good and bad about the performance. When first developing a social skill, feedback should focus on the intent of the skill and not on small details. This helps to increase motivation and self confidence. As people progress in skill level, more focus is placed on the smaller details (Rink, 2002). Reinforcements should also be used to “help define the behavior and make clear the expectations” (p.148).

“A fundamental principle of operant learning is that behavior is a function of its consequence” (Elliott & Gresham, 1993, p. 295). Therefore, if people with disabilities are not

receiving feedback and reinforcement for performing a social skill correctly, they are less likely to perform the social skill in the future. As noted previously in this paper, many individuals with disabilities do not receive positive reinforcement from peers when they are having social interactions. In fact, many people receive negative feedback when they are teased or ignored by their typically developing peers (Chamberlain, Kasair, & Rotherma-Fuller, 2007; Polloway, Epstein, Patton, Cullinan, & Luebke, 1986). Therefore, it is essential that a large amount of positive feedback be given to participants especially during the beginning stages of skill development. This positive feedback is necessary to help combat negative feedback that participants may have received in the past. The positive reinforcement also helps to increase self confidence and self efficacy (Weinberg and Gould, 1999).

Positive reinforcement has also been found to increase level of performance. When a teacher provided social reinforcement to a socially isolated four year old girl, the girl showed a sixfold increase of social interactions when compared to the baseline data (Allen, Hart, Buell, Harris, & Wolf, 1964). Other studies have shown the importance of reinforcement to help extinguish unwanted skills. In two similar studies, a classroom of individuals with mental retardation and a classroom with students who had emotional disabilities received positive reinforcement if they could make it an entire class period with only a small number of disturbances. Both studies found the use of reinforcement was successful in decreasing the amount of unwanted talking during class (Dietz & Repp, 1973; Zwald & Gresham, 1982).

Presentation modalities. A variety of presentation strategies including instructional media, lectures, active learning, and demonstrations should be used to accommodate different styles of learning. Instructional media can include PowerPoint presentations, movies, pictures,

and audio recordings. The variety of modalities has the potential to increase both learning and motivation (Sargent, 1989).

Disability appropriate. When working with individuals with ID, consideration should be given to language choice as well as developmentally appropriate material. Individuals with ID, generally do not have the same level of vocabulary as their typically developing peers. Using simple language with only a few key terms, pictorial cues, and minimal reading and writing activities, increases people's understanding while not detracting from the information being presented (Korinek & Polloway, 1993). Instructors should use short utterances that do not include unnecessary words to inform the learner what to do but. Emphasis should not be placed on what not to do. For example, one should say "look at Johnny when you are talking to him" instead of "don't look at the floor" (Coyne & Fullerton, 2004). The use of visual supports that enhance understanding are also encouraged to increase understanding and learning of people with ASD. The images should remain simplistic and each image can only represent one thought. Images with busy backgrounds or containing numerous objects often lead to confusion (Coyne & Fullerton, 2004).

Qualified Teachers

As with any teaching environment, teachers need to be knowledgeable about the material that they are presenting, the learning styles of the participants, and the needs associated with the disability population they are teaching (Rink, 2002).

The teacher: participant ratio must also be taken into consideration when teaching social skills to people with ID. Even in general education lower teacher: student ratios decrease the amount of time needed to develop a skill (Kelly & Melograno, 2004). A low teacher: student ratio also assists with attention levels. When working in a group setting, it is

often difficult to keep participants actively engaged in the material (Hansen, St. Lawrence, & Christoff, 1989). When working with individuals with ID, attention becomes increasingly difficult because people with ID tend to have a shorter attention span than the general public (Sherrill, 2004).

Appropriate Setting

Compared to a single-trainer model, the use of a group setting has led to a more positive development of social skills, particularly when teaching skills to adolescents (Bierman & Furman, 1984; Hansen, St. Lawrence, & Christoff, 1989; Kirkland, Thelen, & Miller, 1982). Interventions for people with disabilities based on a single-trainer model have had limited success (Koegel & Rincover, 1974; Strain, Kerr, & Ragland, 1979). The single-trainer model is not only unsuccessful, but it also requires a great deal of teacher time, making it difficult or unrealistic to implement in many classroom settings (Brown & Odom, 1995). The more current approaches that use two-trainer interactions or groups of people with and without disabilities interacting, have been found to be much more successful in teaching skills such as expressive language, contextually appropriate behaviors, and play skills (Ihrig & Wolchik, 1988; Pepperberg & Sherman, 2000; Pierce & Schreibman, 1997). When teaching social skills, the use of a group allows for a larger number of social contacts that are more diverse than those that would occur when conducting a single-trainer model. The group setting also allows for more opportunities to observe modeling of desired skill from others (Bierman & Furman, 1984; Hansen, St. Lawrence, & Christoff 1989). Lastly, because the group setting teaches more than one person at a time, it is very time and cost effective (Christopher et al, 1993).

There has been great controversy over which environment, inclusive or segregated, promotes better social skills for individuals with disabilities. One belief is that individuals with disabilities are more likely to develop appropriate social skills when they are placed in an integrated environment. Individuals without disabilities will raise behavioral expectations and will act as age-appropriate role models for the people with disabilities (Chamberlain, 2007). When people with disabilities are segregated in the special education classroom, they are denied valuable interactions with typically developing peers. This lack of social interaction can hinder the level of social development experienced by a person with MR (Gaylord, Stremel-Campbell, & Storey, 1986).

However, research has failed to support the theory that inclusion is necessary for social development. In the 1970s, many researchers found that students with ID who were integrated for instruction had very little interaction with the typically developing children (Allen, Benning, & Drummond, 1972; Bruininks, 1978; Bryan, 1974; Karnes, Teska, & Hodgins, 1970; Morgam, 1977; Ray, 1974). These research findings continued into the 1990s (MacMillan, Gresham, & Fornes, 1996; Ochs, Kremer-Sadlik, Solomon, & Gainer Sirota, 2001; Sale & Carey, 1995). Krauss, Seltzer, and Goodman (1992) found that students with ID experienced as much difficulty making friends in an integrated classroom as they did in a segregated classroom. Luftig (1988) found that individuals with ID who were integrated into a normal classroom demonstrated much higher levels of isolation and loneliness compared to their peers without ID. There have been similar reports for children with high functioning autism (Bauminger & Kasair, 2000)

Children with ID must be taught appropriate social skills in order to be successfully transitioned into mainstreamed program. Individuals with ID do not naturally acquire social skills without receiving specific instruction (Gresham, 1981, 1984). “Mainstreaming does not ensure that handicapped children [sic] will model the social behaviors of their peers nor does it guarantee social interaction or social acceptance of these integrated handicapped students” (Laushey, 1981, p. 140). Instead mainstreaming can result in a situation where they children become more isolated and interact less with the people around them (Laushey, 1981). Therefore, children with ID should receive instructions on appropriate social skills before they are integrated into a mainstream environment.

Some skill instruction can continue to occur in an inclusive setting if modifications are made to the environment. To elicit social skill development, the environment should provide a high number of opportunities for positive social interactions. The environment should ensure that positive social behaviors receive positive reinforcement, while negative behaviors are discouraged or ignored. There should also be appropriate modeling of the desired social skills and feedback given to the targeted individual. (Elliott & Gresham, 1993). People with ID have developed social skills in an inclusive setting when there are opportunities to have positive social interactions and social training experiences (Harrington-Licker, 1997).

The physical environments where the skills are being taught also need to be considered. Small sensory occurrences such as a flickering light, the chatter of people in a hallway, or sitting in very close proximity to others can be distracting to people with ID disabilities, especially those with ASD (Coyne & Fullerton, 2004). It is essential that the environment minimizes distractions and comfortable for all participants.

Support for the Effective Practice Component of the Alexander Model

Appropriate Activity

The sport setting is an ideal environment for teaching social skills because of the social relationships that are often established amongst teammates. Environments such as the gymnasium, pool, and playground are associated with a plethora of naturally occurring social interactions (O'Connor, French, & Henderson, 2000). When adolescents are involved in a peer group, they develop a sense of belonging while also developing emotional and behavioral skills that are needed for daily living (Csikszentmihalyi & Larson, 1982). A natural setting such as sports does not force participants to be social, but allows them to choose when they would like to interact with others. The positive peer interactions that occur in sports are an important venue to develop social skills such as appropriate assertiveness, altruistic behaviors, and moral reasoning. The peer interactions also help to develop the reciprocal give and take interactions that occur within a friendship (Hartup, 1978).

People with ID and their parents value sports because of the social opportunities they provide. Castaneda and Sherrill (1999) followed a Challenger baseball team throughout a season. During the researchers observed the practices and games and also interviewed 16 people with disabilities, their families, and the coach. When the parents were asked which component of the program they valued the most, the answer was not the physical activity, but the social interactions their children received. As one father said, "...The little friendships that occur are the most important thing of all because they have to struggle so much for friends." (p. 385). One of the most commonly reported reason for Special Olympics participation is the opportunity it provided to socialize with other people and make friends (Farrell, Crocker,

McDonough, & Sedgwick, 2004; Shapiro, 2003; Siperstein, Harada, Parker, Hardman, & McGuire, n.d.). In Shapiro (2003), the Special Olympics athletes described the optimal environment as one in which coaches allow time to have fun and interact with their friends. All of these studies emphasize the potential physical activity has to initiate social contacts and relationships.

Physical education and sports have also been cited as ideal natural environments to practice newly developed social skills (Groft & Block, 2003). Delprato (2001) found that an intervention that included play or everyday activities was more successful in teaching language to children with autism compared to interventions that were more discrete-trial based. Researchers have found that game experiences help people with disabilities to become more capable of socially interacting (Collard, 1981; Jansma, 1982; Schleien, 1983; Wehman & Schleien, 1981). Self-confidence, social competence, self-image, and the ability to develop and maintain friendships have occurred during Special Olympics program (Castagno, 2001; Riggen & Ulrich, 1993; Wright & Cowden, 1986). Because of positive growth in social skills associated with physical activity, physical educators are encouraged to teach students to make eye contact during gym class (Reid, O'Connor, & Lloyd (2003).

Another benefit of the physical activity setting is that it is easy to establish a routine into the practice session. Routine has been found to help decrease levels of anxiety in individuals with ASD. It provides the structure, familiarity, and predictability that are needed for many individuals with ASD to function (Reid & O'Connor, 2003).

Multiple Natural Settings

Programs that occur in a natural environment are more suitable for teaching social skills because they lead to skill generalization (Christopher, Nangle, & Hansen, 1993; Kohler, Anthony, Steighner, & Hoyson, 2001; McGee, Krantz, & McClannahan, 1984). Naturalistic teaching, when the individual learns through guidance in natural interactions and experiences, has increased participants maintenance and transfer of skills to other settings (Barnett, Carey, & Hall, 1993; McClean & Cripe, 1997). Naturalistic teaching has also helped people with ID become more socially independent. “By teaching children in the context in which the language and skills will be used, they are able to learn the functional and social uses of the target phrases and skills from the initial lesson” (Liber, Frea, Symon, 2008, 313).

Many interventions in the past have focused on having a child taught in a non natural setting where an adult and child have direct interactions. The studies had one adult provide verbal and physical prompts, directions, and praise in order to teach social skills to young children with autism (Kohler & Strain, 1990; Strain & Odom, 1986). With this approach, an adult sits with the child and provides a specific prompt. When the child responds appropriately, the adult gives praise verbally or through a token system. If needed, the adult gives directions on how to improve the response. Unfortunately, this particular approach does not promote generalization or maintenance of the skill (Brown & Odom, 1995). The adult is only providing a limited number of social cues, which means that proper social behaviors will usually only occur when identical social cues are present (Elliott & Gresham, 1993).

Naturalistic teaching results in the children learning a variety of cues. As a result the children do not rely on a specific prompt to demonstrate the skill. This tends to result in generalization of the skill to a variety of different situations.

Researchers can also use stimuli and conversation points that would occur in natural environments when teaching social skills with direct instruction. When using direct instruction in conjunction with natural conversations, it is important to incorporate social cues that are demonstrated by peers without disabilities. For example, when having participants practice having a conversation, you would use a topic that is of interest to the participants while also using terminology that is appropriate. Teaching participants to use words like rad, groovy, and swinging would not be appropriate for current children. This particular approach has been found to help participants to generalize the skills to other contexts (Haring, Roger, Lee, Breen, & Gaylord-Ross, 1986).

When using a natural environment, it is essential that participants do not fear consequences associated with making a mistake in a more real-life situation (Baker, 2003). During a structured program, such as a Special Olympics program, participants can practice their social skills through the use of fun activities and games while not having to worry about being ridiculed if a skill is done incorrectly. Participants then associate the social skills with a fun and positive experience. Feelings of success lead to a higher level of self-confidence, encouraging the participant to continue practicing and developing the skills. Such programs that have created positive peer interactions with social skills training have been found to be successful in establishing the individual's social abilities (e.g., Harrington-Lucker, 1997).

It is recommended that social skills interventions only be found valid if the researchers or clinicians can show that individuals who received the intervention demonstrate the social skills in natural environments (Berler, Gross, & Drabman, 1982). A natural environment facilitates the use of skill without prompting or direct instruction. As a result, the successful execution of social skills in a natural setting is the ultimate test of skill acquisition.

Observations taken in a natural environment also allow one to pinpoint exactly what aspects of the intervention were successful and what components of the skills have or have not been developed (Korinek & Polloway, 1993).

Adequate Practice Opportunities

In order to master and maintain new skills, individuals with ID should be provided extended amount of structured practice time (Korinek & Polloway, 1993). In a study with eight adults who have MR, the authors concluded that longer periods of social skills training accompanied by a fading out of the treatment may be necessary to maintain a change in social skills (Matson & Andrasik, 1982). One of the reasons that many social skill interventions have failed is because they do not allow an ample amount of time to practice the newly acquired skills (Oden & Asher, 1977). When practice time is not allotted, the result is “a socially awkward behavioral sequence that comes across as superficial or rote rather than genuine or convincing” (Elliott & Gresham, 1993).

Unfortunately, individuals with ID often have limited social opportunities in which they are able to practice their social skills. A lack of social skills paired with decreased social opportunities may result in people consistently failing at their social attempts. Eventually constant failures lead to isolation where the individual does not want to try to interact with others or develop meaningful relationships for fear of rejection (Kirby, 2002). In order to combat this problem, a significant amount of time should be given to practice social skills.

The amount of time that participants have to practice their skills within the natural setting may affect the level of skill development more than the actual intervention. When comparing different social skills teaching strategies, Foss, Auty, and Irvin (1989) found that all strategies were effective to some extent though the amount of time spent providing direct

instruction had a negative effect on the students' performance. Activities that allowed for less teaching time and more practice and development of skills in a natural setting were found to be more successful. Therefore, it is not the amount of instructional time that results in the development of skills, but the amount of time the individual is able to practice the skill in a natural setting.

Multiple, Skilled Instructors

An intervention can have multiple instructors within one environment (e.g., having typically developing peers and coaches) or interventions can take advantage of people in different environments such as teachers at school, coaches of Special Olympics programs, and parents at home. One example of using multiple instructors within one environment is the Unified Sports model presented by Special Olympics. It is an integration approach where individuals without disabilities are invited to participate in the Special Olympics program (Unified Special Olympics Fact Sheet, 1991). The people without disabilities, referred to as partners, interact with the Special Olympics participants. The program is designed to encourage greater independence of the individuals with disabilities while also encouraging social interactions (Riggen & Ulrich, 1993). By including the partners into the program, the Special Olympic participants receive instruction from coaches as well as partners.

The use of peers as teachers has been found to be a successful pedagogical principle (Hendrickson, Strain, Tremblay & Shores, 1982; Sisson, Babeo, & Van Hasselt, 1988; Sisson, Van Hasselt, Hersen, & Strain, 1985). Using peers as a mode of improving social skills allows the individual to have social interactions in a natural environment and context (Hansen, Watson-Perczel, & Christopher, 1989; Huang & Cuvo, 1997). Peers "increase the youth's opportunity to contact the natural reinforcing contingencies that help maintain positive social

behavior, while directly addressing the negative attitudes and responses of the peer group that help to maintain the withdrawal of social behavior” (Christopher, Nangle, & Hansen, 1993, p. 328). Peers as teachers are also more cost effective than professionals. When participants are receiving social skills training from peers, they receive needed social skills instruction without having to pay for the one- on-one time provided by a professional. While social skills training with a professional may still be needed, the amount of time required is decreased (Christopher, Nangle, & Hansen, 1993; Elliot & Gresham, 1993).

When a peer helps with the development of a skill, it is often referred to as a peer-mediated approach. There are three different peer-mediated approaches that have been commonly used in prior research studies or education (Laushey & Heflin, 2000). The first type of peer involvement places children with disabilities into a classroom with peers who do not have disabilities. This approach is sometimes referred to as the proximity approach (Odom & Strain, 1984; Roeyers, 1996). In this approach peers do not receive training on how to help teach social skills. The people with disabilities are expected to improve their social skills based on their observation of socially competent peers (Roeyers, 1996). In the second approach, peers are taught to prompt people with disabilities in order to get a desired response. When the desired response is received, peers provide positive reinforcement (Odom & Strain, 1984; Roeyers, 1996). The last approach trains peers how to make appropriate social initiations with people who have disabilities. The peers are usually asked to focus on one student in particular and are instructed to prompt the social interactions with that targeted student (Odom & Strain, 1984; Roeyers, 1996; Strain, 1977; Strain & Timm, 1974; Strain, Shores, & Timm, 1977).

Each of the three peer-mediated approaches have different results. As has been noted earlier in this review of literature, the proximity approach often results in social isolation. However the second and the third approaches also have a flaw. While the two approaches are excellent for teaching specific skills for a specific environment (Roeyers, 1996), these approaches rarely result in generalization of social skills to other environments (Odom & Strain, 1984, Roeyers, 1996; Sisson, Van Hasselt, Hersen, & Strain, 1985). Because people with disabilities are only interacting with one peer in one environment they become accustomed to specific social cues. When the peer is not there to provide the specific social cue, the skill is lost (Laushey & Heflin, 2000).

In order to increase generalization of social skills, Laushey and Heflin (2000) conducted a research study where children with autism and non-disabled peers were educated simultaneously. Using kindergarteners in an inclusive classroom, the researchers taught social skills to the entire class. From the results, the researchers concluded that “the specific training and supportive structure results in higher percentages of age-appropriate social interactions between children with autism and their typical peers” (p. 191). Students with autism were able to generalize the social skills with all of their peers. Another advantage to this approach was that all of the students were involved in the development of social skills, and one specific child was not burdened with the responsibility of always being the partner to the child with autism. A similar study was done in the work setting, where typically developed adults interacted with people who had autism and severe handicaps [sic]. Through these interactions, the participants developed appropriate social skills to be applied during their break time. Participants also generalized these behaviors to all coworkers who were involved in the study (Breen, Haring, Pitts-Conway, & Gaylord-Ross, 1985).

Social skills and play skills can be taught to children with ASD using typically developing children in the peer-mediated approach (DiSalvo & Oswald, 2002; Garfinkle & Schwartz, 2002; Goldstein, Kaczmarek, Pennington, & Shafer, 1992; Kamps et al, 2002, Laushey & Heflin, 2000, Morrison, Kamps, Garcia & Parker, 2001; Pierce & Schreibman, 1995, 1997; Strain & Fox, 1981; Strain & Kohler, 1998). However, individuals with disabilities should not be excluded from serving as peer models. Liber, Frea, and Symon (2008) used peers with a variety of disabilities to serve as play partners for children enrolled in the research study. The goal of the study was to teach a play sequence to three participants with autism. Participants not only learned the play sequence, but they also applied the social and imaginative play skills to another environment with different materials and a different play partner. These findings suggest that people with disabilities as well as typically developing peers can be used in peer-mediation.

Family Involvement and Support

It has been suggested that parents are a crucial component in the educational success of their children (Pryor, 1995). Pool (1997) suggests that parental involvement would be a tremendous benefit to any social or emotional development program that is held within the school system. Governmental agencies have also called for parental involvement in intervention and educational programs. The Goals 2000 Educate America Act encourages educators to get parents involved in the social and emotional development of their children (Love, 1996). Public Law 99-457 acknowledges that parents and the home environment must be strongly considered when planning an intervention or educational program. According to the law, families are essential members of the team that creates the child's Individual Family Service Plan (IFSP) and the Individual Education Plan (IEP) (U.S. Public Law 99-457, 1986).

Until parents provide input and accept the IFSP and IEP, the plans cannot be implemented for the child (Fiorini, Stanton, & Reid, 1996)

Parents serving as teachers in the home environment help the child to acquire, maintain, and generalize social skills (Baker, 1989; Graziano & Diamant, 1992; Hager & Vaughn, 1995; Schaefer & Briesmeister, 1989, Schloss, 1984; Sugai & Lewis, 1996; Tiedemann, Georgia, & Johnston, 1992; Webster-Stratton & Hammond, 1990). When looking at all successful interventions, regardless of the model or pedagogical approach, one of the common variables is the use of trained parents to incorporate the program at home (Moroz, 1989).

Having parents work with children at home has the potential to increase the number of instructional hours received by the children, while avoiding the large expenses associated with extensive one-on-one therapy or instruction (Ozonoff & Cathcart, 1998). Home instruction can occur seven days a week and can be done numerous times throughout the day, increasing the participant's exposure to the material. The increase in exposure time is essential since it is often beyond the family's financial means to provide their child with a daily treatment program and a large amount of private therapy sessions (Ozonoff & Cathcart, 1998). Involving significant others, including teachers and parents, in social skills interventions creates a situation where participants are bombarded by the information in all environments. This leads to a more successful performance of social skills (Soresi & Nota, 2000).

Another advantage of including parents is that they are able to provide meaningful reinforcement that may not be available to a practitioner. While information and feedback can be given to the participants during the program, the reinforcers that are provided at home tend to be much more powerful (Goldstein & Lanyon, 1971). For example, a parent can reward a

child for interacting appropriately with peers by allowing them to play video games for an extended period of time. Parents are also able to provide the feedback and reinforcement immediately, in the appropriate environment since they are with their child throughout the day (Sheridan, Dee, Morgan, McCormick, & Walker, 1996). When a people with disabilities are in a position where a skill may be forgotten, such as a novel environment, parents can remind their child of the essential social skills (Ozonoff & Cathcart, 1998).

Teaching parents how help their children provides the parents with the tools to successfully enforce proper social skills and give redirection for poor social skills (Jones & Stoodley, 1999). Many of the commonly used pedagogical principles, such as modeling, coaching, and reinforcement, can be applied within the existing structure of the home environment. This allows parents to incorporate social training into the natural interactions of the family (Elliot & Gresham, 1993). Lastly, having the parents serve as another teacher allows the child to practice the skills in another natural setting while also receiving necessary direction. As discussed earlier, a natural setting is necessary for skill development and generalization of the skill. Because parents are teaching the child throughout the day, they are able to encourage the use of appropriate social skills whenever an appropriate situation arises and not just within a planned period of time. Parents are able to provide more opportunities for their child to practice the social skills in natural settings that are meaningful as well as functional with toys, household objects, and familiar materials. With family members, children are able to practice their social skills in contexts that are frequent, functional, and culturally appropriate. All of these variables increase the development and generalization of social skills (Woods & Wetherby, 2003)

Because of the numerous benefits associated with incorporating parents, many social skills interventions rely on the use of parental involvement to complement in-school interventions that are provided by a teacher or therapist. One of the most well known programs is the TEACCH model (Treatment and Education of Autistic and Related Communication-Handicapped Children) (<http://www.teacch.com>) for children with ASD. “A cornerstone of the TEACCH intervention model is home programming, in which parents are taught to serve as their child’s ‘co-therapist’, implementing treatment in the home setting” (Ozonoff & Cathcart, 1998). This program, based at the University of North Carolina, was first introduced in 1966 and is still active today (Ozonoff & Cathcart, 1998). Numerous studies have looked at the success of this approach. Children enrolled in a TEACCH program have significantly increased their appropriate behaviors. Parents of the children enrolled in TEACCH significantly increased their ability to teach their child (Marcus, Lansing, Andrews, & Schopler, 1978; Short, 1984). Ozonoff and Cathcart (1998) conducted an intervention that was modeled after the TEACCH program with 22 young children with autism, many of which were also diagnosed with mental retardation. The treatment group “made an average of 9.6 months of developmental gain” (p. 30) over a 4 month period. This is a tremendous development of skill, especially when one considers the fact that the participants were diagnosed with MR and ASD.

When a child has difficulties developing social skills, parents may require instruction on how to provide their child with the appropriate and primary social skills training (Budd, 1985). Parents may need instructions on how to help their child develop and how to provide different opportunities to practice social skills. It is not uncommon for parents to be so eager to help their child develop social skills that they bombard their child with questions while not

allowing the child a chance to initiate a conversation or ask a question. In order to prevent parents from putting their child in a passive role, parents should be given suggestions and guidance about what they should expect and how to incorporate social skills training into their own lives (Gerber, 2003).

Parents are very interested in helping their children develop skills at home. After surveying a random sample of 400 parents who had children in special education services, Lynch and Stein (1982) found that almost 70% of parents would be willing to work on their child's educational goals at home. Sixty percent of the parents were willing to work directly with the teachers to help develop the skills outlined in their child's individualized education plan (IEP). Knowing that parents are willing to assist with their child's development is only further encouragement researchers and practitioners to incorporate them into home programs.

Parents have also been found to benefit physically and emotionally when they assist in their child's development. When using a parent training format, parents have been found to have an increased level of positive affect (Schreibman, Kaneko, & Koegel, 1991). Koegel, Bimbela, and Schreibman found that parents of children with autism and related disorders "appeared to be happier, more interested, exhibiting lower levels of stress and engaged in a more pleasant type of communication interaction with their child..." (p. 356) when they were taught how to teach and reinforce social skills in a natural environment. Others have found that when the parents work with their children at home through a structured program, the parents' self confidence increases, their competency to interact with their child increases, and the families' general quality of life improves (Gallagher, 1990; Turnbull & Ruef, 1996).

Conclusion

Individuals with ID struggle with the development of social skills in all facets of life; school, work, and leisure. The *Alexander Model for the Development, Maintenance and Generalization of Social Skills* outlines the essential variables for an intervention program for people with ID. The model is supported by research and is based on firmly supported theoretical models from Bronfenbrenner, Sargent, and Bandura. Based on past research one can concluded that successful social skills programs should provide direct instruction and effective practice as is outlined above. With training the frustration and distress associated with poor social skills is something that can be decreased. People with ID simply need to the tools to successfully interact in society and create essential social relationships.

**CHAPTER 3:
SOCIAL SKILLS AND SPORTS (S³) PROGRAM: DEVELOPING THE SOCIAL
SKILLS OF YOUNG ADULT SPECIAL OLYMPICS ATHLETES**

**Title: Social Skills and Sports (S³) Program: Developing the Social Skills of Young Adult
Special Olympics Athletes**

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Running Head: Teaching Social Skills through Sports

Rationale for Manuscript 1:

Social Skills and Sports (S³) Program: Developing the Social Skills of Young Adult Special Olympics Athletes

The manuscript entitled *Social Skills and Sports (S³) Program: Developing the Social Skills of Young Adult Special Olympics Athletes* is to be submitted to *Education and Training in Developmental Disabilities (ETDD)*. The purpose of the article is to address the three research questions of this study: (a) did participants develop social skills as a result of S³; (b) did participants generalize the social skills they developed in S³ to other environments; and (c) did participants maintain the social skills developed in S³ five weeks after the completion of the program? ETDD was chosen because it is a respected journal within the field, and articles that have been published in the past discuss pedagogical principles that can be used to educate people with developmental disabilities. Since this research study analyzed if participants could learn social skills if a combination of pedagogical principles were applied in a classroom and sport setting, it seems to be an appropriate fit. The population that reads ETDD includes fellow researchers and special education teachers who are looking to improve the learning experiences of people with ID. The findings of this research study provide important information to both teachers and researchers and are directly related to the journal's purpose.

The journal requires that manuscripts are prepared based on the guidelines set in the Publication Manual of the American Psychological Association. See Appendix L for the detailed submission guidelines. For the submission guidelines provided by ETDD, please refer to Appendix N.

Abstract

The purpose of the study was to determine if young adult Special Olympics participants could develop, generalize, and maintain target social skills (eye contact, contributing relevant information, and turn taking) as a result of a 14-week Social Skills and Sports (S³) program that combined classroom instruction with soccer activities. Qualitative and quantitative data were collected through direct observation, parent interviews, and parent rating forms. Visual analysis and qualitative methodology were applied to analyze the five case studies. All of the participants increased their ability to demonstrate at least one of the targeted skills, generalized the skill(s) to other settings, and maintained the skill(s) five weeks after completing the intervention. Participants also developed social skills that were not targeted in S³.

Individuals with mental retardation (MR) and autism spectrum disorder (ASD) often have difficulties developing social skills that are needed for successful interactions with others. Many of the skills in which they are deficient, such as joking, talking about a common subject, expressing and interchanging emotions, and asking about another person's interests are essential for initiating friendships and creating social networks (Asher, Parker, & Walker, 1998; Chadsey-Rusch, 1990; Chadsey-Rusch & Gonzales, 1988; Gerber, 2003). People with MR and ASD also tend to have a difficult time interpreting other people's feelings and realizing what those feelings may represent in social environments (Bradley & Meredith, 1991; Moffatt, Hanley-Maxwell, & Donnellan, 1995; Sigman & Ruskin, 1999).

Without social skills, people are at risk of being rejected, experiencing increased difficulties in school, and being under or unemployed during their adult years (Elksnin & Elksnin, 1995, 1998, 2001). Compared to people without disabilities, individuals with MR are more likely to be rejected or neglected by their peers (Chamberlain, Kasari, & Rotheram-Fuller, 2007; Polloway, Epstein, Patton, Cullinan, & Luebke, 1986). The relationships people with MR and ASD do have with peers tend to be less stable, sustained over a shorter duration of time, and qualitatively different in nature (Bauminger & Kasari, 2000; Chamberlain, Kasari & Rotheram-Fuller, 2007; Soresi & Nota, 2000; Zetlin & Murtaugh, 1988). Difficulties with social skills have also been cited as one of the primary reasons students with disabilities are unsuccessful in their transition from school to employment and independent living (Chadsey-Rusch, Rusch, & O'Reilly, 1991; Edgar, 1987; 1988). A deficiency in social skills during an individual's childhood is the best single predictor of significant problems transitioning into adulthood (Strain & Odom, 1986).

Social skills are an essential component for life adjustment (Epstein & Cullinan, 1987; Neel, 1988). They are necessary for the initiation and maintenance of social relationships with people in society, including family members, peers, teachers, and co-workers. Social skills also allow people to participate in daily routines (Quinn, Jannasch-Pennel, & Rutherford, 1995; Woods & Wetherby, 2003). They promote independence, increase social acceptability, and improve the person's quality of life (Bellack, 1983). Unfortunately, people with MR and ASD often have difficulties developing social skills naturally, and therefore need to be provided with direct social skills instruction (Gresham, 1984).

The team sport setting is an ideal environment to teach social skills because of relationships that are often established amongst teammates. Castaneda and Sherrill (1999) reported that parents of children on a Challenger baseball team valued social interactions with other teammates more than the physical activity their children received while playing baseball. For Special Olympic athletes, one of the most commonly reported reasons for participating in Special Olympics was to socialize with others and make friends (Farrell, Crocker, McDonough, & Sedgwick, 2004; Shapiro, 2003; Siperstein, Harada, Parker, Hardman, & McGuire, n.d.).

With people who have disabilities struggling to develop social skills and their lack of social skills affecting different domains in their life, a social skills intervention could help to improve the participants' quality of life. Participants would be able to develop social skills that are necessary for interactions within the school, work, and community settings. With sports providing an enjoyable environment that also leads to many social interactions, an

intervention that occurs in a Special Olympics setting would address participants' social skills deficiencies in a fun and productive fashion.

The purpose of the study was to determine if participants could: (a) develop and refine the target social skills as a result of a 14-week social skills intervention; (b) generalize the social skills when interacting with family members, friends, people in the community that they know, and strangers; and (c) maintain the social skills five weeks after the completion of the program. The Social Skills and Sports Program (S³) intervention was created specifically for this study. It was designed to teach social skills in a classroom and soccer setting to adolescents who qualify for Special Olympics. Participants received instruction on contributing relevant information to a conversation, turn taking in a conversation, and making appropriate eye contact.

Social Skills and Sports Program

The Social Skills and Sports Program (S³) was a 14-week program that met for 90 minutes twice a week in a local indoor soccer facility and conference room. There were six phases of the program; introduction, baseline, classroom, soccer, party, and baseline/retention (Figure 1).

Introduction phase. During Session 1, participants were introduced to the staff and other participants, participated in team-building activities, and played in soccer activities. There was no social skill instruction given during this phase.

Baseline phase. Sessions 2-5 were used to determine the participants' current level of social skills using The *Observer Skill Rating Form*. Participants were engaged in soccer drills and activities, but the staff did not encourage or reward them for socializing with each other, nor did they provide specific instructions on the target social skills.

Classroom phase. Many researchers have suggested that individuals with disabilities must receive social skills training before being asked to demonstrate the targeted skills in mainstreamed settings (Gresham, 1981, 1984; Laushey, 1981). Therefore, the purpose of Sessions 6-13 was to provide participants with direct instruction on the social skills before giving them the opportunity to practice the skills in a soccer environment. Each session consisted of 45 minutes of classroom activities where participants discussed social skills and played games, and 45 minutes of soccer where participants practiced social skills while participating in soccer activities.

The general outline of each classroom period consisted of a brief welcome, a review of the information presented in the previous session, a short presentation of new information, a series of activities to practice the new skill, and a summary/review of the information presented. For each lesson, a PowerPoint presentation that used both pictures and words was created to accommodate different abilities and learning styles. During Sessions 6-8 the classroom instruction focused specifically on contributing relevant information to the conversation. Sessions 9-10 focused on taking turns, and Sessions 11-12 focused on making eye contact. Session 13 was a review session of the material presented in Sessions 6-12. As instruction progressed, participants were reminded to incorporate previously learned skills. For example, during Session 9 participants were reminded that while they are taking turns they should also contribute relevant information.

The intervention, written by Melissa Alexander, applied a combination of strategies including direct instruction (Elliott & Gresham, 1993; Gresham, 1984), modeling (Baker, 2003; Foss, Auty, & Irvin, 1989), and process training (Huang & Cuvo, 1997; O'Reilly, Lancioni, & Kierans, 2000). In order to accommodate the cognitive level of the participants,

process training was taught in a simplistic form. Participants were taught to: (a) look at the person you wanted to talk to, (b) listen to what the person was saying, (c) think about what you should say in response, (d) talk to the person, and (e) repeat the steps.

The classroom portion of the program was taught by the primary investigator and head coach. An assistant coach sat with the participants helping to keep them focused on the material being discussed. While researchers have suggested that individuals with intellectual disabilities need specific social skills training in order to develop social skills (Gresham, 1981, 1984), it has also been suggested that positive social interactions with peers who have developed social skills are needed if the skills are to be generalized to other setting (Harrington-Licker, 1997; Hendrickson, Strain, Tremblay & Shores, 1982; Sisson, Babeo, & Van Hasselt, 1988; Sisson, Van Hasselt, Hersen, & Strain, 1985). Therefore, four high school aged soccer players who did not have a disability intermingled with the participants in a manner similar to the partners in Special Olympics Unified Sports Programs (Joseph P. Kennedy, Jr. Foundation, n.d.). The partners served as buddies for the participants during both classroom and soccer activities, interacted with the participants as team members, helped redirect the participants' attention when needed, provided positive reinforcement and direct instruction to the participants, and modeled appropriate social skills.

Soccer phase. Soccer was chosen because it provided participants with a fun, natural environment to practice and develop social skills. Practicing newly acquired skills in a natural environment leads to a greater level of skill development, generalization, and maintenance (Barnett, Carey, & Hall, 1993; Christopher, Nangle, & Hansen, 1993; Kohler, Anthony, Steighner, & Hoyson, 2001; McClean & Cripe, 1997; McGee, Krantz, & McClannahan, 1984). Physical education and sports have been cited

as ideal natural environments to practice newly developed social skills (Groft & Block, 2006). And in some instances, game experiences have help people with disabilities to become more capable of interacting (Collard, 1981; Jansma, 1982; Schleien, 1983; Wehman & Schleien, 1981).

During the soccer phase (Sessions 13-27), participants were given the opportunity to practice and develop the skills they learned during the classroom portion of S³ through natural interactions and planned activities. Participants were instructed on soccer skills for a total of 74 minutes each session. Throughout the soccer practice, structured activities fostered natural social interaction. For instance, while stretching, participants were encouraged to discuss activities they did over the weekend. Some drills were specifically formatted to allow participants to practice soccer skills while also conversing with a partner. For example, participants were given a bingo sheet that had pictures replacing the numbers. Participants dribbled their ball to a coach or partner and initiated a conversation about the images on their board. The first person to discuss five squares in a row won.

During the 8-minute review sessions that occurred before and after soccer, participants were reminded of the social skills they learned in the classroom, reviewed the steps of the process training model, received verbal positive reinforcement for proper demonstration of the skill, and received direct instruction as needed.

The head coach and assistant coach were responsible for delivering the soccer portion of the intervention. The high school aged partners intermingled with the participants, creating spontaneous social interactions throughout the practice. Partners also helped to initiate conversations when needed, provided positive reinforcement when they observed appropriate social interactions, and provided direct instruction as needed. The primary investigator

provided instruction during the two 8-minute social skills review sessions and would provide positive reinforcement to intermittently through out the soccer practice.

Parent Supplemental Activities Packet. When parents serve as teachers, the child receives more instructional time and is able to practice the skill in different environments (Ozonoff & Cathcart, 1998). This pedagogical technique facilitates the development, maintenance, and generalization of skills (Baker, 1989; Graziano & Diament, 1992; Hager & Vaughn, 1995; Schaefer & Briesmeister, 1989; Sugai & Lewis, 1996; Tiedemann, Georgia, & Johnston, 1992; Webster-Stratton & Hammond, 1990). Therefore, on the first day of the classroom sessions, parents received the *Parent Supplemental Activities Packet*. This packet contained information about the social skills being discussed; information about how to practice and encourage the use of social skill in the home; activities for parents to do at home to continue practicing the social skills; and handouts of the PowerPoint presentations used in the classroom.

The activities listed in the packet were intended to be incorporated in the family's daily life. Most of the activities were games that could be done while driving in the car, eating a meal together, or doing chores. Many of the activities are common childhood games that have been manipulated to teach the specific social skills. Parents were asked to do the activities with the participants for at least 15 minutes 4 times a week. They were also asked to reward their child when he/she correctly demonstrated the target behaviors or provide direct instruction when the behaviors were not performed correctly.

During the classroom phase of the program, the student investigator met with the parents for the last 15 minutes of each session (while the participants were playing soccer) to

discuss the packet and related activities. During the soccer phase, parents were contacted biweekly by phone to remind them to practice social skills with their children.

Party phase. The party phase (Session 28) was a time to recognize participants for their accomplishments while also creating a sense of closure. Occurring on the last day of the program, participants scrimmaged against their families, and then participated in an award ceremony and pizza party.

Method

Design

This study consisted of multiple replications of a single-subject research design, specifically an A (baseline) - B (classroom) - C (soccer) - A (baseline/retention) quasi-experimental repeated measures design. Because inter- and intra-participant variability is a major challenge when conducting research among people with intellectual disability (Batshaw & Shapiro, 2002; Towbin, Mauk, & Batshaw, 2002), participants served as their own control. Data were analyzed individually, resulting in 5 replications of a case study.

The classroom instruction, soccer activities, and family supplemental practice of social skills were designed to be inter-related. Therefore the effect of each component on the participant's learning was not analyzed separately. Instead the S³ program was analyzed as a whole, examining levels of change at different time intervals in the program. The independent variable was the S³ program. The dependent variables were the targeted social skills, namely making eye contact, staying on topic, and taking turns during conversations.

Participants

To qualify for the program, participants were required to: (a) have a mild/moderate intellectual disability (such as mental retardation and autism) as the

primary disability; (b) be verbal; (c) be between the ages of 13 and 25 years; (d) have current Special Olympics Application for Participation and Medical Update forms; (e) have deficiencies in social skills before entering the program; and (f) have parent consent and participant assent. Potential participants who had atlantoaxial instability were not eligible to participate because of the potential for injury in the soccer component of the intervention.

Participants within a 45 minute drive of the soccer facility were recruited through the distribution of flyers to local schools, disability support groups, and the local Special Olympics office. Although approximately 750 flyers were disseminated, only 12 families responded, and only five families were accepted into the study group after consideration of the selection criteria. Reasons for non-response is unknown, but it seems likely that some families found the commitment to S³ impractical given other family commitments. A preliminary interview was arranged with interested families to determine if the participants met the program eligibility criteria and to complete the consent form and demographic profile. Potential participants were asked a series of questions (e.g., what did you have for lunch today) and observed within the home for approximately 10 minutes. If the potential participant satisfied the inclusion criteria, the parent was asked to complete the consent form and the demographic profile. With the parent serving as a witness, the person with a disability was asked to complete the assent form.

Attendance was taken at every session to ensure that participants were being exposed to the classroom material and receiving sufficient time to practice the skills during the soccer sessions. To be included in the sample population, participants had to be present for at least 75% of the baseline and classroom phases and 80% of the entire

program. Jeff was present for 100% of the sessions, John and Billy were present for 96% of the sessions, Jackie was present for 93% of the session, and Tony was present for 89% of the session. All absences were explained by illnesses that also caused them to be absent from school on the day of the session.

Instrumentation and Data Analysis

Qualitative and quantitative data were analyzed in order to determine if participants developed, generalized, and maintained the social skills. In order to minimize the expectancy effect on the part of the primary researcher, all data were analyzed by at least three people. The data gathered with the different instrumentation were also analyzed as a whole. Therefore, conclusions on skill improvement were not considered significant unless skill improvement was seen in at least two of the three instruments.

Demographic profile. Parents were asked to report participant age, sex, disability, extent of participation in extra curricular/sports activities, and experiences with social skills training in the past. Parents also provided information about their age, experiences teaching social skills to their children, and highest level of education.

Interviews with parents. Parents were interviewed before the program started (pre-baseline), at the completion of classroom phase (post-classroom), at the completion of the soccer phase (post-soccer), and five weeks after the intervention was completed (post-retention). During the interviews, parents were asked to reflect on the child's social interactions with family members, people they know in the community, people in school, and strangers. The term community members refer to people who are not family members or friends, but are known by the participant. Examples of community members include religious

leaders, teachers, family acquaintances, and bus drivers. Parents were also asked to discuss their thoughts on the usefulness of the *Parent Supplemental Activities Packet* in teaching social skills to their children. Other questions focused on parents' and participants' overall opinions of the program.

All interviews were transcribed verbatim and analyzed using the procedures recommended by Patton (1990). Four researchers independently analyzed the data using axial coding. Subsequent discussion led to a consensus about the higher order and lower order themes in the data, with consensus defined as agreement amongst at least three of the four researchers.

Alexander Adaptation of Skill Rating Form. The Alexander adaptation of Baker's Skill Rating Form (2003) was completed by the parents before each interview (baseline, post-classroom, post-soccer, and retention). Parents were asked to rate the participant's use of eye contact, contributing relevant information and turn taking on a scale of 1-5 where #1 represents that the "participant almost never demonstrates the skill" and a score of #5 indicates "participant almost always demonstrates the skill". Parents were told to record a "not applicable" if they did not know how to rate their child's skill level in that domain. Parents were also invited to make open-ended comments about the participant's acquisition of social skills.

The Alexander Adaptation of Skill Rating Form for parents was analyzed using visual comparison. To determine if the participant had generalized the skill to another setting, the participant's reported score for skill attempts that occurred during the baseline of the program was compared to the reported score of skill attempts that occurred during post-soccer. The participant's post-soccer score was also compared to the score given

during the retention phase to determine if the participant had retained the social skills. A change of one level was considered clinically significant because it represented a change in social skills that affected the person's interactions with others and could improve the person's quality of life.

Observation Skill Rating Form. The Observation Skill Rating Form was used to judge the participants' social interactions while playing soccer. Each observation period was 70 minutes long. The participants were observed for the four days of baseline, two days post-classroom, and two days post-soccer. Every time a participant had a social interaction, observers recorded the occurrence, persons involved in the intervention, and the quality of the targeted social skills behaviors. The quality of each demonstrated behavior was based on a 3-point scale consisting of zero, minus, and plus signs. A zero sign indicated that the participant did not attempt the appropriate behavior or that the correct behavior was unrecognizable. A minus sign signified that the skill attempt represented a beginning level or emerging level of skill proficiency. A plus sign signified that the participant demonstrated a functional and proper use of the skill. A notes column was used to record specific comments about skill acquisition and demonstration.

There were two observers. Each observer was responsible for observing two participants simultaneously. In order to ensure inter-observer agreement, the observers participated in a training period before the start of the program where they observed a video replication of the program. Observers had to be in agreement 85% of the time with each other and the primary investigator. Inter-observer agreement was calculated as the number of agreements divided by the number of agreements plus disagreements multiplied by 100 (Kazdin, 1982). Inter-observer agreement during training was calculated at 87%.

The Observation Skill Rating Form could only practically be conducted with a small number of participants. Therefore, only four of the five participants were observed. The four participants who were observed were selected based on their disability and level of social skill demonstrated at the onset of the program. The four males were chosen because they encompassed the Down syndrome and autism disability labels and demonstrated the lowest level of social skills at the onset of the program.

Participants were observed for 70 minutes to allow for a detailed description of the participants' behaviors. Given the 70 minute period, the observers were able to see the social interactions throughout the practice and not at one specific interval. This helped to control for interfering problem behaviors that may have occurred for a short interval. For example, if a participant had a fight with his mother on the way to the program, he might not be very social during the first five minutes. However, as practice continues his social skill demonstration could dramatically change. The extended observation period also helped to control for the variation of each session. While each soccer session followed a similar schedule, the opportunities for social interaction did not always occur at the same time. Different activities provided different social opportunities. Therefore, the observers watched for the entire 70 minutes to ensure that their observations were not limited by a specific activity where participants might not have the opportunity to socially interact with others.

Visual inspection was used to analyze the data gathered on the Observation Skill Rating Form. The researchers calculated the total number of social skill attempts recorded for each skill (eye contact, turn taking, contributing relevant information). The data for each social skill was then sorted into three separate *skill levels*: (a) functional and

proper use of the skill; (b) beginning or emerging skill level; and (c) no attempt at skill.

The researchers were focused on the change of skill level and not in the change of skill attempts. Therefore, the following formula was used to calculate the percentage of

correct skill attempts: $\% \text{ correct skill} = \frac{\text{number of correct attempts}}{\text{total number of attempts}} \times 100$. This formula

was also used to determine the percentage of developing skill attempts and skill attempts that did not occur. These percentages were then graphed. In order to evaluate the

effectiveness of the intervention, the mean percentage of skill attempts from each phase (baseline, post-classroom, and post-soccer) was calculated, graphed, and visually

analyzed. The change in mean percentage of skill attempts from baseline to post-soccer was also calculated. When analyzing the Observation Skill Rating Form, a 5% change in the mean remember skill attempts from one time period to another was considered

clinically significant. The researchers chose 5% based on the rationale that a 5% increase in behavior would lead to more positive social interactions. An increase of less than 5% could be due to observation bias and error. The decision was also made based on recent visual analysis literature (Kazdin, 1982).

Results

Tony

Tony is a 14 year old boy with Down syndrome. Though Tony is verbal, his speech is very difficult to understand. His utterances usually consist of 1 to 2 words, and he relies a great deal on hand gestures to communicate. Tony performs most activities of daily living independently and understands verbal instructions very well. He enjoys Harry Potter and often helps his father with landscaping. At the start of the program, he demonstrated some inappropriate social interactions such as tickling people in the

community and hugging strangers. He also tended to shy away from social interactions. Before participating in S³, Tony had not participated in any after school or sports programs, though he played basketball with his father. Tony lives with his father, stepmother, and two significantly younger siblings. His stepmother, Laura is his primary caregiver. She is 38 years old, has a high school degree, and works out of the home as a project manager. Due to illness, Tony was only observed three times for baseline data collection.

Tony demonstrated a significant improvement in all three target skills (Figure 2). From baseline to post-soccer, Tony increased his ability to correctly demonstrate turn taking by 18.2% and increased his demonstration of undeveloped turn taking by 22.1% (Table 9). He decreased the percentage of time he did not attempt to take his turn by 14.5%. Tony also generalized his ability to take turns. On the Parent Skill Rating Form, his mother reported a one level increase when interacting with family, community members, and strangers (Table 13). When interacting with family, Tony went from “sometimes” taking his turn to “often taking his turn” and when interacting with community members, he went from “often” taking his turn to “almost always” taking his turn. Five weeks after the completion of the program, Tony maintained his improvement in his turn taking skills.

Tony also showed a clinically significant increase in his ability to make eye contact. Based on the observation data he improved his ability to demonstrate eye contact correctly by 7%, though he increased the percentage of attempts that he did not make eye contact by 5.3%. However, Tony did not generalize or maintain the ability to make eye contact. Tony’s mother reported that his ability to maintain eye contact while in a

conversation decreased when interacting with friends, people in the community, and strangers. When comparing his baseline score to his post-soccer score, Tony showed a one level decrease going from “often” making eye contact to “sometimes” making eye contact. The decrease in eye contact performance was not reported during the retention phase. Tony’s mother reported that he had returned to this baseline skill level of making eye contact “often”.

However, Tony did generalize and retain the ability to stand at an appropriate distance when conversing. Standing at an appropriate distance was a skill that was incorporated into the making eye contact lessons. Laura reported that when interacting with friends and family, Tony went from “almost never” standing at the appropriate distance to “almost always” standing at an appropriate distance. When interacting with people in the community Tony went from “seldom” standing the appropriate distance to “almost always” standing the appropriate distance. Five weeks after the completion of the program, Tony had maintained his ability to stand at an appropriate distance in all domains.

Tony also improved, generalized, and maintained his ability to contribute relevant information to the conversation. His ability to contribute relevant information correctly during the program increased by 12.6%, and the percentage of times that he did not contribute relevant information decreased by 16.4%. Based on the one level increase reported on the Parent Skill Rating Form, Tony generalized his ability to contribute relevant information when talking with family and friends. At baseline Tony “sometimes” stayed on topic in a conversation, but at the post-soccer phase he was “often” staying on topic. While Tony maintained his ability to stay on topic with friends,

five weeks after the completion of the program Tony had returned to his initial skill level when interacting with family members.

By the completion of the program Tony had improved his ability to maintain conversations with others. When interacting with people in the community he demonstrated a two level increase on the parent rating form and a three level increase when interacting with strangers. In the post-classroom and post-soccer interview Laura mentioned that “he has been socially interacting with his siblings without having to be prompted by us. Such as, you know saying good morning, responding to Andrea [younger sister] when she talks to him, and just initiating play with the baby a lot more” (post-soccer). Laura reported that this increase in social interactions was retained. In fact, his mother reported, “we’re still seeing an increase in him helping with them [his siblings] and playing with them. If he sees that they need something, he’ll take it upon himself to go get it for them, which he never, he never used to do that” (retention).

At the retention phase Tony had also decreased frequency of hugging strangers. Tony’s mother stated, “If I’m outside talking to a customer, he’ll come out and say hi, and put his hand out, and shake his hand. It used to be he’d run out there and just hug them all, but he’s backed off from that” (retention).

In summary, Tony developed each of the target social skills, generalized the target skills to different domains, and maintained most of his skill development. He also improved his ability to maintain a conversation and greet people appropriately.

Jeff

Jeff is a 15 year old boy with autism. Though Jeff is verbal, he often demonstrates echolalia. He also tends to use self-stimulating behaviors when he is

excited or frustrated. He is a competitive young man who enjoys playing video games and watching Star Wars. At the beginning of the program, Jeff had a difficult time making eye contact with others, listening to conversations that were occurring around him, and waiting his turn to speak in a conversation. He had a tendency to hug strangers and attractive young women. Jeff had participated in Special Olympics swimming and bowling before participating in S³. He was also active in his church. Jeff lives with his mother, Kathy, though he occasionally spends time with his father on the weekends. While Jeff has numerous caregivers including an aide, his grandmother, and his speech pathologist, his mother is the primary caregiver. Kathy is 47 years old, has completed her associates degree, and works as a nuclear medicine technologist.

Jeff's mother reported a large amount of "not applicable" responds on the Parent Skill Rating Form (Table 6). She also changed the rating scale recording numbers by reporting numbers such as 2.5 and 3.5 rather than whole numbers. Because of the large quantity of "not applicable" and the misuse of the scale on responses to the Parent Skill Rating Form could not be interpreted. It is unclear why Kathy did not complete the Parent Skill Rating Form as requested. She appeared to be the most dedicated parent to the program, providing weekly letters to the primary investigator where she would elaborate on Jeff's progress. She also provided detailed information within the interviews and would talk with the primary investigator at least once a week to see how Jeff was doing in the classroom and soccer portion of the program.

Jeff's largest improvement in skill development was his ability to contribute relevant information (Figure 2). From baseline to post-soccer, Jeff showed a 12.7% change in his ability to correctly contribute relevant information to a conversation (Table

10). The percentage of times that Jeff demonstrated undeveloped attempts at contributing relevant information decreased by 17.1%. Jeff generalized his ability to contributing relevant information in a variety of domains. During her post-classroom interview, Kathy talked about how Jeff was now going up to strangers that looked interesting to him and starting a conversation with them based on their appearance. She gave an example of how a man looked liked Santa Claus, and so Jeff walked up to him and started talking about Santa Claus. Kathy also noted that he is not only initiating more conversations, but also focusing on one topic in conversations. For example, “like if he wants to talk about, you know, the bad guys in a Star Wars either game or movie...he’ll relate that to other bad guys in a movie” (post-soccer). Jeff’s teachers had told his mother that he is making more appropriate on-topic comments in school as well. Five weeks after the completion of the program, Jeff’s mom reported that he had retained his ability to contribute relevant information.

Jeff also increased his abilities to make eye contact. He increased his ability to correctly make eye contact by 7.5%. While his percentage of undeveloped skill attempts in eye contact decreased, the percentage of attempts that Jeff did not make eye contact increased by the completion of the program. Kathy reported in her interviews that Jeff was improving the amount of times he made eye contact at home. During the retention interview she reported that Jeff had not only retained the skill, but was continuing to improve on his performance. She stated, “You know what, I think he's actually increased because even his speech pathologist, said the thing he's noticed is that Jeff’s eye contact has increased. So that's the biggest thing that he's seen is an increase in eye contact” (retention).

Within the program, Jeff also showed an increase in his ability to take turns in a conversation. He increased his correct turn taking by 6.9% and decreased the number of undeveloped skill attempts by 16.1%. However, Jeff also increased the number of times that he did not take his turn by 9.3%. Unfortunately, Kathy did not comment on turn taking during the interviews, so it is unknown if he generalized or retained the skill.

Kathy also reported that he showed improvements in social skills that were not targeted in the program. At the time of the post-classroom and post-soccer interviews, Jeff was greeting people in the community and strangers in an appropriate manner. His mother stated, “even tonight at catechism he went all the way around the room and greeted everyone, gave a handshake to everyone” (post-classroom). Kathy also reported that he had become more verbal at home and in school. She stated, “his utterance length is getting a little bit longer, he’s using more language to get requests as opposed to kind of more physically directing you to where he wants to be” (post-classroom). Lastly, she reported that at home he has started to “chain concepts together and then tell me those things, so that is like a huge change!” (post-soccer). She reported that he would combine two or three concepts together and then report them to her as a statement. During the retention interview Kathy reported that he had retained all of these non-targeted social skills.

In summary, Jeff improved on all three target skills. Jeff generalized and maintained contributing relevant information and eye contact to different domains. It is unknown if he generalized and maintained turn taking. He also developed, generalized, and maintained positive social skills that were not targeted in this program.

Billy

Billy is an 18 year old male with Down syndrome. While Billy likes to discuss wrestling and children's television shows such as Drake and Josh and Sponge Bob Square Pants, he tends to avoid social interactions with people. When at home, Billy primarily stays in his room where he watches television or listens to music. At the start of the program, Billy did not make eye contact while conversing with others. He would angle his body away from the person he was talking to and look directly at the ground. He did not contribute information to the conversation unless he received a direct prompt. A prompt would usually result in a one to two word response that Billy would mumble while looking at the ground. Before participating in S³, Billy had participated in bowling and basketball through his school. He lives with his mother, Sandy, who is 50 years old. His siblings, nieces, and nephews are often at his home. His mother has not completed high school and reports her occupation as a "caregiver".

Billy showed a clinically significant increase in his ability to take turns (Figure 2). His ability to correctly take turns during a conversation increased 8.1% while his demonstration of undeveloped turn taking attempts decreased 11.4% (Table 11). His mother reported on the Parent Skill Rating Form that his ability to take turns when interacting in all domains increased two levels (Table 7). Billy went from "almost never" taking turns to "sometimes" taking turns. Five weeks after the completion of the program, his mother reported that he not only retained his ability to take turns, but had shown further improvement. Billy went from "sometimes" taking turns at the completion of the program to "almost always" taking turns in all domains.

At the completion of the program, Sandy reported that while he was taking turns, he also had started talking too long when interacting with people in the community and strangers. He went from “sometimes” talking too long to “often” talking too long. At retention, she reported that he was continuing to show an increase in rambling when talking to people in the community and strangers. However, when interacting with family and friends, she reported that five weeks after the completion of the program Billy’s turn taking was one level lower than when he initially started the program.

Billy also showed an improvement on his ability to contribute relevant information correctly, though some of the findings were not clinically significant. He increased the percentage of times he contributed relevant information correctly during the program by 3.3% and decreased the percentage of times he did not contribute relevant information by 2.0%. However, Sandy reported a clinically significant change in his ability to demonstrate the skills in other domains. He went from “almost never” introducing a topic of interest to “sometimes” introducing a topic of interest when interacting with family, friends, community members, and strangers. When looking at how often he stayed on topic, he showed a three level increase in all domains. Billy went from “almost never” staying on topic to “often staying on topic”.

There are conflicting data on whether or not he retained his ability to contribute relevant information five weeks after the completion of the study. Sandy reported that he was still introducing topics of interest “sometimes”. However, when interacting with family and friends he decreased one level, going from “often staying on topic” to “sometimes” staying on topic. When interacting with people in the community and strangers he went from “often stays on topic” to “seldom” stays on topic. Even though

there was a decrease in his ability to stay on topic in all domains, Billy's retention performance level was still higher than when it was measured at baseline. Before the start of the program Billy "almost never" stayed on topic.

Within the program, Billy decreased in his ability to make eye contact correctly by 9.8%. When comparing baseline to post-soccer data, the percentage of times that Billy did not make eye contact increased by 24.3%. However, Sandy reported an increase of skill level. Billy's ability to maintain eye contact while conversing with family members and friends increased 2 levels going from "sometimes uses" to "almost always uses". Sandy elaborated on his ability to make eye contact in one of her interviews. She stated, "...normally he doesn't really look at people when he talks to them. But he is bringing that more into things" (Sandy). His mother also reported that Billy had a one level increase in his ability to maintain an appropriate distance when interacting with family and friends, and a two level increase when interacting with strangers. While Billy maintained his ability to maintain an appropriate distance, on the Parent Skill Rating form his mother reported that he returned to his baseline level of eye contact.

Sandy also noted an increase in his ability to maintain a conversation, particularly with people in the community and strangers. When interacting with family and friends Billy went from "sometimes" maintaining a conversation to "often" maintaining a conversation. With people in the community and strangers he went from "almost never" maintaining a conversation to "often" maintaining a conversation. Sandy commented on his contributions to conversations during her interviews as well. She stated, "he's more interactive with people" (post-classroom), "...instead of sitting back and just watching,

he actually will get up and start participating more” (post-soccer). Billy was also maintaining a conversation when he was in the community. “Sometimes when we are out and about, he’ll just be in the background, quiet and just fooling around. But now he actually interacts and joins in on the conversation more” (post-soccer). During the retention interview, Sandy mentioned how Billy was still maintaining conversations. She said, “He has improved on his conversations, because before he would half ass [sic] talk about something, now he actually wants to get in to more deep of a conversation about it” (retention).

In summary, Billy improved in all skills, though the observation data only supports a clinically significant improvement in turn taking. He retained his ability to take turns in a conversation, but did not retain his ability to contribute relevant information. It is unclear how much of his ability to maintain eye contact was retained. Billy also developed and maintained his ability to maintain a conversation in all domains.

John

John is a 24 year old man with Down syndrome and attention deficit hyperactivity disorder. John is a very talkative young man. He is comfortable approaching people in the community as well as strangers. He enjoys talking about wrestling, Jackie Chan, and food. Before the start of the program, John tended to dominate a conversation while also contributing irrelevant information. He also made sexually offensive comments toward young women. Before enrolling in S³, John had participated in a variety of Special Olympic sports including poly hockey, basketball, and bowling. While he had never participated in a social skills training program, he was currently participating in a school job training program where instructors discussed how to answer interview questions.

John lives with his step mother Martha. John's grandmother and brother (who also has an intellectual disability) are sometimes in the home, though they do not permanently reside with John and Martha. John's nephew and older sister also interact with John on a daily basis. Martha is 50 years old, has completed her associates degree, and reported her occupation as a caregiver.

Based on the observation data, John did not show a clinically significant increase in any of the targeted skill levels (Figure 2). In fact, the percentage of times that he correctly demonstrated the targeted skills decreased. While the observation data did not show that John developed his social skills, his mother reported in her post-soccer interview that, "Definitely the activities... that he's participating in at class [have helped him learn]..." (Martha, post-soccer). Through her interviews and Parent Skill Rating Form she also reported that he showed an increase in his ability to perform the targeted skills in different domains.

John's ability to take turns correctly during the program decreased 4.3% (Table 12). The percentage of times he demonstrated an undeveloped level of turn taking only increased by 1.4%. However, John's mother reported an increase in his ability to take turns while interacting with family, friends, and community members (Table 16). His ability to take turn when interacting with family and friends went from "seldom" to "often" and his ability to take turns with community members went from "sometimes" to "often". John also showed a decrease in the amount of times that he demonstrated the undesirable behavior of dominated conversations when interacting with family, friends, people in the community, and stranger. He went from "almost always" talking too long to "sometimes" talking too long. John's mother reported that five weeks after the

completion of the program, he had retained his ability to take turns. While she reported a one level increase in the undesirable behavior of dominating conversations, she commented in the interviews that “he says, ‘I’m rambling’ he’s aware that he sometimes talks nonsense and he’ll say I know I am rambling and I need to work on that. He’s aware...”. Therefore, while he was not always applying the skill, at retention he was still recognizing when John was dominating the conversation.

Based on the observation data, John decreased his ability to correctly make eye contact correctly by 3.7%. However, in the post-soccer interview, John’s mom noted that “he has said, ‘I need to look at you.’ And he’s aware of our bubble space [maintaining appropriate distance], and he’s just made a couple of comments to me where he’s aware of what he’s learning, which is very new for John... There’s an awareness of now of eye contact, volume of his voice, topics, and he talks about it” (post-soccer). On the parent rating form, John’s mother reported that his ability to demonstrate appropriate eye contact in all domains decreased from baseline to post-soccer by one level. He went from “often” making eye contact to “sometimes” making eye contact. At the same time, his ability to maintain appropriate distance with family, friends, and strangers increased from “often” to “almost always”.

On the Parent Skill Rating Form, John’s mother reported that five weeks after the program was complete, John was making eye contact as frequently as he did at baseline. However, in her interview John’s mom stated that “He’s very good about that [making eye contact], he’s conscious of it and he thinks of it and he also does it. John’s mother also reported that his demonstration of appropriate distance with family, friends, and community members decreased from “almost always” to “often”.

John's ability to contribute relevant information while in the program decreased 2.0%. However his mother said at home John was "more aware of conversations, and the importance of staying on topic..." (post-classroom). She stated that he was coming "back with stories from school about what's been going on, people that he's talking to. He seems to have more information than he used to have, at least he's sharing about it with me" (post-classroom). On the Parent Skill Rating Form, John's mother reported an increase in his ability to contribute relevant information. During conversation with family, friends, community members, and strangers he went from "seldom" staying on topic to "often" staying on topic. His ability to introduce topics that are of interest to others when conversing with family members and people in the community went from "almost never" to "sometime". Five weeks after the completion of the program, John's mother commented on how "Lately he is more conscious of the topics he is talking about. Which means he is giving it thought which I am glad because that is something he didn't often do is to think about if it is an appropriate topic... He's actually making thoughts and adding to the conversation." On the Parent Skill Rating Form she reported that he was continuing to improve in his abilities to introduce topics of interest in all domains. Therefore, when compared to the baseline data, John had increased his ability to contribute information of interest to others by three levels when interacting with family and people in the community and one level when interacting with friends. However, at the retention phase his ability to stay on topic decreased from "often" to "sometimes."

Lastly, John's mother reported that at the completion of the program, John was acting more appropriately when in the community, "he's doing less inappropriate conversations, like wolf whistle and hoots at girls" (post-soccer). He retained this ability

five weeks after the completion of the program. She stated, “he still needs reminders, but he's aware of it, and I think that that is growth” (retention).

One possible explanation for the decrease in John’s observation scores could be due to behavior issues. As John became more comfortable with the environment and staff, he started demonstrating an increase of inappropriate behaviors. He had difficulties following instructions and staying on task. He would often instigate Billy to fool around with him, resulting in inappropriate and rude behaviors from both participants. The observers made numerous notes about the inappropriate behaviors the two boys demonstrated, and how John in particular was struggling to remain focused. These maladaptive behaviors most likely affected his observation scores.

In summary, it is difficult to determine the extent of development that John experienced. It appears that he improved his ability to make eye contact, take turns, and contribute relevant information. John’s ability to contribute relevant information and to take turns was developed and was generalized to other domains. However, while John has aware of making eye contact, he was not applying the skill consistently in any domains. By the completion of the program, John had also decreased some of his inappropriate behaviors towards young women.

Jackie

Jackie is a 16 year old young woman with an emotional impairment and a learning disability. She is a very social young woman who enjoys interacting with peers. In general, she is a pessimist who seeks social attention by telling people stories in order to create pity. She is enthralled with Hannah Montana and Tinker Bell. Before the start of the program, Jackie tended to dominate conversations and had a difficult time taking

turns. She also would interrupt conversations with irrelevant information. Before S³, Jackie participated in Special Olympics bowling and swimming, as well as after school clubs such as choir. Jackie lives with her mother, step father, and younger brother. Her mother, Amanda, is her primary caregiver. Amanda is 44 years old, has completed high school, and works as a technician.

Observation data were not collected on Jackie. Therefore, observations about Jackie's development of social skills are based only on her Parent Skill Rating form and parent interviews. People must first learn a skill before they can generalize it to another environment. Therefore, if Jackie's mother reported that she is generalizing the skill, it can be assumed that she learned the skill.

Jackie showed an improvement on her ability to take turns. Jackie's mother commented on the change in turn taking that she had observed in the community. She gave the example, "we ran into some friends at the grocery store, and instead of her trying to take over the conversation, she waited her turn when they talked to her..." (Amanda, post-soccer). She also commented that Jackie had become more patient waiting her turn at home. She stated, "she's not as impatient as she used to be, she used to be really impatient...and now she knows she has to wait her turn" (Amanda, post-classroom). These comments were supported by the reported frequency that Jackie talks too long in a conversation. On the Parent Skill Rating Form, Jackie decreased the amount of times she talks too long from "often" to "sometimes" (Table 17). However, Jackie's mother also reported on the Parent Skill Rating Form, that from baseline to post-soccer, Jackie decreased her ability to take turns from "often" to "sometimes". At retention, Jackie had retained her decrease in dominating conversations. Her mother

reported that “she has retained it [turn taking]... like when we have company, and they’re talking, she has her stories to tell. And she sits there and fidgets because she wants to get it out, but she waits” (retention).

Jackie did not show an improvement in her ability to make eye contact. However her ability to maintain an appropriate distance when talking with family, friends, and people in the community did increase one level. She went from “sometimes” maintaining appropriate distance to “often” maintaining appropriate distance. Jackie retained her ability to maintain an appropriate distance five weeks after the completion of the program.

From baseline to post-soccer, Jackie’s ability to contribute relevant information to a conversation did not change in any domains. During retention her mother reported that Jackie had not changed her ability to stay on topic, but she had increased her ability to introduce topics that were of interest to others. Jackie went from “sometimes” introducing topics of interest to “often” introducing topics of interest.

In summary, Jackie did not show a significant development in making eye contact or contributing relevant information. Her mother reported that she had improved on her ability to take turns, though the information presented on the Parent Skill Rating Form sometimes conflicted with the information presented in the interviews.

Discussion

The results of this study suggest that Tony, Jeff, John, and Billy developed social skills as a result of S³. By the completion of the program, the four male participants showed clinically significant increases in the targeted social skills. These participants also generalized and maintained the social skills they developed in the program. Though

observation data did not always show clinically significant levels of improvement, parent interviews and reports from the Parent Rating Form suggested positive changes in performance. In order for participants to have generalized a positive change in performance, they had to initially learn the social skills. If participants had not learned to the skill parents would not have seen a change in skill performance. As the participants were not actively involved in other social skills programs or new therapeutic programs during the time period of this study, it can be concluded that S³ influenced the development of these skills.

It appears that Jackie improved her ability to take turns. However, based on the lack of observation data and conflicting data that was presented by her mother, it is difficult to make strong conclusions. While Jackie's mother did report in her interviews that Jackie had improved on her turn taking skills in the community as well as at home, her interview data was not always supported by the reports in the Parent Skill Rating form. The data were also conflicting regarding whether or not Jackie retained the ability to take turns. Jackie did not generalize eye contact or relevant information to other domains though it is unknown if she ever learned the skill. The lack of data collected for Jackie is a limitation of the study related to an insufficient number of staff. Ideally, a 1:1 ratio of participants to observers should have occurred.

One possible explanation for Jackie and John showing smaller increases in all targeted skills could be due to a ceiling effect. John and Jackie correctly demonstrated the targeted social skills much more consistently at baseline than Tony, Jeff, and Billy. Therefore, their room for improvement as a result of the program was much smaller than Tony, Jeff, and Billy. The Parent Skill Rating form probably was not sensitive enough to

detect changes in the skill levels, given the narrow Likert scale. However, while the rating forms didn't always show a change for John and Jackie, both of their mothers reported that they observed a significant change in their children's behaviors. Given that the change was difficult to detect using the Parent Skill Rating Form, and a clinical significance is one which affects the individual's daily life, the parental reports for Jackie and John may be the best representation of skill development and generalization. If the skill change is affecting their daily lives in a positive way, then the goal of the program was met.

On the Parent Skill Rating Form Jackie, Jeff, John, and Tony either decreased in their ability to make eye contact or did not show any change. However, the observation data and the interviews suggest a positive increase in eye contact. This may be due to a limitation of the Parent Skill Rating Form. Throughout the program, parents became more aware of the amount of eye contact that their child made while socially conversing. As parents became more aware of the skill, they may also have become more critical of the skill execution, resulting in a lower score. Whether or not parents' critical natures affected other areas of the survey is unknown. As evaluation is an important component of a successful program, future researchers should focus on creating a more effective survey that parents could use to report their child's social skills performance in different domains. This survey could be used by researchers and practitioners to determine a baseline level of skill and the amount of social skill development that occurs through-out a program.

Parents reported development of social skills that were not specifically taught in the S³ curriculum. Modeling (Baker, 2003; Foss, Auty, & Irvin, 1989), direct instruction



(Elliott & Gresham, 1993; Gresham, 1984), and positive reinforcement (Dietz & Repp, 1973; Zwald & Gresham, 1982) are all effective pedagogical principles that most likely fostered participants' growth of these non-targeted skills. Partners and coaches were careful to model appropriate social skills throughout the program. As a result, participants incidentally learned how to correctly perform the social skills. Participants also witnessed positive benefits that naturally occur with proper skill execution, creating motivation to attempt the skill themselves. When participants demonstrated any positive social skills in the program, such as greeting people when they arrived, they received positive reinforcement. If participants demonstrated a negative behavior, such as wolf whistling, they were redirected with direct instruction on an appropriate behavior.

The success of S³ may be in part to the skilled staff involved in the program. Coaches, partners, and the classroom instructor were all trained in teaching social skills to people with disabilities. They had all coached sports for people with disabilities before the start of S³ and were familiar with the pedagogical principles applied throughout the program. The staff's friendliness may have also affected the participants' receptiveness to instruction and redirection. In order for the program to be successful, participants had to feel comfortable enough to try social skills without fear of ridicule. The skilled staff created a safe environment almost immediately. If staff members are not able to create this atmosphere, a similar program may not be as successful.

A limitation of the study is that parents may have expected their children to improve their social skills, resulting in a potentially biased report of skill development. Parents enrolled their children in the program with the intention to improve the targeted skills. As the program progressed, parents may have reported an improvement in their

child's social skill because they subconsciously expected the change to occur. However, during the interviews parents gave specific examples of skill improvement that they had observed in different settings suggesting that a development of skill occurred. Future studies may consider interviewing other people involved in the participants' lives, such as teachers, to corroborate the parent's reports.

A possible concern of the observation data was the Hawthorne effect.

Interestingly, participants did not appear to notice when the observers were present.

While participants were sometimes distracted by the video camera that taped the sessions, they did not attempt to interact with the observers, did not ask questions about the observers, and did not watch the observers. The staff also noted in their fieldnotes that they did not see a change in the participants' behaviors during the observation period. Because the facility where the intervention took place had a large amount of people coming and going at all times, it is likely that the participants did not notice the observers.

This study contributes to the current body of literature in several ways. First, the findings suggest that social skills can be taught in an interactive environment where participants are having fun. Sports appear to be an excellent venue to help participants develop social skills that they can generalize to other settings. Because sports are a natural setting that do not force the participants to be social, but allows them to choose when they would like to interact with others, sports environments promote skill generalization and maintenance. Secondly, social skills programs can focus on a population that has a variety of disabilities. Many curricula focus on teaching social skills to one specific population such as people with autism spectrum disorders (Baker,

2003). However, this study demonstrates a program in which people with a variety of disabilities can all be taught social skills at the same time. This broad application increases the practicality of social skills sport interventions, as most Special Olympic programs, classrooms, and after school activities include people with a variety of disabilities.

While it is impossible to determine exactly which components of the S³ program led to the participants' skill development of skill, it can be concluded that the combination of direct instruction and extensive practice in a variety of natural settings does lead to skill development, generalization and maintenance. This supports the findings of past research suggesting the need for both direct instruction (Gresham, 1981, 1984; Laushey, 1981) and practice in a natural environment (Barnett, Carey, & Hall, 1993; Christopher, Nangle, & Hansen, 1993; Kohler, Anthony, Steighner, & Hoyson, 2001; McClean & Cripe, 1997; McGee, Krantz, & McClannahan, 1984)). However, the effectiveness of the different components of S³, namely classroom instruction, soccer practice, and parental teaching, need to be examined individually in future studies.

Further research is necessary to determine if other social skills can be taught in a program similar to S³. It is unknown if programs similar to S³ would be successful when working with a larger group of participants; people with a higher level of disability, such as people who are labeled as moderate to severe; and people who have multiple disabilities, such as cerebral palsy and mental retardation. While this intervention could be applied in a Special Olympics program that meets for an extended period of time, researchers should consider incorporating this program into other venues such as physical education classes, after school programs, or camps.

In summary, when young adults who qualify for Special Olympics were taught using the S³ curriculum, they developed and maintained the targeted social skills. Participants also developed other rudimentary social skills that were not directly addressed in the program. Lastly, participants generalized the social skills that they developed in S³ to the home, school, and community. Further research is needed to determine if these findings can be replicated with other social skills, different disability populations, and in different venues.

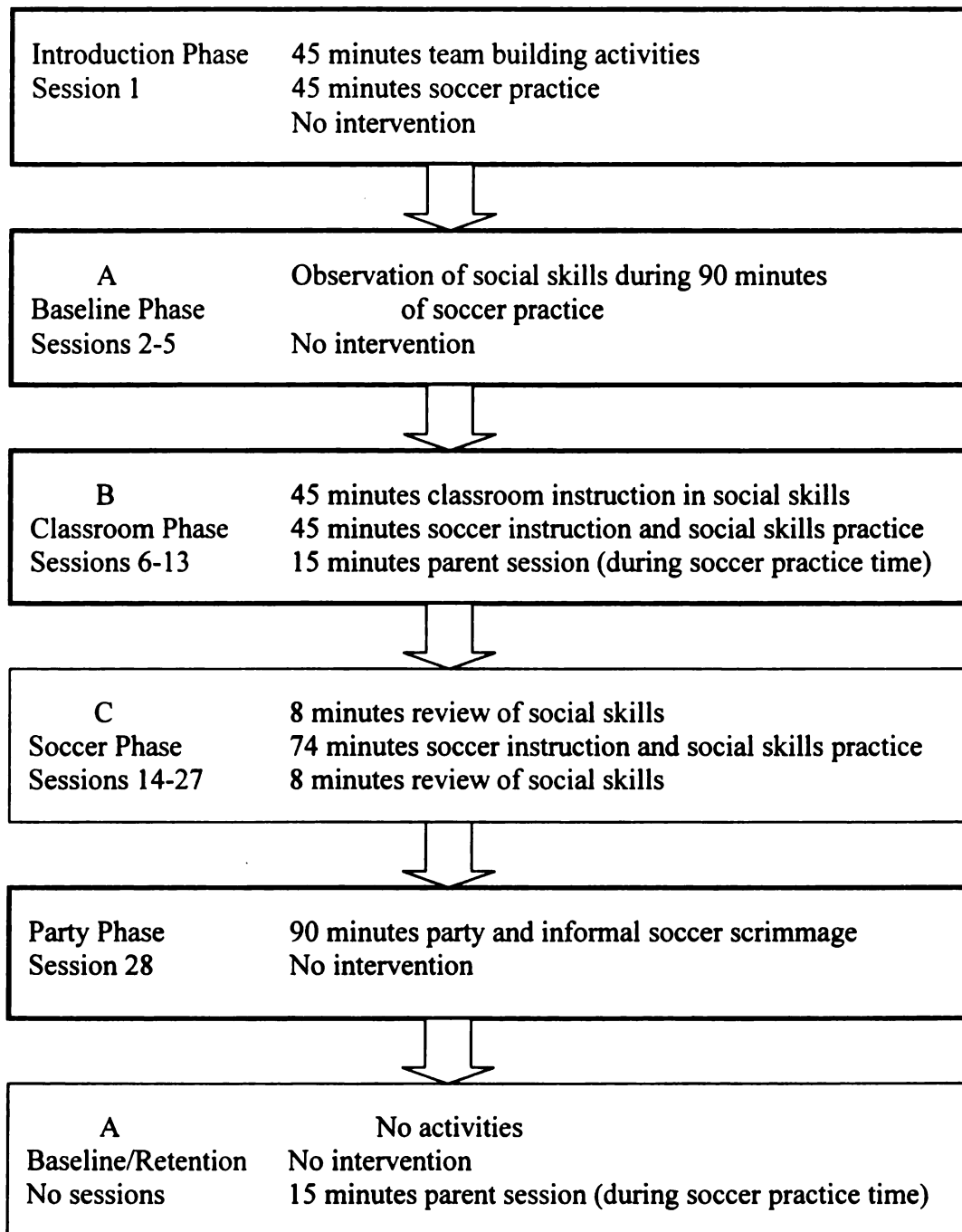


Figure 7. Phases of the S³ program

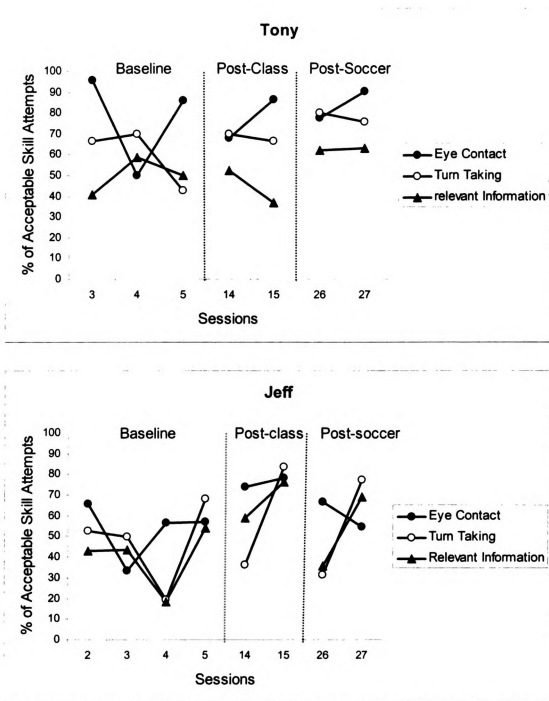


Figure 8. Percentage of acceptable skill attempts demonstrated for eye contact, turn taking, and relevant information

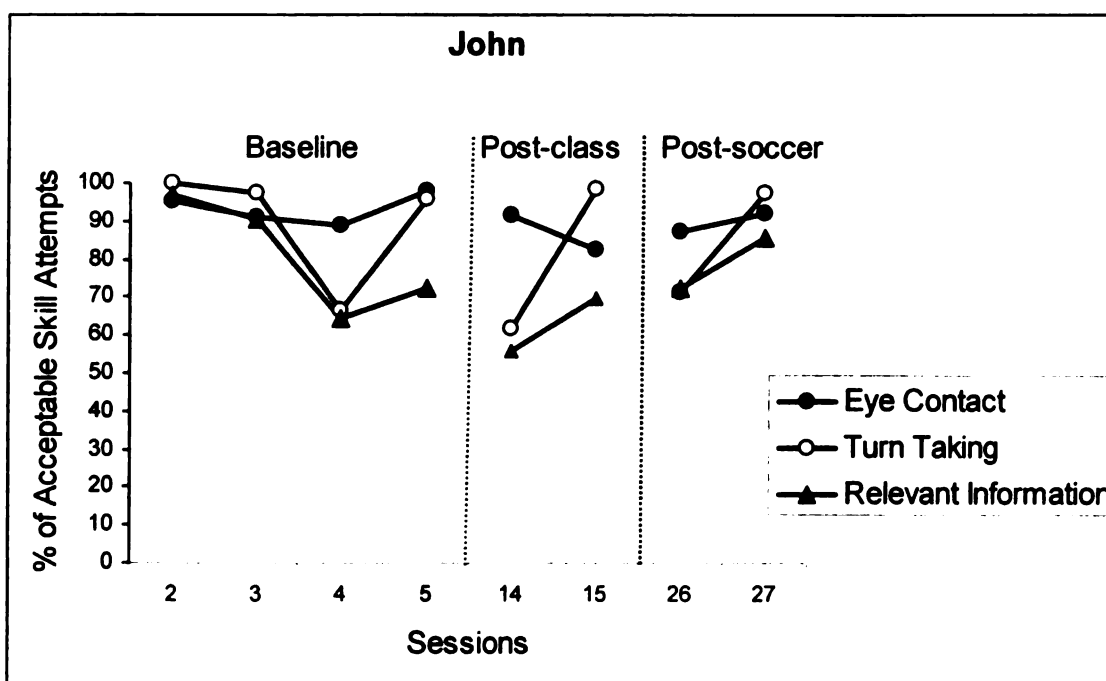
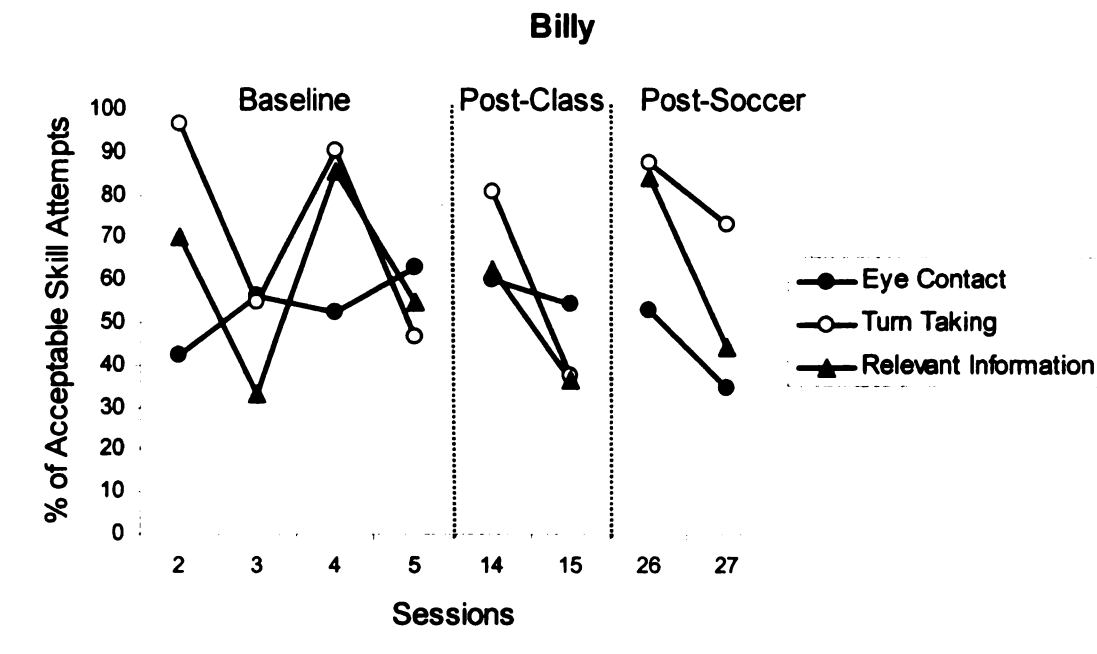


Figure 8 Continued. Percentage of acceptable skill attempts demonstrated for eye contact, turn taking, and relevant information

Table 9

Tony's Mean Observation Scores for the Performance of Targeted Skills

Data Collection Interval for Social Skill	Mean Percentage of Skill Attempts		
	Acceptable	Undeveloped	Did Not Attempt
Turn Taking			
Baseline	59.8	15.1	25.1
Post-Classroom	68.4	5.3	26.4
Post-Soccer	78.0	37.2	10.6
Baseline to Post-Soccer Change	+18.2*	+22.1*	-14.5*
Relevant Information			
Baseline	49.9	14.9	35.1
Post-Classroom	44.7	18.4	36.8
Post-Soccer	62.5	18.7	18.7
Baseline to Post-Soccer Change	+12.6*	+3.8	-16.4*
Eye Contact			
Baseline	77.1	22.2	0.8
Post-Classroom	77.3	13.7	9.1
Post-Soccer	84.1	10.0	6.1
Baseline to Post-Soccer Change	+7.0*	-12.2*	+5.3*

Note. * represents a clinically significant change

Table 10
Jeff's Mean Observation Scores for the Performance of Targeted Skills

Data Collection Interval for Social Skill	Mean Percentage of Skill Attempts		
	Acceptable	Undeveloped	Did Not Attempt
Turn Taking			
Baseline	47.4	19.3	33.3
Post-Classroom	60.1	19.6	20.4
Post-Soccer	54.3	3.2	42.6
Baseline to Post-Soccer Change	+6.9*	-16.1*	+9.3*
Relevant Information			
Baseline	39.6	27.6	10.5
Post-Classroom	67.7	11.6	20.6
Post-Soccer	52.3	10.5	37.2
Baseline to Post-Soccer Change	+12.7*	-17.1*	-26.7
Eye Contact			
Baseline	53.2	28.9	17.8
Post-Classroom	76.0	11.0	13.1
Post-Soccer	60.7	15.3	17.9
Baseline to Post-Soccer Change	+7.5*	-13.6*	+0.01

Note. * represents a clinically significant change

Table 11
Billy's Mean Observation Scores for the Performance of Targeted Skills

Data Collection Interval for Social Skill	Mean Percentage of Skill Attempts		
	Acceptable	Undeveloped	Did Not Attempt
Turn Taking			
Baseline	72.1	20.7	7.3
Post-Classroom	59.2	19.5	21.4
Post-Soccer	80.2	9.3	10.5
Baseline to Post-Soccer Change	+8.1*	-11.4*	+3.2
Relevant Information			
Baseline	60.9	23.6	15.4
Post-Classroom	49.6	25.3	25.6
Post-Soccer	64.2	22.5	13.4
Baseline to Post-Soccer Change	+3.3	-1.1	-2.0
Eye Contact			
Baseline	53.5	37.7	8.9
Post-Classroom	57.2	24.9	18.0
Post-Soccer	43.7	23.2	8.9
Baseline to Post-Soccer Change	-9.8*	-14.5*	+24.3*

Note. * represents a clinically significant change

Table 12

John's Mean Observation Data for the Performance of Targeted Skills

Data Collection Interval for Social Skill	Mean Percentage of Skill Attempts		
	Acceptable	Undeveloped	Did Not Attempt
Turn Taking			
Baseline	90.0	5.9	4.2
Post-Classroom	80.0	14.2	5.9
Post-Soccer	84.3	7.3	8.5
Baseline to Post-Soccer Change	-5.7*	+1.4	+4.3
Relevant Information			
Baseline	80.8	15.3	3.9
Post-Classroom	62.9	26.9	10.3
Post-Soccer	78.8	14.8	6.5
Baseline to Post-Soccer Change	-2.0	-0.5	+2.6
Eye Contact			
Baseline	93.2	6.3	0.6
Post-Classroom	87.6	8.4	4.6
Post-Soccer	89.5	6.2	4.4
Baseline to Post-Soccer Change	-3.7	-0.1	+3.8

Note. * represents a clinically significant change

Table 13
Data Reported on Tony's Parent Skill Rating Form

Survey Question	Base	Post-class	Post-soccer	Retain
Turn Taking				
Takes turns while talking with				
a) family	3	4	4	4
b) friends	4	4	4	4
c) people in the community they know	4	4	5	5
d) strangers	4	4	5	5
Talks too long (rambles on about a topic) when talking with ^a				
a) family	3	3	4	4
b) friends	n/a	3	4	4
c) people in the community they know	n/a	3	4	4
d) strangers	n/a	3	4	4
Relevant Information				
Stays on topic while in conversation				
a) family	3	3	4	3
b) friends	3	4	4	4
c) people in the community they know	4	4	4	4
d) strangers	4	4	4	4
Introduces topics that are of interest to others when talking with				
a) family	3	3	n/a	n/a
b) friends	n/a	3	n/a	n/a
c) people in the community they know	n/a	3	n/a	n/a
d) strangers	n/a	3	n/a	n/a
Eye Contact				
Maintains eye contact during a conversation with				
a) family	4	3	4	4
b) friends	4	3	3	4
c) people in the community they know	4	3	3	4
d) strangers	4	3	3	4
Maintains appropriate physical distance when talking with				
a) family	1	3	4	4
b) friends	1	3	4	4
c) people in the community they know	2	4	5	5
d) strangers	3	4	5	5
Non-target Skill				
Maintains a conversation with				
a) family	2	3	3	3
b) friends	3	3	4	3
c) people in the community they know	2	3	4	3
d) strangers	2	3	4	3

Note. 1= almost never uses the skill; 2= seldom uses the skill; 3= sometimes uses the skill; 4= often uses the skill; 5= almost always uses the skill; n/a= parent could not rate skill

^aDescribes a negative behavior so score should decrease

Table 14
Data Reported on Jeff's Parent Skill Rating Form

Survey Question	Base	Post-class	Post-soccer	Retain
Turn Taking				
Takes turns while talking with				
a) family	n/a	2.5	4	3
b) friends	n/a	2.5	4	3
c) people in the community they know	n/a	2.5	n/a	2.5
d) strangers	n/a	n/a	n/a	n/a
Talks too long (rambles on about a topic) when talking with^a				
a) family	3	n/a	1.5	1
b) friends	3	n/a	1.5	1
c) people in the community they know	n/a	n/a	n/a	1
d) strangers	n/a	n/a	n/a	n/a
Relevant Information				
Stays on topic while in conversation				
a) family	n/a	3	3	3
b) friends	n/a	3	3	3
c) people in the community they know	n/a	2.5	n/a	3
d) strangers	n/a	n/a	n/a	n/a
Introduces topics that are of interest to others when talking with				
a) family	3	3.5	1	3.5
b) friends	n/a	3.5	1	3
c) people in the community they know	n/a	2.5	n/a	n/a
d) strangers	n/a	n/a	1	n/a
Eye Contact				
Maintains eye contact during a conversation with				
a) family	3.5	3	4	4
b) friends	3	3	3.5	3.5
c) people in the community they know	2.5	3	3.5	3.5
d) strangers	n/a	n/a	3	3
Maintains appropriate physical distance when talking with				
a) family	5	4	4	4
b) friends	5	3	4	4
c) people in the community they know	5	3.5	4	4
d) strangers	5	n/a	4	3.5
Non-target Skill				
Maintains a conversation with				
a) family	3	3	3	3
b) friends	2	3	3	2.5
c) people in the community they know	2	2	n/a	2.5
d) strangers	n/a	n/a	n/a	n/a

Note. 1= almost never uses the skill; 2= seldom uses the skill; 3= sometimes uses the skill; 4= often uses the skill; 5= almost always uses the skill; n/a= parent could not rate skill

^aDescribes a negative behavior so score should decrease

Table 15
Data Reported on Billy's Parent Skill Rating Form

Survey Question	Base	Post-class	Post-soccer	Retain
Turn Taking				
Takes turns while talking with				
a) family	1	2	3	4
b) friends	1	3	3	4
c) people in the community they know	1	3	3	3
d) strangers	1	3	3	3
Talks too long (rambles on about a topic) when talking with ^a				
a) family	5	5	5	4
b) friends	5	5	5	4
c) people in the community they know	2	3	3	4
d) strangers	2	3	3	4
Relevant Information				
Stays on topic while in conversation				
a) family	1	3	4	3
b) friends	1	3	4	3
c) people in the community they know	1	3	4	2
d) strangers	1	3	4	2
Introduces topics that are of interest to others when talking with				
a) family	1	3	3	3
b) friends	1	3	3	3
c) people in the community they know	1	2	3	3
d) strangers	1	2	3	3
Eye Contact				
Maintains eye contact during a conversation with				
a) family	3	2	5	3
b) friends	3	2	5	3
c) people in the community they know	2	2	3	2
d) strangers	2	2	2	2
Maintains appropriate physical distance when talking with				
a) family	3	2	4	4
b) friends	3	3	4	4
c) people in the community they know	n/a	4	4	4
d) strangers	2	5	4	4
Non-target Skill				
Maintains a conversation with				
a) family	3	4	4	4
b) friends	3	4	4	4
c) people in the community they know	1	3	4	2
d) strangers	1	3	4	2

Note. 1= almost never uses the skill; 2= seldom uses the skill; 3= sometimes uses the skill; 4= often uses the skill; 5= almost always uses the skill; n/a= parent could not rate skill

^aDescribes a negative behavior so score should decrease

Table 16
Data Reported on John's9 Parent Skill Rating Form

Survey Question	Base	Post-class	Post-soccer	Retain
Turn Taking				
Takes turns while talking with				
a) family	2	4	4	4
b) friends	2	4	4	4
c) people in the community they know	3	3	4	4
d) strangers	n/a	4	4	4
Talks too long (rambles on about a topic) when talking with ^a				
a) family	5	4	3	4
b) friends	5	4	3	4
c) people in the community they know	5	4	3	4
d) strangers	5	4	3	4
Relevant Information				
Stays on topic while in conversation				
a) family	2	4	4	3
b) friends	2	4	4	3
c) people in the community they know	2	4	4	3
d) strangers	2	4	4	3
Introduces topics that are of interest to others when talking with				
a) family	1	3	3	4
b) friends	3	3	3	4
c) people in the community they know	1	3	3	4
d) strangers	n/a	3	3	4
Eye Contact				
Maintains eye contact during a conversation with				
a) family	4	5	3	4
b) friends	4	5	3	4
c) people in the community they know	4	5	3	4
d) strangers	4	5	3	4
Maintains appropriate physical distance when talking with				
a) family	4	4	5	4
b) friends	4	3	5	4
c) people in the community they know	5	5	5	4
d) strangers	3	5	4	4
Non-target Skill				
Maintains a conversation with				
a) family	5	4	5	5
b) friends	5	5	5	5
c) people in the community they know	4	5	5	5
d) strangers	4	4	3	5

Note. 1= almost never uses the skill; 2= seldom uses the skill; 3= sometimes uses the skill; 4= often uses the skill; 5= almost always uses the skill; n/a= parent could not rate skill

^aDescribes a negative behavior so score should decrease

Table 17
Data Reported on Jackie's Parent Skill Rating Form

Survey Question	Base	Post-class	Post-soccer	Retain
Turn Taking				
Takes turns while talking with				
a) family	4	3	3	3
b) friends	4	3	3	3
c) people in the community they know	4	3	3	3
d) strangers	4	3	3	3
Talks too long (rambles on about a topic) when talking with ^a				
a) family	4	5	3	3
b) friends	4	5	3	3
c) people in the community they know	4	5	3	3
d) strangers	4	5	3	3
Relevant Information				
Stays on topic while in conversation				
a) family	3	4	3	3
b) friends	3	4	3	3
c) people in the community they know	3	4	3	3
d) strangers	3	4	3	3
Introduces topics that are of interest to others when talking with				
a) family	3	4	3	4
b) friends	3	4	3	4
c) people in the community they know	3	4	3	4
d) strangers	3	4	3	4
Eye Contact				
Maintains eye contact during a conversation with				
a) family	3	4	3	3
b) friends	3	4	3	3
c) people in the community they know	3	4	3	3
d) strangers	3	4	3	3
Maintains appropriate physical distance when talking with				
a) family	3	4	4	4
b) friends	3	4	4	4
c) people in the community they know	3	4	4	4
d) strangers	3	4	3	4
Non-target Skill				
Maintains a conversation with				
a) family	3	5	4	4
b) friends	3	5	4	4
c) people in the community they know	3	5	4	4
d) strangers	3	5	4	4

Note. 1= almost never uses the skill; 2= seldom uses the skill; 3= sometimes uses the skill; 4= often uses the skill; 5= almost always uses the skill; n/a= parent could not rate skill

^aDescribes a negative behavior so score should decrease

CHAPTER 4:
TEACHING SOCIAL SKILLS THROUGH SPORTS AND HOME PRACTICE: IS
INSTRUCTION PRACTICAL, VALUED, AND ENJOYED
BY ATHLETES AND PARENTS?

**Title: Teaching Social Skills through Sports and Home Practice: Is Instruction Practical,
Valued, and Enjoyed by Athletes and Parents?**

Authors: Melissa G. F. Alexander & Gail M. Dummer, Michigan State University

Running Head: Teaching social skills though sports and home

Rationale for Manuscript 2:

Teaching Social Skills through Sports and Home Practice: Is Instruction Practical, Valued, and Enjoyed by Athletes and Parents?

The manuscript entitled is to be submitted to *Palaestra*. The purpose of this article is to discuss (a) if parents valued the Social Skills and Sports (S³) Program, (b) if participants enjoyed S³, (c) if it is practical to incorporate social skills practice at home. .

Palaestra's main focus is on physical activity and sports for people with disabilities. However, the journal has a history of publishing articles that discuss parental involvement in the education of people with autism and other developmental disorder. Past articles have also focused attention on a variety of different techniques and pedagogical principles that can be used in the physical education setting. The journal is read by a wide range of people including physical educators, special education teachers, researchers, and clinicians.

Palaestra uses the guidelines set by the American Psychological Association. They prefer manuscripts to be 12- 15 pages with abstracts that are around 100 words in length. For an elaboration of submission guidelines, please refer to Appendix O.

Abstract

The Social Skills and Sports (S³) program was created to teach social skills to adolescents, namely turn taking, contributing relevant information and eye contact through participation in a modified Special Olympics program and practice at home. This article will discuss if parents valued the program, if athletes enjoyed the program, and if it was practical to incorporate social skills practice into the family's daily living. Five parents of the athletes enrolled in S³ were interviewed. Parents reported that they valued the chosen social skills. They also valued activities and instructional material presented for at home practice. While participants enjoyed the soccer and social interactions, some participants did not enjoy practicing at home with their mothers. Three of the five families found that they could successfully incorporate the practice of social skills into their activities of daily living.

Special Olympics literature proclaims that “children and adults with ID [intellectual disabilities] who participate in Special Olympics develop improved physical fitness and motor skills, greater self-confidence and a more positive self-image. They grow mentally, socially and spiritually...” (Joseph P. Kennedy, Jr. Foundation, n.d.). However, while research has demonstrated: (a) physical and health benefits associated with a Special Olympics program (Siperstein, Harada, Parker, Hardman, & McGuire, n.d.); (b) the importance of Special Olympics as a social network for individuals with intellectual disabilities (Farrell, Crocker, McDonough, & Sedgwick, 2004); and (c) positive values expressed by parents towards Special Olympics as a tool in developing their child’s social skills (Siperstein, Harada, Parker, Hardman, McGuire, n.d.), there are limited data on whether social skills actually are developed within the context of a sports program such as Special Olympics.

The few studies that have examined social skills development within a Special Olympics setting have found that participants demonstrated improved skills including self-confidence, social competence, self-image, and developed and maintained friendships incidental to their participation (Castagno, 2001; Riggen & Ulrich, 1993). Results of studies in which athletes were asked about their participant motives have revealed that one of the most commonly reported reasons for participating in Special Olympics is to socialize with other people and make friends (Farrell, Crocker, McDonough, & Sedgwick, 2004; Shapiro, 2003; Siperstein, Harada, Parker, Hardman, & McGuire, n.d.). In the Shapiro (2003) study, Special Olympics athletes reported that the optimal environment occurs when coaches provide time for athletes to have fun and interact with their friends.

Given that the Special Olympics environment fosters positive social interactions and that Special Olympics participants value such interactions, Special Olympics appears to be an ideal environment in which to implement a social skills intervention. A Special Olympics program could provide athletes with a natural, fun, safe environment needed to develop and practice the skills. However, existing research relies primarily upon anecdotal reports from parents and Special Olympics athletes. There is very little empirical data supporting the contention that Special Olympics participation causes the development of social skills. Notably, there was no found literature exploring the use of social skills interventions within a Special Olympics setting.

Therefore, the purpose of this research study was to evaluate the effectiveness of a social skills intervention that was incorporated into a Special Olympics environment. The goal of the intervention was to help Special Olympics athletes develop, generalize, and maintain the ability to take turns, contribute relevant information, and make eye contact during a conversation. The intervention, titled the Social Skills and Sports (S³) Program was a 14-week intervention that met for 90-minute sessions twice a week. S³ was designed to be incorporated into a Special Olympics soccer program and was specifically created for this study. It relies on the use of direct instruction of social skills in a classroom setting, followed by social skills practice within a soccer environment. Throughout the intervention, participants continued to practice the social skills at home with help from their parents. Parents were encouraged to practice the social skills with their child for at least 60 minutes each week. Parents were provided with instructions and activities to help them incorporate the social skills practice into family activities of daily living.

The researchers found that young adults with intellectual disabilities successfully developed, generalized, and maintained the targeted social skills as a result of S³ (findings are reported in Chapter 3). However, while it is essential to determine whether or not participants benefit in these ways from S³, it is also important to know whether the intervention was valued by parents, whether parents thought that athletes enjoy the program, and whether the home activities were practical to implement. The S³ program is unlikely to be used and to benefit Special Olympics athletes without affirmative answers to these questions. The purpose of this study is to explore such parent perceptions about the S³ program.

Method

Participants

Participants consisted of five mothers/stepmothers of people with disabilities who resided in a Midwestern city (Table 18). Three mothers were single and two were remarried within the last four years. All of the mothers served as primary caregivers for the person with a disability. The five mothers/step-mothers were between the ages of 38 and 50 years with a mean age of 45.8 ($SD= 5.03$). Their level of education ranged from “did not complete high school” to “completed an associates degree”. None of the mothers had received previous training on how to teach social skills to their children.

The athletes with disabilities consisted of one female and four males between the ages of 14 and 24 with a mean age of 17.4 ($SD= 2.57$). Given the Special Olympics context of this study, they will be referred to as athletes. The disabilities represented by the athletes were autism, intellectual disability, Down syndrome, severe learning disability, attention deficit and hyperactivity disorder, and emotional impairment (some

athletes were diagnosed with more than one disability). The diagnoses were self-reported by the mothers during an initial meeting with the family. However, parents also provided medical documentation required by Special Olympics stating the athletes had a cognitive disability. All of the athletes were verbal and had a mild to moderate level of intellectual disability.

Throughout the entire program, four young adults who did not have a disability served as partners to the athletes. They intermingled with the athletes ala the Special Olympics Unified Sports Programs (Joseph P. Kennedy, Jr. Foundation, n.d.). There were one male and three female partners, who were all 15 years of age. The partners were all current members of a soccer club in the Mid-Michigan area, and they had assisted with a local Special Olympics Soccer team during the previous year.

Social Skills and Sports (S³) Program

The Social Skills and Sports Program (S³) was a 14-week program that met for 90 minutes twice a week in a local indoor soccer facility and conference room. S³ was designed to teach social skills to adolescents and young adults who qualify for Special Olympics. Athletes received instruction on contributing relevant information to a conversation, turn taking in a conversation, and making appropriate eye contact. There were three essential components to the program: classroom instruction, soccer, and parent teaching (Figure 9).

Classroom. The purpose of the classroom phase was to provide athletes with direct instruction on the social skills before giving them the opportunity to practice the skills in a soccer environment. The classroom phase consisted of 8 sessions conducted during the first four weeks of the program. Each session consisted of 45 minutes of classroom activities

where athletes discussed social skills and played games, and 45 minutes of soccer where athletes practiced social skills while participating in soccer activities. While each session varied, the general outline of each classroom period consisted of a brief welcome, a review of the information presented in the previous session, a short presentation of new information, a series of activities to practice the new skill, and a summary/review of the information presented.

Soccer. During the soccer phase athletes were given the opportunity to practice and develop their newly learned skills through natural interactions and planned activities. The soccer phase lasted 8 weeks for a total of 16 sessions. Throughout the soccer practice, structured activities fostered social interaction. For example, while stretching, athletes were encouraged to discuss what they did over the weekend. Some drills were specifically formatted to allow athletes to practice soccer skills while also conversing with a partner. In one activity, athletes were given a bingo sheet that had pictures replacing the number. Athletes dribbled their ball to a coach or partner and initiated a conversation about the images on their board. The first person to discuss five squares in a row won.

Athletes were instructed on soccer skills for a total of 74 minutes each session. The remaining 16 minutes was divided into two 8 minute review sessions. A review session was held at the beginning and end of each soccer practice. During the review, athletes were reminded of the social skills they learned in the classroom, received verbal positive reinforcement for proper demonstration of the skill, and received direct instruction as needed.

Parent Supplemental Activities Packet. On the first day of the intervention, parents received the *Parent Supplemental Activities Packet*. This packet provided a detailed outline of the program including lesson plans for the 8 classroom sessions, a

description of each of the social skills, instructions on how to teach social skills at home, and a list of different activities that could be done at home to help athletes practice the social skills in home and community environments. The activities described in the packet were designed to be incorporated in the family's daily lives and were not meant to interfere with their normal routine.

The activities listed in the packet were intended to be incorporated in the family's daily life. Parents were asked to do the activities with the participants for at least 15 minutes 4 times a week., resulting in at least 60 minutes of practice time each week. They were asked to practice the skills for the 12 week period of the intervention. Along with practice time, parents were asked to reward their athlete when he/she correctly demonstrated the target behaviors or provide direct instruction when the behaviors were not performed correctly.

During the four weeks of the classroom, the student investigator met with the parents for the last fifteen minutes of each session while the participants were playing soccer. In the meetings they discussed how to teach the skills to the athletes, how to use the parent activities, and how to complete a Tracking Your Progress form. Parents were also encouraged to discuss which activities were working well, any frustrations they may be having, or ask questions about unclear information. During the soccer phase, parents were contacted bi-weekly by phone to remind them to practice social skills with their children.

Instrumentation.

Attendance. Attendance was taken at every session to ensure that athletes were being exposed to the instructional material and receiving sufficient time to practice the skills during the soccer sessions.

Tracking Your Progress Forms. Parents were asked to record the time they spent practicing social skills with their child. A Tracking Your Progress form for each week was provided to the parents in the *Parent's Supplemental Activities Packet*. Each week the parents recorded what activity had been done over the past week, how much time was spent on the activities, and the outcome of the activities (e.g., the child liked the activity but struggled to make eye contact). They were also asked to record any modifications that they made to the activity. Parents were required to submit their completed forms the following week. If they did not submit their form, they received a reminder phone call. The interviewer also asked for any delinquent forms when she went to the participant's home for an interview.

The average amount of practice time per week was calculated based on the families' Tracking Your Progress forms. A mean practice time for 3 of the 5 athletes was also calculated. Two of the families did not report their time consistently, making it impossible to calculate their mean practice time per week.

Parent interviews. Parents were interviewed before the program started, at the completion of classroom phase, at the completion of the soccer phase, and five weeks after the intervention was completed. During the interviews, parents were asked to reflect on the usefulness of the *Parent Supplemental Activities Packet* in teaching social skills to their

children. Parents were also asked some questions regarding their overall opinion of the program and what they perceived their child did and did not like about the program.

All interviews were transcribed verbatim and analyzed using the procedures recommended by Patton (1990). Four researchers independently analyzed the data using axial coding. Subsequent discussion led to a consensus about the higher order and lower order themes in the data with consensus defined as agreement amongst at least three of the four researchers.

Staff journals. After every session partners, both coaches and the primary investigator completed a one to two page journal entry that summarized any observations about athletes' demonstration of social skills during the session. The staff discussed the quality of social interactions with the athletes. Staff also reported observations they made during the program such as a positive change towards the goal behavior, a decrease in the goal behavior, frustration demonstrated by the participant when trying to perform a goal behavior, or an unusual approach at a goal behavior. Lastly, staff members were asked to record other thoughts about the S³ program. The journals were sent to an email account specifically created for this project within 48 hours of the session completion.

Journals were reviewed by the primary investigator within 24 hours of receipt. She reviewed each journal entry to ensure the integrity of the data-collection process and the fidelity of the S³ intervention, as well as to address any problems or concerns expressed by the staff. Comments made by the staff within the journals were also used to corroborate statements made by the parents in their interviews.

Results

Was S³ Valued by Parents?

Parental support of child's participation. The strong attendance rate of the athletes demonstrates the extent to which parents valued the program. Athletes were required to attend at least 75% of the classroom sessions and 80% of all sessions in the program. Jeff was present for 100% of the program, John and Billy were present for 96% of the program, Jackie was present for 93% of the program, and Tony was present for 89% of the program. Every absence was explained by an illness that also caused the athlete to be absent from school. If parents did not value the program, it is unlikely that they would not have brought their children on a regular basis.

Selection of social skills. During interviews all five parents reported that the selected social skills, contributing relevant information, making eye contact, and turn taking, were social skills needed by their children. When asked which other social skills should be incorporated into future programs, the parents did not provide any suggestions. It should be noted that parents most likely enrolled their children in S³ because they believed their child lacked the target social skills. Therefore, the parents' opinions about the skills being an appropriate fit for their child may be biased.

Sport context. Parents valued the soccer activities associated with S³ because the sports experience provided athletes with much needed physical activity and allowed them to experience a team atmosphere. Jeff's mother felt that physical activity was an added bonus to the program. She stated, "the physical activity is really, really good for him, there were just a lot of pluses to it...you know this is interaction that has a structured component to it and a little bit of unstructured component to it, so I think it's a win-win"

(post-soccer). John's mother also valued the physical activity. She commented on how John "needs to be busy, with something that's physical activity" (post-classroom).

Tony's mother appreciated that Tony was learning how to be part of a team. She stated, "I think it was kind of a good fit for him to be on a team and have that kind of, to learn to be on a team, because he has never been in a structured activity like that before with other people" (post-soccer).

Integrated setting. Parents felt that including non-disabled partners in the classroom and soccer activities, ala the Special Olympics Unified Sports program, was a valuable contribution to S³. Tony's mom noted that "he's always reacted really well to typical peers, especially older typical peers" (post-soccer). John's mother observed that, "...the people involved, bringing other people without disabilities from the community, it was just excellent; I think the idea is super!" (post-soccer). The integrated setting provided benefits for everyone involved. The teenaged partners without disabilities experienced different sporting interactions, became educated about diversity, and participated in community service which is often required by schools. Special Olympic athletes had opportunities to interact with a variety of people, observe appropriate social skills modeled by non-disabled peers, and practiced their social skills with peers who already had refined their social skills.

Parent Supplemental Activities Packet. All five parents reported they valued the Parent Supplemental Activities Packet, in part because they learned new ways to teach social skills to their child. Four of the five parents reported the material in the packet provided them guidance on specifically what they should do to help their child develop. Amanda discussed how the packet helped her to understand her daughter and how to help

her daughter develop her skills. She stated, "...the packet helped me out a lot to understand more about her, and her needs...It is not like they give us an instruction book to help someone who has special needs" (post-classroom). The packet gave Martha, Laura, and Sandy some direction on how to teach the skills; "you know just giving us some clues as to what you know kind of the next step of what we should work on and ways we can do it" (Laura, post-classroom).

Martha, Amanda, Sandy, and Kathy also discussed how the packet gave them new ideas of activities for practicing social skills. These mothers appreciated the fact that there were a variety of activities to choose from, and that the activities were easy to understand. Sandy discussed how "it does give a lot of ideas, I like it because of that fact...things to do, ways for me and him to interact..." (post-classroom). Martha commented on how she was sometimes "stumped" and she used the packet to get an idea of a new approach. Kathy used the packet to give Jeff's other caregivers ideas about how to incorporate social skills activities into his daily life.

Parents valued the packet so much that they all planned to continue using it after the completion of the program. When asked why she planned to continue using the packet, Kathy said "because those are the skills that he needs to continue on, and we've already seen some gain in his skills, it'd be silly not to do that" (post-classroom). Even though Sandy was not consistently using the packet during the S³ program, she said she planned to use it after the program was complete. When Sandy was asked why she planned to use the packet she responded, "it gives me ideas... it will help him out" (post-soccer).

Both Martha and Laura questioned whether the *Parent Supplemental Activities Packet* was actually helping their sons learn, but they still planned on continued use after the completion of the program. When Martha was asked for an explanation she said,

“Because they are great activities...the list of engaging others to communicate with John, in particular the one where everybody in the family gets a word and puts it on them, then you gotta figure out what word is on you by questions asked, that's just a great activity. And we're trying to pick a family night where we're actually doing an activity that will get John talking about other things ... things that we would like him to talk about” (post-soccer).

Did Athletes Enjoy S³?

Although the athletes were not interviewed, parents were asked about their child's enjoyment of the program. The following information is based on parent reports and staff observations.

Classroom and soccer components of program. All parents reported that their children really enjoyed and looked forward to attending the program. Martha reported that, “John is enthused to go, he looks forward to it. It isn't anything he needs to be reminded of. He would get himself there if he could. Like if it was in the community he would walk to it. He would be willing to get there” (post-soccer). She also stated, “he looks forward to doing it, he's proud of being in it, he has said these things to me” (post-soccer). Tony's mother talked about how happy and excited Tony becomes when he is told he has soccer. She also stated, “when he goes to school on Monday mornings and Wednesday mornings, he tells them that he's got soccer ... he's just been a lot more happy and positive since being involved” (post-soccer).

Kathy reported that Jeff enjoyed S³ so much that “its gonna be really tough for him not to have that when it comes to an end. I think ...there’s gonna be a period of mourning because he really, really, likes it a lot” (post-classroom). Jackie’s mother expressed that “she loves it! It could go year round and she’d be there!” (post-soccer). Billy’s mother noted “everyday he comes home he asks if he’s going to soccer, he just loves going!” (post-soccer).

According to parents, athletes looked forward to the social interactions that occurred during the program. Billy’s mom reported that at home he often spoke about John and the male coach. Amanda felt that one of the reasons that Jackie enjoyed the program so much was because “she’s made new friends that accept her for who she is” (post-classroom). Amanda also talked about how Jackie really liked the time that was set aside at the beginning of each session to share with the team something that happened during the day. While Jeff did not talk to his mother about anyone in particular, his mom reported that he liked “being with everyone” (post-soccer). Jeff’s enthusiasm to interact with everyone was also observed during the program. Before the start of soccer, the observers noted that Jeff made an effort to individually say “hello” to every person on the team when he first arrived at practice. The observers also noted that John, Billy, and Jeff inquired about missing teammates and/or partners. Lastly, the researcher and coaches noted in their journals that John, Billy, and Jackie almost always brought an item that they were eager to show to the group during snack time.

Parent Supplemental Activities Packet. While athletes enjoyed the soccer activities, they did not always enjoy practicing the social skills at home. Some of the athletes did not want to practice the social skills with their parents. Sandy had an exceptionally hard time getting her son to interact with her. Sandy said that “...trying to

get him to interact with me is like butting up against a wall...he'll sit in the living room with me and watch TV and I'll ask him questions about the show. And 75% of the time he'll just ignore me..." (post-classroom). Other parents expressed similar problems during the parent meetings held during the first four weeks of S³. Amanda and Martha both reported that their child did not want to do the activities with them. However, all of the parents found that their child would do the activity with someone else. Sandy revealed that, "I've got the older two girls [Billy's nieces] kinda working with him a little bit. I told them, I said we'll look through the book and see if there's something in there you wanna do with him" (post-classroom). Laura also found that her son was more apt to participate as time progressed, stating that, "he seems to be more willing to engage in activities...it [the game] took a little prompting to get him to do it, but he enjoyed it once we started..." (post-classroom).

Martha and Sandy reported that their children did not seem to like doing the activities in the packet. For Billy in particular, a lot of the disinterest stemmed from not wanting to interact with his mother. When Sandy was asked what Billy disliked about the packet she stated, "just that he has to spend one-on-one time with me doing it" (post-classroom). However, she went on to say that "He don't like doing it. To him it's like homework I think. He's just, 'no'" (post-classroom). Martha stated that "he [John] doesn't seem interested with it. He's not interested in the written stuff, he's interested in the activity of soccer" (post-soccer). Martha suggested that if John was more involved with the actual packet, he might become more interested. She stated, "I think if it was in a pictorial form, something that he could actually contribute to, he might do that. Like even if it was stickers, or Velcro, or something that he could do" (post-classroom).

Kathy also suggested incorporating some more visual aids, particularly for participants who are more visual learners.

Were the S³ Home Activities Practical to Implement?

Because parents were responsible for practicing social skills with their child at home and in the community, it was important to look at the home activities separate from the classroom and soccer components of the S³ program.

User-friendliness of packet. All of the parents reported that the packet was clearly written and easy to understand. John's mom mentioned that "in the beginning I have a little trouble understanding what was expected of me..." (post-soccer). However, "as I glanced over it and read a few parts to John, and told him this is what we were doing and that went with it, it made sense" (post-classroom). Sandy offered a similar opinion, stating that, "it's a really good packet, you guys really did a good job with that, putting that together" (post-soccer). When other parents were asked if the packet was unclear, they gave brief answers such as "nope" (Amanda, post-classroom) or "I don't believe so, no" (Laura, post-classroom). Martha did provide a suggestion to further improve the parent's understanding of the packet. She suggested "making it a check-off, a few checklists that would be easier for parents to actually do... because in the beginning it was hard for me to understand this is what's expected, if I do this, they'll get the information that they need" (post-soccer).

Incorporate into activities of daily living? Four of the five families integrated the practice of social skills into family activities of daily living as requested. These four families not only integrated the activities into their daily lives, but also reported that they preferred practicing the skills in this manner. As Martha said, "we did practice having

conversations, in our normal conversations say at dinner or any place that we are going..." (post-soccer). Laura reported that "we've incorporated some of the activities into kind of our daily things, or when we're doing unstructured activities, we tried to incorporate some of it..." (post-soccer). Kathy incorporated the activities into her daily life out of necessity, stating that "...I don't get a lot of time to do structured time lately over the last three weeks. Most of it has been on the fly, like if we're in the grocery store or driving to go somewhere, or if it just kind of incidentally, so it's been more unstructured that we've kind of used those things ..." (post-soccer).

While parents were encouraged to use the activities in the community as well as at home, some of the families reported that they did not have many opportunities for community practice. When Sandy was asked if she noticed a change in Billy's behavior while out in the community she stated, "not really, we haven't really been that many places" (post-soccer). In her post-soccer interview, Amanda talked about how Jackie was showing great progress when it came to taking turns with people in the community. However, in the post-classroom interview she stated, "...we don't socialize much in the community except for school and home" (post-classroom). She reiterated this point during the interview that occurred five weeks after the completion of the program. While John had a lot of opportunity to interact with people in the community, Martha said she was not with John on those occasions. Therefore she was not able to receive feedback from other people to determine if his skills were developing. She also wasn't in a position to correct John if he was doing the skill incorrectly, or provide him with positive reinforcement for doing the skill correctly.

Amount of time devoted to the practice of social skills. Parents were asked to practice social skills with their children for 60 minutes each week for the duration of the S³ program. Only three parents provided usable data about minutes of practice, and those parents implemented the parent packet activities for an average of 128.56 minutes per week, approximately double the requested time. It is unclear if the other two families completed the amount of requested practice time. They did not return their data sheets consistently (Martha and Sandy each returned only 4 Tracking Your Progress Forms), so their practice time could not be calculated. During the first two weeks of the program, Sandy reported practicing social skills with Nicky for 105 minutes and 65 minutes respectively, but on weeks three and four she reported only 20 and 45 minutes respectively. Sandy also reported in her interviews that she was having difficulties remembering to practice the activities. “I am a creature of habit; I’m not used to doing it. I always look at it and think man I gotta do that, but it doesn’t go any further” (post-soccer). Martha’s four Tracking Your Progress forms (for non-consecutive weeks) showed 5 minutes, 40 minutes, 8 minutes, and 15 minutes of practice time. However, in her interviews, Martha reported that she was practicing the skills with John at home. She stated, “I can honestly say I’ve used it [the packet] weekly...once weekly... I try to do one [specific task out of the binder] a week is what I try to do, and focus on that one...” (post-soccer). In this statement, she reports that while she is doing the activities she is not practicing the skill at the requested frequency.

While three of the parents exceeded the amount of practice time required, they nonetheless reported difficulties incorporating the practice time into their lives. All five parents said numerous times during the interviews that the time commitment was a struggle for them, especially during the last few weeks of the program at the end of the

school year. Amanda said, “it is just fitting it in time wise with all that’s been going on” (post-soccer). Kathy stated, “there’s nothing wrong at all with the parent packet, it’s just unfortunate for me that I’ve hit a stretch that’s been extremely busy...my schedule has just been nuts, so it’s kinda hard to have structured time” (post-soccer).

Recording practice times. Even when families found time to do the social skills practice with their children, they sometimes neglected to record the practice time using the Tracking Your Progress Form. Kathy mentioned that she had a hard time tracking all of the practice time and recording the specific activities because so much of it was done “kind of on the fly, maybe not for the set length of time, but there’s a lot of things that you do incidentally throughout your day” (post-classroom). Martha and Laura corroborated Kathy’s observation, stating that they did a lot of practice that was not a specific activity but was just incorporated into their daily lifestyle, making it hard to record practice time.

In general, all of the families struggled with the Tracking Your Progress Form. Typical difficulties included struggling to keep the data sheets up -to-date and forgetting to submit the information. Martha and Sandy both talked about forgetting to complete and return the forms. Martha tried to improve her ability to record the practice time by picking one activity to do all week. She indicated, “So that’s why I picked one activity and tried to do it a couple of times- to get practice with it for one thing, and to be able to record that we did that practice...but it still didn’t help me...getting the data back to Lissa [investigator]” (post-soccer). Amanda and Laura reported that they struggled to find the time to complete the sheets. Laura talked about how “it’s kinda been a struggle for us with keeping up on doing the log...” (post-soccer). Amanda explained that “I don’t have time to fill it out...I usually write

down and try to keep track of everything on notes then I write down everything at the end of the week..." (post-classroom).

It is important to note the Tracking Your Progress Form was used to confirm that parents were completing the home practice in order to determine program fidelity. However, two parents reported that recording the practice time helped to ensure that athletes were receiving social skills instruction. For Kathy and Laura the packet helped to remind them to work on the social skills with their sons. Laura liked how she was forced to track the activities that she was doing with her son because she was able to see progress and determine how much time they were really spending on the skill development. She felt it helped her to remember to practice the skills, "... for us it kind of puts a focus on what we needed to work on with him, you know just to make him initiate a little bit more and interact more" (post-soccer). Kathy felt the packet made her focus on setting time aside to practice the skills, claiming that "the activities have been good for kind of keeping you on top of working on specific things, maybe a little more frequently than you know what you do day to day...because you set aside a more specific time to work on a skill" (post-classroom).

Discussion

Parents valued the S³ program, selected social skills, home activities, and involvement of partners who do not have disabilities. Based upon the information provided by parents, it can be concluded that athletes enjoyed participating in the classroom and soccer components of the program, and also enjoyed social interactions with the non-disabled partners and program staff. Lastly, it was practical to incorporate social skills practice in

home and community environments, though the some athletes did not appreciate their parents as teachers and did not always enjoy the activities.

The fact that the athletes enjoyed the sports and social activities provided in the soccer environment support the findings of Farrell, Crocker, McDonough, and Sedgwick, (2004) and Shapiro (2003) that people with intellectual disabilities value the social interactions that occur within the Special Olympics setting. It is interesting to note that Jeff valued social interactions with teammates given his autism diagnosis. Jeff's behaviors support the possibility that people with autism spectrum disorder are interested in social interactions despite their seemingly standoffish behaviors (Bacon, Fein, Morris, Waterhouse, & Allen, 1998; Sigman & Ruskin, 1999). However, this conclusion should be made cautiously as only one participant in this study had autism.

Families that presented social skills practice as homework or something that was mandatory appeared to encounter more resistance from athletes than those families that presented the material as a fun game or incorporated it into their daily routine.

Practitioners should encourage parents to make the activities fun, and to incorporate the activities into daily routines without making a point that they are practicing social skills. Not only will this encourage participation, but it will also foster natural practice that is needed for generalization of the skill.

Parents may need to incorporate other people into home social skills practice when their child does not enjoy interacting with his or her parents. While many practioners have suggested that teaching social skills in the home can lead to skill development, maintenance, and generalization (Baker, 1989; Graziano & Diament, 1992; Hager & Vaughn, 1995; Schaefer & Briesmeister, 1989, Sugai & Lewis, 1996), practice

at home may not be feasible for all families. Due to the age of the athletes in this study, it is not surprising parents struggled to elicit social interactions with their children (Czikszenmihalyi, & Larson, 1984). Therefore, other alternatives, such as social skills practice with siblings, extended family members, and community members should be suggested to families. Another way to increase the athletes' enjoyment is to encourage them to record their own progress and practice time. A simple chart with a sticker book could be provided to the athletes for each week. Providing social skills activities book for athletes is another possible way of encouraging them to become more involved in their own learning. The activities book needs to be presented in a fun manner and cannot be perceived by the athlete as homework. If it is presented as homework, participants may resist participation.

Parents in this study valued instruction and ideas about how to teach their children. Parents stated that the packet provided needed information to understand and communicate with their children. Even though parents have been interacting with their children for many years, they may not be aware of the most effective pedagogical strategies. As researchers and practitioners, we cannot assume parents know how to teach and interact with their children. Therefore, as has been previously suggested by Budd (1985), information about disability-specific teaching strategies must be provided to parents when they are asked to teach their children at home.

While all parents reported that they valued the home activities, only three of the five parents used the Parent Supplemental Activities Packet on a regular basis, suggesting that parent values are not a sufficient condition to motivate efforts to teach new skills to their children. Intervening variables such as family dynamics could negatively affect

parent behaviors in this regard. For example, Martha and Sandy are both single mothers who did not have other caregivers for their sons. While both mothers reported their occupation as “caregivers”, they have large time commitments taking care of extended family members and do not have an extensive social network to assist with their child’s skill development. Martha has another son with multiple disabilities who needs extensive care. She also provides care for her mother and grandchildren. Sandy takes care of her grandchildren as well as other children in the community. The time commitments required to care for other individuals puts a strain on the time available for these mothers to interact with their own sons. While Kathy is also a single-mother, she has numerous people who assist with Jeff’s care, including Jeff’s grandmother and father, a hired aide, and a speech therapist. When there was more than one person to help with the practice of social skills, families were able to accomplish the recommended practice time. However, when the support was not there, families struggled to complete the activities. Practitioners should therefore consider family dynamics when asking parents to practice social skills at home.

Even though the purpose of the Tracking Your Progress Form was to determine the fidelity of practice at home, it may also serve an important role for parent motivation and goal attainment. Parents reported that the form reminded them to practice the skills and provided them feedback on their time commitment. By setting goals and tracking their progress parents reported that their motivation and time commitment to the practice increased. This finding is not surprising given the literature regarding the positive effects of goal setting (Vealey, 2005). Therefore, future home programs should contain a method for parents to record their progress. However, further research is needed to

determine the most convenient way for parents to record the information as the parents in this study found the system difficult and time consuming.

In an ideal world, researchers could obtain accurate measures of the quality of parent interactions with their children, as well as the actual amount of practice time. In this study, there was no way to verify if parents were accurately reporting practice time; it was assumed that families were honest in their reports. However, it is possible that parents could have over-reported time for reasons of social desirability or perhaps underestimated practice time due to the possible spontaneous nature of practice. Quality of practice time cannot be judged due to the fact that parents were asked only to report amount of time spent practicing the social skills. Additional data about the extent to which parents provided specific feedback about social skills attempts and praise for correctly performed skills would have been helpful. Similarly, it would be useful to know whether parents provided a good example of social skills for their children to emulate.

In summary, implementing a social skills program into a sports setting and practicing the skills at home is practical. Athletes enjoyed the social skills program and parents valued the information that both their child and they received.

Along with these recommendations, future studies should consider gathering the participant's perspectives about their parents serving as teachers. The data reported on the Tracking Your Progress Form and in the interviews are hearsay from the parents. Further research is also needed to determine the perspectives of different populations. The families that participated in this study came from a lower level of social economic status and the parents had limited levels of education. Three of the five families were also single mothers. Having only one parent to provide social instruction and social

interaction can be very different then the dynamics of a two parent home. The lack of education and financial means may have also created a unique perspective.

Table 18
Description of Athletes and Parents in S³

Athlete Name	Athlete Age	Athletes' Disability	Parent Name	Parent Age	Parent's Education Level
Tony	14	Down syndrome	Laura	38	Completed high school
Jackie	16	Emotional impairment and learning disability	Amanda	44	Completed high school
Jeff	15	Autism and intellectual disability	Kathy	47	Associates degree
Billy	18	Down syndrome	Sandy	50	Did not complete high school
John	24	Down syndrome and ADHD	Martha	50	Associates degree

Table 19

Total Number of Minutes Reported Each Week on the *Tracking Your Progress Form*

	Number of Minutes Reported											Average
	on Tracking Your Progress Form											# of Minutes
	1	2	3	4	5	6	7	8	9	10	11 ^a	
Amanda	150	165	165	90	120	120	120	120	120	120	NR	129.0
Laura	85	NR	85	180	120	90	120	180	105	NR	NR	120.6
Kathy	150	NR	170	85	60	185	150	155	145	125	25	136.1
Sandy	105	65	20	45	NR	NR	NR	NR	NR	NR	NR	---
Martha	5	40	8	NR	NR	NR	15	NR	NR	NR	NR	---

Note. NR= no report submitted

^aWeek 11 only included Monday and Tuesday and was therefore not calculated in the average number of minutes per week

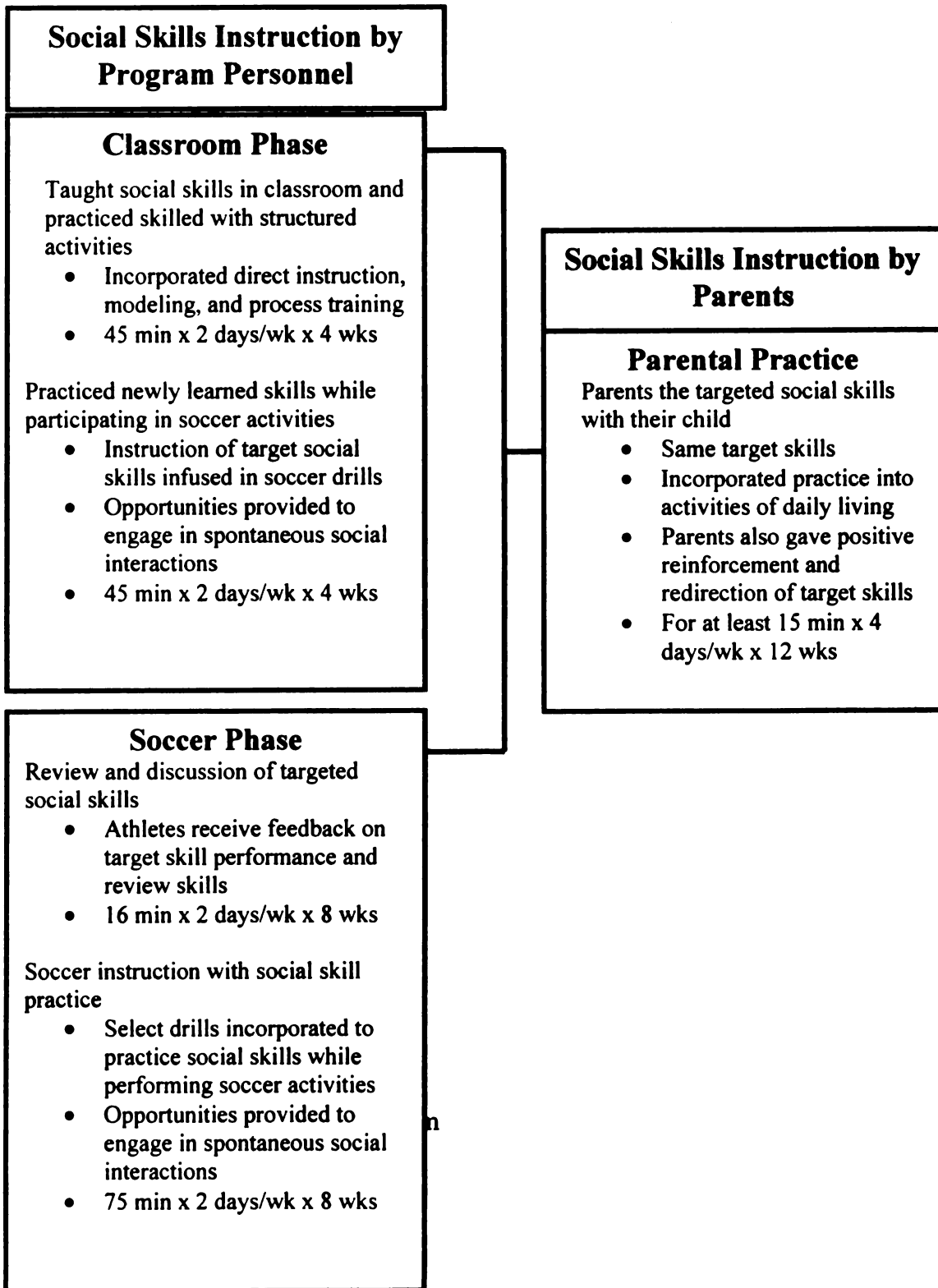


Figure 9. Components of the S³ program

CHAPTER 5

PERSONAL REFLECTION

My personal goal for this project was to create an intervention that Special Olympics coaches could incorporate into their current programs to develop their athlete's social skills. While there is an extensive amount of further research that needs to be done before this program can be distributed to coaches, this particular study has provided evidence to suggest that my dream will eventually become a reality.

After reading the book *Disability is Natural* (Snow, 2001) and speaking with parents who have children with disabilities, it became very clear to me that parents do not always value interventions that have been developed to help their children. It is not that parents did not want their children to improve the basic skills that are needed for everyday life; parents simply had a problem with the format of the interventions. Many of the current interventions require children to attend a program two or more times a week and participate in activities that resemble school work. Parents were concerned that their children are never provided any time to really be kids and enjoy themselves. Between physical therapy, speech therapy, and other such programs, children with disabilities have little time to play. During the therapeutic activities, children are often doing activities they dislike and are not interacting with many people their own age. Instead of playing with peers and people in the community, children are often interacting one-on-one with an adult. Having had personal experience with this situation, I understand the frustration and concern parents are expressing.

To me, teaching social skills within a sports setting seemed like a logical solution to the problem. Children can participate in activities that they enjoy while still developing their needed social skills. They can interact with peers of their own age and

experience an after-school program that is fun and motivating. In order to create an atmosphere that is similar to a real life situation, the program can incorporate people with and without disabilities and can be open to people with a variety of developmental disabilities. As Special Olympics currently provides support to the population on which I want to focus, it made sense to create an intervention that can be incorporated into their program.

Having completed this research study, I have found that an intervention similar to S³ is plausible and can increase people's social skills. I believe my goal to create a fun environment was also achieved. Participants did not feel as though they were being dragged to another school or therapy based activity. Instead, they looked forward to coming to the program. And yet most of the participants were still able to develop their social skills.

Conclusions about Study

From this experience, I have developed new knowledge that will influence my future research. While the facility that I chose provided many benefits, transportation to the program was an issue. I purposely selected one of the nicest soccer facilities in the area. I chose it because I wanted to show the participants that I was serious about their soccer skill development, valued them as people, and believed they deserved a nice facility in which to practice. Past studies such as Castenado and Sherrill (1999) have suggested that participants and their families value a program when it occurs on a respectable facility. While parents appreciated the facility, transportation was a problem. The facility is on the outskirts of town. Because of the location, the local public transportation system did not service the facility. Being in an area that is going through a

financially difficult time, I was limited in who could participate in the program. I quickly discovered that although families were interested in participating, some did not have a car to transport their child to the program. Other families that lived in a more affluent area were farther away and could not get out of work in time to get their child to the program. In future studies, when I am choosing a venue, I plan to consider all variables including public transportation to the venue, quality of the venue, and general location of the venue.

As with many studies that include people with disabilities, I had a very difficult time recruiting participants. I initially proposed that I would include eight participants in this study. However even after I saturated the community with advertisements, I was only able to recruit five people. Part of the recruiting issue was due to transportation. I believe another issue was the time commitment required by the families. I do not believe this program will be successful unless it occurs two times a week for an extended period of time. However, if the program was incorporated into a Special Olympics program that occurred at the school, I think families wouldn't be as concerned with the time commitment because they wouldn't have to worry about transportation. If the program was at the school, parents wouldn't have to worry about taking time to drive their child to the program or waiting around until it was time to go home. Parents would simply have to pick their child up at the end of each session. It may even be possible for the school transportation system to take the participants home. Obviously, having the program at the school would not only decrease concerns about time commitment but would also decrease transportation issues. Lastly, I believe parents would be more trusting of a program that is associated with a school. While I am qualified to run a Special Olympics

soccer program, it has been my experience that parents are often very tentative about having their children work with a stranger.

Another reason I struggled to recruit participants was because I knew many of the people who tried to enroll in the program. People who had worked with me in previous programs were not eligible to participate in S³. Having worked with three disability programs in the community, the number of people eligible to enroll was significantly decreased. While it was humbling to realize how many people I have interacted with during my time at Michigan State, it was also frustrating to not be able to meet my proposed sample size. In hindsight, I do not believe knowing the participants would have affected the research study. Coaches and partners had significantly more interactions with the participants than I did. Because of the limited interaction time I had with the participants, it is unlikely my previous knowledge of individuals would have affect their learning. I also made it a point to get to know all of the participants as individuals. I was familiar with the participants' family dynamics, interests, and hobbies by the third week of the program. During the time that I was getting to know the participants, we were not providing any instruction. Therefore, even if I had known a participant at the start of the program, all participants would have been treated equally by the time I was teaching the social skills curriculum.

It is important to note that the people who participated in my study do not necessarily represent the norm. Their parents had lower levels of education, were single mothers or recently remarried, had limited financial resources, and had not received any education on how to help their child learn new skills. If I had known the parents' level of education and marital status before creating the Parent Supplemental Activities Packet, I

may have devised it a little differently. Even though I wrote the packet at a 5th grade reading level, some of the terms I used may have been foreign to parents who had never learned about their child's disability. I strongly believe that no one knows children better than their parents. However, with this specific group of parents, it may have been helpful to include some basic information about how people with ID typically learn. I would have also included information about different learning styles. Lastly, I probably should have also included more activities that could be done with a single parent.

Future Research Studies

Based on the findings of this study there are a variety of future studies that I want to pursue.

1. Further research is needed to examine the Alexander conceptual model. This current study examines the model as whole and does not provide empirical evidence for the different components of the model.
2. I would also like to determine the effectiveness of the Parent Supplemental Activities Packet. This research study looked at the S³ package as a whole. Further studies are needed to determine if participants learned because of the classroom and soccer material alone, the Parent Supplemental Activities packet alone, or the combination of the classroom, soccer, and Parent Supplemental Activities Packet.
3. Testing the effectiveness of S³ in other sport settings is also necessary. While soccer was an effective sport to teach the material, other team sports such as basketball, and floor hockey should be tried. A Special Olympics gymnastics program may also be appropriate.

4. Further research is needed to test the effectiveness of the program when teaching people with limited verbal abilities, physical and cognitive disabilities, and people with more severe disabilities.
5. The effectiveness of the program in a truly inclusive environment may also be considered. While there were partners included in S³, it was not a truly inclusive program.
6. If the program is to be distributed to coaches, materials need to be created that would inform the coaches how to present S³. Special Olympics' coaches come from a variety of different backgrounds. While some of the coaches have a background in special education, other coaches are volunteers who do not have knowledge regarding disability and pedagogical principles. Therefore the material created would have to address a diverse population. Research would be needed to determine that the coaching material is effective for all coaches.

**APPENDIX A:
SAMPLE CLASSROOM LESSON PLANS**

Contributing Relevant Information

Finding Similar Interests

Goal of Session:

For athletes to become more in tuned to the people they are addressing and what the people's interests are. To develop skills to make a meaningful connection with the person.

Discussion Points (15 min):

- Sometimes it can be hard to start a conversation with someone you don't know because you don't know what they like to talk about.
- People can give us lots of hints about what they like. Sometimes there is a picture on their shirt that tells us what they are interested in. For example, if someone is wearing a MSU basketball shirt we can guess they like the MSU basketball team. We can also figure it out based on things that they are carrying, doing, or even talking about.

Activities to Practice in Session (30 min):

- *Modeling example:* Have the instructor and the assistant instructor model how to observe someone and ask questions.
- *"What is she interested in?"* Have a person come in with something to start a conversation off of (a basketball, a cd player, etc.)
- *"I Spy":* person has lots of things on/with them. Go around in a group and have them point out something different ("I spy an MP3 player") and then have them ask a relevant question ("What do you like to listen to?").
- *Freeze Tag:* Participants pick 2-3 items out of a box of random items. Participants then play freeze tag with each other (limit it to fast walk for safety). When one participant tags the other, he/she can only become unfrozen when he/she asks a relevant question based on the item.

Parent Activities:

- Model how you can observe someone in your family and ask a question. Make sure that you point out what exactly you are doing. (For example: Point out to your child how you can observe what dad is eating and then ask a question. Then demonstrate it. "Dad, I noticed you are having a snack. Are apples your favorite fruit?")
- Ask your child if they met anyone in the program. What did they like to do or what was interesting about them?
- Playing "I spy" when driving in the car or walking around a store. Point out an object that you see and then talk about it or ask a question about it. For example, "I see a dog over there. I like dogs. Do you think that dog likes to play with a ball like our dog Sally?"

When sitting at the table for a meal, talk with your child and remind them to contribute relevant information. You can focus on likes/dislikes of people to help understand the concept. For example, "what is your favorite food? "Katie really likes apple pie."

APPENDIX B:
SAMPLE SOCCER LESSON PLAN

Sample Soccer Lesson Plans

Session 11

Warm up and stretch (5 min)

Pass in circle and move – follow pass (5 min). Have participants talk to each other while passing the ball.

Talk about goalies (2 min)

Work on catching – in air and stationary (5 min). Have participants pair up. While practicing catching, talk about suggested topic. Partners would not throw the ball until the participant makes eye contact.

Goalie throwing (5 min)

Water Break (3 min)

Punting into goal (5 min)

Shooting drill with goalie (10 min)

Cool down (5 min)

**APPENDIX C:
SAMPLE OF PARENT PACKET**

Home Activities

The following lists of activities are suggestions for ways you can practice the social skills at home. The activities have been divided by the skills that they focus on. However, many of the activities will help develop all three of the social skills at the same time.

In the beginning, you want to make sure you do the activities that are lined up with the classroom sessions. Otherwise you will be discussing a skill that we have not yet reviewed. For example, if it is only February 17th, you should not be doing an activity from the eye contact page. I have put dates at the top of the activities pages to tell you when you can start using the activities. Once we have introduced all of the topics in the classroom, you can work on all three skills.

How Does this Work?

- Look through the different activities I have listed. Keep in mind they are not etched in stone. You may need to modify them a little bit to meet your family's needs.
- Pick the activities that work best for your family and that you think your child would enjoy doing. Doing an activity that is not enjoyed by your child makes practice painful for you as well as your child. The goal of the program is to practice the skills in a fun way, so you want to find the ones your child enjoys.
- Introduce the game to your child and practice the skill. Some of the activities he/she will love and you can repeat them. Others you may decide aren't for you and your family. Some activities may take two or three tries before your child understands them or enjoys them.
- Each time you do an activity record it on the sheet provided at the end of this book. **Remember you should be practicing at least 4 times a week.** Your practice time may be 15 minutes or a half an hour each time. If your child has a hard time focusing and does better with short intervals, it may be better to practice for 8 short periods (7 minutes) instead of 4 longer periods (15 minutes). You know your child best, so do whichever you think is more appropriate for your child.

Helpful Hints

- As you know praise can make a world of difference! Make sure you provide your child with praise when he/she demonstrates the skills correctly, even if it isn't when you are doing an activity.
- Encourage everyone in your child's life to get involved. Siblings, care givers, and extended family can all contribute.

- Remember to do activities from all three skills. If your child struggles in one area more than another, you will probably want to practice that skill more than others. However, you should still practice all three.
- Demonstrations are one of the best ways to teach skills! Make sure you demonstrate the skills correctly. Your child may not realize you are demonstrating the skill or may not know what to focus on, so make sure you point out what you are doing correctly. For example, “when I talk to your dad I try to look at him so he knows I am listening.”
- Remind your child to apply the skills from the program while out in the community. For example, if you are going to a restaurant, remind your child to look at the waiter when ordering food. You may want to agree on a system that allows you to give your child feedback discreetly while in the community. For example, if he/she does the skill correctly, you will give them a small thumbs-up.

Sample Activity for Contributing Relevant Information

Create a Silly Story. Pick a topic for your story. You contribute a sentence then let your child contribute a sentence. If there are other people with you they can jump in. Keep going around till you have made a silly story. You can do it in the car, while doing dishes, etc. Another way to make it fun is to record it and then play it back. If your child likes to draw, write it down and then he/she can draw illustrations.

Sample Activity for Eye Contact

Funny Faces: When your child isn’t looking, make a funny or sad face. Then remind them to look up. When he/she see you, remind them it is important to watch you so you don’t feel sad.

Sample Activity for Turn Taking

Karaoke. When listening to music, you can take turns being different people in the song. You can also take turns singing different verses. You can make it even more fun by dancing around to the music. To help emphasize the turn taking you can also use a pretend microphone (use a brush, large spoon, etc.).

**APPENDIX D:
DEMOGRAPHIC PROFILE**

Demographic Profile

Participant Information

Name _____ Gender: [] Male [] Female Age _____

Names of Parents/Caregivers _____

Address _____ City/State/Zip _____

Email Address _____ Daytime Phone _____

Evening Phone _____ Cell phone _____

Disability Information. Check every disability that applies to your child. For each disability you check, indicate whether the condition is mild, moderate, or severe in your opinion.

___ Intellectual disability [] Mild [] Moderate [] Severe
such as mental retardation or Down syndrome

___ Severe learning disability [] Mild [] Moderate [] Severe

___ Autism spectrum disorder [] Mild [] Moderate [] Severe

___ Behavior disorder [] Mild [] Moderate [] Severe

___ Physical disability [] Mild [] Moderate [] Severe
such as cerebral palsy or muscular dystrophy

___ Health condition [] Mild [] Moderate [] Severe

___ Vision loss [] Mild [] Moderate [] Severe

___ Hearing loss [] Mild [] Moderate [] Severe

___ Seizure disorder [] Mild [] Moderate [] Severe

___ Other: [] Mild [] Moderate [] Severe

Describe: _____

Physical Activity and Sports. During the last 6 months has your child participated in physical activities or sports? (check all that apply)

___ School physical education

___ Community physical activity or sports program (if yes, please describe briefly)

Activity/sport _____ Where? _____

Activity/sport _____ Where? _____

Activity/sport _____ Where? _____

Activity/sport _____ Where? _____

Activity/sport _____ Where? _____

___ Play at home or in the neighborhood (if yes, please describe briefly) _____

___ Other (please explain) _____

Extra Curricular Activities During the last 6 months has your child participated in any organizations or clubs? (check all that apply)

___ School club or similar after-school activity

___ Religious organization

___ Boy scouts, girl scouts, or similar organization

___ Drama club

___ Other (Please Describe) _____

Social Skills Background

a) Has your child ever received instruction in social skills such as a class that _____ [] Yes [] No
taught them how to start a conversation?

b) If yes, please answer the following questions.

How long was the program? _____ Days

Who sponsored the program? _____

How old was your child when she or he participated? _____ Years

What did children do in this program? _____

Coaching Tips

Please provide us with any tips that we can use to make this an enjoyable experience for your adolescent. For example, what is a good way to give positive reinforcement (high fives, verbal praise, etc.)?

What is your adolescent interested in?

What motivates your adolescent?

Is there anything we should avoid doing?

Parent/Primary Caregiver Information

Name _____ Gender: [] Male [] Female Age _____

Relationship to participant: _____

a) What is the highest level of education you have obtained?

_____ Did not complete high school _____ Bachelors Degree

_____ Completed high school _____ Masters or PhD

_____ Associates degree

b) What is your current occupation? _____

c) Have you ever been trained to teach social skills to your child? (please circle one)

YES NO

If Yes, please explain: _____

**APPENDIX E:
SPECIAL OLYMPICS FORMS**

APPLICATION FOR PARTICIPATION SPECIAL OLYMPICS MICHIGAN / AREA ____ / LOCAL _____

SECTION A ATHLETE PERSONAL DATA

Athlete first name and initial		Athlete last name		Athlete social security number		Athlete date of birth (mm/dd/yyyy) / /		
Home address (number and street)			Apt. no.		Phone number for athlete		Please indicate the athlete's gender ☐ Male ☐ Female	
City or town, state, and zip code				Athlete's health / insurance company			Policy number	
Parent/guardian first name and initial		Parent/guardian last name		Name for an emergency contact				
Parent/guardian address (number and street) if different from above				Phone number for emergency contact				
City or town, state, and zip code				Please indicate the athlete's race/ethnicity (optional). ☐ American Indian ☐ Black or African American ☐ Asian ☐ Hispanic or Latino ☐ White ☐ Other _____				
Parent/guardian home phone		Parent/guardian work phone						

SECTION B ATHLETE HEALTH DATA

Please check yes or no to the following health conditions.

	Yes	No	
1			Asthma or exercise-induced wheezing
2			Seizure / Epilepsy Indicate frequency _____
3			Diabetes Please indicate ☐ Type I ☐ Type II
4			Down syndrome Have x-rays been taken to check for atlantoaxial instability (AI)? ☐ Yes ☐ No Date of x-ray _____ Was AI present? ☐ Yes ☐ No
5			Concussion/Serious head injury Date of injury _____
6			Bed wetter
7			Stunt
8			Motor impairment requiring special equipment
9			Allergies (please check box and list specific allergy) ☐ Medicines _____ ☐ Foods _____ ☐ Insect bites/stings _____ ☐ Other _____
10			Immunizations are up to date Date of last tetanus shot _____
11			Tendency to bleed
12			Chest pain/ Fainting spells/ Heart stroke/ Exhaustion
13			Deformities (for example, curvature of back, one kidney, one testicle, etc.)
14			Heart disease/ Heart defect/ High blood pressure
15			Special diet
16			Blood-borne contagious infection carrier (for example, HIV, Hepatitis B)
17			Emotional/ Psychiatric/ Behavioral problems
18			Bone or joint disorder
19			Urination/bowel problem
20			Visual impairment or correction (for example, blind or wears glasses/contacts)
21			Hearing impairment or correction
22			Dental concerns (for example, dentures, braces, chipped teeth, bridges)
23			Major surgery or serious illness
24			Other or new problems that would interfere with or modify sports participation (for example, wheelchair, other assistive devices)

For any "yes" responses to questions 12-24, please explain:

25 Please indicate mental retardation diagnosis if known (condition or cause).

SECTION C GUARDIAN RELEASE

By submitting this form, I hereby request permission for the above-named applicant (hereafter referred to as "entrant") to participate in Special Olympics. I represent and warrant that the entrant is physically and mentally able to participate in Special Olympics, and I submit a subscribed medical certificate.

I grant permission for Special Olympics to use the likeness, voice, and words of the entrant in TV, radio, newspapers, magazines, and other media for the purpose of communicating the mission and activities of Special Olympics and/or applying for funds to support the mission and activities of Special Olympics.

I authorize Special Olympics to take such measures and arrange for such medical and hospital treatment as may be deemed advisable for the health and well-being of the entrant in the event that he/she becomes ill or injured at any Special Olympics activity and no responsible adult authorized to act on the entrant's behalf is immediately available to be consulted as to the appropriate medical care for the entrant.

By signing below, I acknowledge that I have read, fully understand, and agree to be bound by the provision of this release.

Signature of Parent/Legal Guardian _____ Date _____

Note to entrant (or parent of entrant) with Down Syndrome: If a radiological exam certifies the presence of atlantoaxial instability, the entrant and two physicians must complete the "Special Release for Athletes with Atlantoaxial Instability" to participate in sports that may cause hyper-extension, radial flexion, or direct pressure on the neck or upper spine.

SECTION D MEDICAL CERTIFICATION To be completed by examiner

Skin	Head	Eyes	Ears
Nose	Mouth/Throat	Neck	Lungs
Heart	Abdomen	Extremities	Genital
Athlete height		Athlete weight	Blood pressure
List health concerns/conditions that Special Olympics should be aware of for this athlete: _____ Date of Athlete's Exam _____			
Please read and check box: ☐ I have examined the individual named in this application and reviewed the Athlete Health Data in Section B, and I certify that there is no medical evidence available to me which would preclude this athlete from participation in Special Olympics.			
Signature of Examiner		Date	
Examiner's Name		Examiner's Title (M.D., D.O., C.N.P., P.A.)	
Address		Phone	
Note to examiner: If the athlete has Down Syndrome, Special Olympics requires that a full radiological exam be conducted which certifies the absence of atlantoaxial instability before the athlete may participate in sports or events which may result in hyperextension, radial flexion, or direct pressure on the neck or upper spine.			

SECTION E MEDICATIONS

List medications being taken by athlete. If more than 3 medications, attach a separate sheet listing all medications.

Medication Name	Dosage	Time(s) Administered	Date Prescribed

This form is not valid without the dated signatures of a Parent/Legal Guardian and a Medical Examiner. This form is valid for three years from the medical exam date.

SPECIAL OLYMPICS MICHIGAN – AREA 8 ATHLETE MEDICAL UPDATE INFORMATION

PLEASE PRINT ALL INFORMATION

DATE _____

ATHLETE NAME _____

ATHLETE BIRTHDATE _____ HOME PHONE # _____

PHYSICIAN NAME AND PHONE # _____

INSURANCE COMPANY NAME AND POLICY # _____

In case of an emergency Area 8 can contact and/or release this athlete to the people listed below. Please list in the order you would like contact to be made.

1 NAME _____ PHONE # _____ RELATIONSHIP _____

2 NAME _____ PHONE # _____
RELATIONSHIP _____

3 NAME _____ PHONE # _____ RELATIONSHIP _____

LIST ALL MEDICATIONS THAT HAVE BEEN PRESCRIBED FOR THIS ATHLETE

USE ADDITIONAL PAGE IF NEEDED

MEDICATION NAME & STRENGTH	DOSAGE (# OF TABLETS)	TIME	TIME	TIME	WITH FOOD Y / N

*** CAN THIS ATHLETE RECEIVE TYLENOL, MOTRIN, ASPIRIN OR IBUPROPHIN?**

YES _____ NO _____ PLEASE CIRCLE WHICH YOU PREFER.

*** LIST ANY MEDICATIONS THAT SHOULD BE TAKEN WITH MEALS**

*** LIST ANY ALLERGIES TO MEDICATIONS, BEE STINGS, FOOD, ETC**

*** PLEASE LIST ANY ADDITIONAL INFORMATION THAT YOU FEEL WOULD BE HELPFUL, USE A ADDITIONAL PAGE IF NEEDED**

**APPENDIX: F:
PARENT INTERVIEWS**

PARENT INTERVIEW QUESTIONS

Interview 1- Baseline

1. How would you describe _____ (*insert participant's name*) social skills in general?
2. Do you think _____ (*insert participant's name*) demonstrates appropriate social skills at home.
 - a) If no, what is inappropriate or lacking?
 - b) If yes, are there any social skills they are lacking at home?
3. Do you think _____ (*insert participant's name*) demonstrates appropriate social skills in the community?
 - a) If no, what is inappropriate or lacking?
 - b) If yes, are there any social skills they are lacking in the community?
4. Do you think _____ (*insert participant's name*) demonstrates appropriate social skills with strangers?
 - a) If no, what is inappropriate or lacking?
 - b) If yes, are there any social skills they are lacking when interacting with strangers

Interview 2: Post-Classroom

1. Since _____ (*insert participant's name*) started the program, have you noticed a changes or been told of any changes in _____ (*insert participant's name*) social skills
 - a) At home? If yes, what?
 - b) At school? If yes, what?
 - c) In the community with people he/she knows? If yes, what?
 - d) With strangers? If yes, what?
2. When _____ (*insert participant's name*) comes home from the program, what does he/she talk about?
3. How do you think _____ (*insert participant's name*) feels about the program? (*Probe: do you think he/she likes the program or dislikes the program?*)

4. The next few questions are going to be about the parent activity packet.
 - a) How often would you say you use it?
 - b) What if anything have you liked about it?
 - c) What if anything has _____ (*insert participant's name*) likes about it?
 - d) What if anything have you disliked about it?
 - e) What if anything has _____ (*insert participant's name*) disliked about it?
 - f) Has anything been unclear with it?
 - g) Do you think it is helping _____ (*insert participant's name*) to learn the material? Why? (*Probe: what makes you think yes or no?*)
 - h) What, if anything, has been a struggle for you when using the parent packet?

Interview 3: Post-Soccer

1. Since the last time we talked, have you noticed a changes or been told of any changes in _____ (*insert participant's name*) social skills
 - a. At home? If yes, what?
 - b. At school? If yes, what?
 - c. In the community with people he/she knows? If yes, what?
 - d. With strangers? If yes, what?
2. Was there any part of the program that _____ (*insert participant's name*) said he/she liked about the program? What?
3. Was there anything _____ (*insert participant's name*) didn't like about the program?
4. How did you feel about this being an inclusive setting?
5. The following questions are about the parent activity packet.. How often would you say you use it?
6. Do you think it is helping _____ (*insert participant's name*) to learn the material? Why? (*Probe: what makes you think yes or no*)

7. Last time you said you liked _____ (*insert answer from previous time*). Is there anything else that you like about it?
8. Last time you said you didn't like _____ (*insert answer from previous time*). Have you found there is something else you didn't like about it?
9. Last time you said you were having a difficult time with _____ (*insert answer from previous time*). Have you found there is something else that has been a struggle for you when using the parent packet?
10. Any suggestions on how to improve the parent packet?
11. Do you plan on continuing to use it? Why or why not?
12. If a program similar to this one was to come up again do you think would enroll in it? Please explain.
13. Are there any other skills you would like to see taught in this type of setting?
14. What suggestions do you have to improve the overall program? The soccer portion? the classroom portion?

Retention

1. Last time we talked you said that _____ (*insert participant's name*) had developed _____ (*insert skills from above*) skills? Do you think he/she has decreased in the use of these skills, increased in the use of these skills, or stayed the same? Please explain.

If participant had not improved in any skills, ask: Have you seen a change in any of _____ (*insert participant's name*) social skills? Do you think he/she has decreased in the use of these skills, increased in the use of these skills, or stayed the same? Please explain.

2. Since the end of the program, have you noticed any other changes or been told of any other changes in _____ (*insert participant's name*) social skills
 - a. At home? If yes, what?
 - b. At school? If yes, what?
 - c. In the community with people he/she knows? If yes, what?
 - d. With strangers? If yes, what?

3. Are you still using the parent activities packet?

IF YES

- a) How often would you say you use it?
- b) Do you think it is helping _____ (*insert participant's name*) to learn the material? Please explain.
- c) Last time you said you liked _____ (*insert answer from before*). Is there anything else that you like about it?
- d) Last time you said you didn't like _____ (*insert answer from before*). Have you found there is something else you didn't like about it?
- e) Last time you said you were having a difficult time with _____ (*insert answer from previous time*). Have you found there is something else that has been a struggle for you when using the parent packet?
- f) Any suggestions on how to improve the parent packet?
- g) Do you plan on continuing to use it?

IF NO

- a) Last time we talked you said you were using it, what made you stop using it?
- b) Do you have any suggestions on ways to improve it so you would use it?

APPENDIX G:
ALEXANDER ADAPTATION OF SKILL RATING FORM FOR PARENTS
Modified from Baker (2003)

Alexander's Adaptation of Skill Rating Form

Athlete Name: _____ Date: _____

Parent Name: _____

Directions: Based on your observations in various situations, rate each child's use of the following skills according to the following scale:

1= the athlete **almost never** uses the skill

2= the athlete **seldom** uses the skill

uses the skill

3= the athlete **sometimes** uses the skill

4= the athlete **often** uses the skill

5= the athlete **almost always**

Please provide any comments about how the athlete demonstrates the skill. For example, if the athlete almost always demonstrates the skill around teachers but not around other people he/she knows in the community, please note that in the comments section.

<i>Skill</i>	<i>Rating</i>	<i>Comment</i>
1. Maintains appropriate physical distance when talking with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
2. Uses appropriate tone of voice with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
3. Uses appropriate volume when speaking to a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
4. Uses appropriate greeting with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		

1= the athlete **almost never** uses the skill
 2= the athlete **seldom** uses the skill
 uses the skill
 3= the athlete **sometimes** uses the skill

4= the athlete **often** uses the skill
 5= the athlete **almost always**

<i>Skill</i>	<i>Rating</i>	<i>Comment</i>
5. Stays on topic while in conversation with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
6. Maintains a conversation with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
7. Takes turns while talking with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
8. Appropriately initiates a conversation with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
9. Joins a conversation appropriately (e.g. discusses same topic, says excuse me) with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
10. Ends a conversation appropriately (e.g. says something before just walking away) when talking with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
11. Introduces one's self to a) Strangers		

1= the athlete **almost never** uses the skill
 2= the athlete **seldom** uses the skill
 uses the skill
 3= the athlete **sometimes** uses the skill

4= the athlete **often** uses the skill
 5= the athlete **almost always**

<i>Skill</i>	<i>Rating</i>	<i>Comment</i>
12. Introduces topics that are of interest to others when talking with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
13. Gives background information about what they are talking about when talking with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
14. Shifts topics appropriately when talking with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
15. Talks too long (rambles on about a topic) when talking with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
16. During unstructured play, interacts with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
17. During structured play, interacts with a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		

1= the athlete **almost never** uses the skill
 2= the athlete **seldom** uses the skill
 3= the athlete **sometimes** uses the skill

4= the athlete **often** uses the skill
 5= the athlete **almost always**

<i>Skill</i>	<i>Rating</i>	<i>Comment</i>
18. Asks questions to gain information about		
a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
19. Initiates one on one social interaction with		
a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
20. Maintains eye contact during a conversation with		
a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		
21. Responds to a greeting from a		
a) Family member		
b) Friends		
c) People in community they know		
d) Strangers		
22. Responds to invitations to join other people's activity		
a) Family members		
b) Friends		
c) People in community they know		
d) Strangers		

**APPENDIX H:
OBSERVATION SKILL RATING FORM**

SAMPLE- Observation Skills Rating Form

NAME KEY			
<i>Athlete</i>			
J: Jack	M: Michael	C: Chris	J: Jessica
K: Kirk			
<i>Coaches/Buddies/Others</i>			
Ma: Maddy	A: Amy	S: Stacy	N: Nate
D: David	G: Greg	L::Laura	Gr: Group

SKILL KEY
0 = did not attempt
- =attempt made but beginning level
+ =functional and proper use

Observer: _____

Date: _____

Participants Observed: _____

Name	Skills			Notes
	Eye Contact	Turn Taking	Relevant Info	

**APPENDIX I:
TRACKING YOUR PROGRESS FORM**

Tracking Your Practice: February 17th - 23rd

Participant's name: _____

<i>Activity</i>	<i>Amount of Time</i>	<i>How Did It Go?</i>

APPENDIX J:
COACH, INSTRUCTOR, AND PARTNER JOURNAL

COACH JOURNAL

Name: _____

Role: _____

Date: _____

- 1. Did you modify/change the coaching plan? Please explain.**
- 2. Please discuss any notable interaction between athletes or between you and an athlete (positive change towards the goal behavior, a decrease in the goal behavior, frustration demonstrated by the athlete when trying to perform a goal behavior, or an unusual approach at a goal behavior)?**
- 3. Do you know of any information that would explain an athlete's "off day"? (makes sure to specify the athlete)**
- 4. Please comment on the coaching plan (things that worked really well/things to change in future).**
- 5. Other comments**

INSTRUCTOR JOURNAL

Name: _____

Date: _____

- 1. Did you modify/change the classroom plan? Please explain.**
- 2. Please discuss any notable interaction between athletes or between you and an athlete (positive change towards the goal behavior, a decrease in the goal behavior, frustration demonstrated by the athlete when trying to perform a goal behavior, or an unusual approach at a goal behavior)?**
- 3. Do you know of any information that would explain an athlete's "off day"? (makes sure to specify the athlete)**
- 4. Please comment on the classroom plan (things that worked really well/things to change in future).**
- 5. Other comments**

PARTNER JOURNAL

Name: _____

Date: _____

- 1. Who did you work with today?**
- 2. Please discuss any notable interaction between athletes or between you and an athlete (positive change towards the goal behavior, a decrease in the goal behavior, frustration demonstrated by the athlete when trying to perform a goal behavior, or an unusual approach at a goal behavior)?**
- 3. Do you know of any information that would explain an athlete's "off day"? (make sure to specify the athlete)**
- 4. Other comments?**

**APPENDIX K:
GENERAL MANUAL TABLE OF CONTENTS**

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**APPENDIX L:
CONSENT FORM**

Social Skills and Sports (S³) Program: Developing the Social Skills of Young Adult Special Olympians

Consent Form for Participation in the Study

My name is Melissa Alexander. I am a doctoral student in adapted physical activity and sport psychology under the supervision of Dr. Gail Dummer at Michigan State University. I am writing to request permission for you and your Special Olympian to participate in my dissertation research project called the Sports and Social Skills (S³) Program. During this program, participants will participate in a 14 week program that meets for 90 minutes sessions twice a week. The participants will work on social skills and play soccer. The specific social skills are how to contribute relevant information to a conversation, how to take turns in a conversation, and how to make eye contact while having a conversation. During soccer they will learn about dribbling, passing, and shooting.

What is the purpose of the study?

The purpose of this study is to see if the participants will develop and refine their social skills through their participation in this program.

Requirements to participate in this study?

- Age 13 to 25
- Mild/moderate intellectual disability. If the person has a secondary disability he/she is still welcome to participate unless the disability interferes with participation in soccer or interacting verbally with others
- Must be verbal.
- All paperwork required by Special Olympics Michigan, including the Application for Participation (requires medical exam) and Athlete Code of Conduct-
- Must have transportation to the program
- Must have supportive shoes and shin guards

Who Cannot Participate?

- People with atlantioaxial instability (AAI) due to safety concerns.
- People who have participated in Michigan State's Sports Skills Program, the Sports and Life Skills Program, or the Michigan Chill's Special Olympics Soccer Team
- People who use sign language, picture boards or assistive devices for communication
- People who cannot attend at least 80% of the entire program.

What is S³

S³ is a 14 week program designed to teach social skills to people with intellectual disabilities. The program is an enjoyable atmosphere where the participants are involved in games and activities to help learn and develop social skills. Soccer will also be used to allow the participants to practice their skills in a natural setting. Lastly, there is a parental component of the program where parents are given the information that is covered in the program and asked to apply it at home through some fun games and activities that can be incorporated into your daily lives.

The program for the children has four phases, baseline, classroom, soccer, and retention which are pictured in the chart below.

Phases of S³:

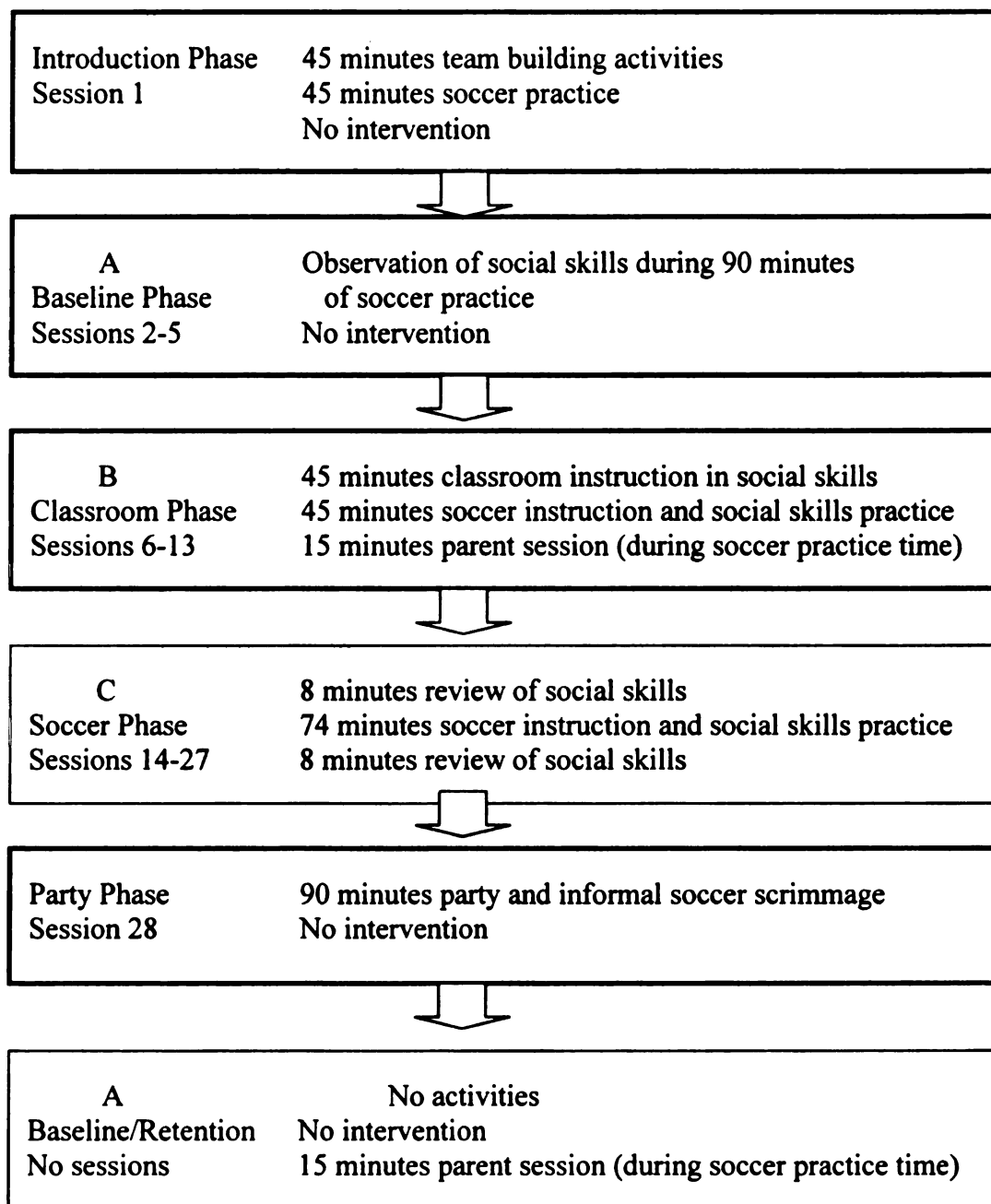


Figure 3. Phases of the S³ Program

A comprehensive description of these phases can be found in the appendix at the end of this document.

At 3 different intervals in the program, participants will be observed while they are playing soccer. Two observers will record the participants' social interactions with the coaches, other participants, and buddies. When the participants are being observed, the program will also be videotaped.

Because this is a learning experience, we ask that participants attend at least 21 sessions. As the classroom portion is a vital component of this program, it is important that the participants attend 10 sessions during the first 6 weeks.

The participation of the Parents/Primary Caregiver includes completion of the following:

- 1) *A Demographic Profile*- A series of questions related to the adolescent's age, sex, school, participation in extracurricular activities, and participation in physical education classes. (completion time is about 5 minutes)
- 2) *Special Olympics Application for Participation or Special Olympics Medical Update Form*- A form provided by Michigan Special Olympics (requires medical exam). This form only needs to be completed if a current form is not on file with the Area 8 office. (completion time is about 10 minutes plus time to receive a doctor's signature)
- 3) *Release of Special Olympics Application for Participations*- Allows Melissa Alexander to have access to your participant's medical form so that she may have it in case of a medical emergency. (completion time is 2 minutes)
- 4) *Modified Skill Rating Form for Parents*- The survey asks you to rate specific social skills that are demonstrated by your adolescents in different social settings. You will complete the survey four different times throughout the program. (completion time is about 10 minutes)
- 5) *Four Interviews*. We will arrange a convenient time to come to your home (or another place you choose) to ask some questions about your adolescent's current level of social skills. The 4 interviews will be done: before the program, 6 weeks into the program, at the end of the program, and 6 weeks after the program is completed. Each interview should last about 30 minutes and they will be audio tape recorded.

You will receive a packet at the beginning of the program that provides a summary of the different lessons that will be presented to your adolescent. There will also be a list of different activities that you can do to help develop the social skills with your adolescent at home. These activities can be incorporated into your daily lives and will not take a large amount of time. An example of an activity is playing a word game in the car. You will be asked to incorporate the activities into your daily activities at least 5 times a week.

In order to discuss the material in the packets, you will be asked to attend the last 15 minutes of the S³ program for sessions 6-14. You will also be asked to keep a journal of your use of the activities. The journal will ask you to record how long you practiced the activity, when you practiced it, and how successful the practice was.

Who will be working with my adolescent?

There will be one head coach, one assistant coach, one head instructor (myself, Melissa Alexander), and one assistant instructor. We hope to have 8 participants so there will be one staff member for every two participants. All Staff will be certified in First Aid and CPR and will have completed the Special Olympics General Orientation and Protective Behavior courses. Coaches have previous experience coaching soccer as well as interacting with people with disabilities. I have previous experience teaching and coaching sports to persons with disabilities and am certified as a Special Olympics Soccer Coach.

There will also be 3-4 people between the ages of 13 and 25 who do not have disabilities playing on the team with your participant. These people will serve as partners for your participant and will help demonstrate appropriate social skills.

How could my adolescent and I benefit by participating in the study?

It is the hope of the researchers that participants will learn and develop better social skills and have a fun experience with soccer. Each participant will receive a team jersey at the beginning of the program. Participants will also be given a small healthy snack at each session. At the completion of the program, participants will be provided with a certificate. You will be provided a copy of the classroom portion of the S³ as well as the Parent Activities Program to continue to use with your adolescent. Each family that participates in this study will also receive a report of the results upon request.

How will other people benefit from this study?

The future goal of this line of research is to create a series of programs that Special Olympics coaches can incorporate into their practices to help the participants develop different life skills. The information gained in this study may help guide future research as well as contribute to the literature on effective ways to teach social skills to people who qualify for Special Olympics.

Are there any risks to adolescents or parents who participate in the study?

The only potential risks from participation in this study are a breach of confidentiality, or minor physical injuries from playing soccer. The investigators are taking the following precautions to minimize these risks.

- We will store information that identifies you and your child in a locked cabinet in a locked office and keep the identity of you and your child separate from other study documents. We will protect the confidentiality of all information to the maximum extent of the law and not reveal information that identifies you or your child without your permission, unless required to do so by law. In order to protect your child's medical privacy, only Melissa Alexander and Dr. Gail Dummer will have access to the Special Olympics Application for Participation. Coaches will

be provided only with a summary of the participants' medical information that includes only the "need to know" information (e.g. allergies).

- Risk of such injuries from soccer will be minimized by: (a) matching the participant's ability to perform with the activity and careful supervision by qualified personnel.

Does it cost anything to participate in the study?

The program is free; however, parents will be responsible for transporting their adolescents to and from the program. All participants must also wear supportive shoes and shin guards. If purchasing shin guards presents a financial hardship, please talk with Melissa Alexander.

Is participation voluntary?

Participation in this study is completely voluntary. If a participant is not comfortable or does not want to continue a session, we will stop the session for the day, or your participant can cease participation altogether. There are no penalties for choosing not to participate in the study or ceasing participation during the project.

Who should parents contact if they have questions, now or in the future?

If you have questions about the research study, please contact Melissa Alexander or Dr. Gail Dummer. If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact – anonymously, if you wish – Peter Vasilenko, Ph.D., Director of Human Research Protection Program (IRB).

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Parent/Caregiver Consent Form

Social Skills and Sports (S³) Program: Developing the Social Skills of Young Adult Special Olympians

Your signature below indicates your voluntary agreement to allow your adolescent to participate in the study named above, as well as your agreement to participate in the parent activities.

Your Printed Name

Your Signature

Date

Your Adolescent's Name

Your signature below indicates your voluntary agreement to allow Melissa Alexander to receive a copy of your adolescent's Athlete Application to Participate and Medical Update Form from Special Olympics.

Your Printed Name

Your Signature

Date

Your Adolescent's Name

Participant Consent Form

Social Skills and Sports (S³) Program: Developing the Social Skills of Young Adult Special Olympians

This form is to be completed by the participant if the participant is over the age of 18 and is his or her own legal guardian.

Your signature below indicates your voluntary agreement to participate in the study named above.

Your Printed Name

Your Signature

Date

Date of Birth

Your signature below indicates your voluntary agreement to allow Melissa Alexander to receive a copy of your Athlete Application to Participate and Medical Update Form from Special Olympics.

Your Printed Name

Your Signature

Date

Date of Birth

Participant Assent Form

Social Skills and Sports (S³) Program: Developing the Social Skills of Young Adult Special Olympians

This form is to be completed by the participants if they are under the age of 18 or if they have a legal guardian.

Hi! My name is Melissa Alexander. I am a graduate student at Michigan State University. I am here to invite you to come play soccer and learn about how to talk with other people. First I will tell you about this program and show you a short video of what the program will be like. Then, you can tell me if you want to try it or not.

Participant will then receive a brief summary of the program. They will also be shown a video clip of a staged classroom interaction and soccer interaction as would occur in the program.

Do you have any questions?

YES



NO



Would you like to come play soccer and learn about how to make more friends?

YES



NO



If answered yes and able: sign name below

Your Printed Name

Your Signature

Date

If participant cannot provide written assent, they must provide verbal assent. Both the interviewer and the parent/legal guardian must witness the assent.

Witness to the participant's assent:

Parent/legal guardian Signature

Melissa Alexander's Signature

Print Name

Print Name

Date

Date

Appendix A

Introduction (Session 1): During the very first session participants will spend 45 minutes being introduced to the staff and the facility. They will develop a set of team rules and also create a team name. The function of this day is to get to know each other and become comfortable in the new environment. The remaining 45 minutes, the participants will participate in soccer activities.

Baseline (Sessions 2- 5): Participants will be observed interacting with other people in the program to establish their current level of social skills. The majority of the time will be spent playing soccer. Some of the time will also be dedicated to reminding people about rules and other teammate's names.

Classroom (Sessions 6-13): The classroom sessions is divided into two parts. The first 45 minutes of each session, participants will receive social skills' training that includes a variety of activities to learn about how to contribute relevant information to a conversation, how to take turns in a conversation, and how to make eye contact while having a conversation. For the remaining 45 minutes, participants will be involved in a soccer practice during which participant will be encouraged to use the social skills taught earlier in the day. Each soccer portion will consist of 5 minutes warm-up, 20 minutes skill development, 15 minutes modified game play, and 5 minutes cool-down. Coaching plans are based upon drills developed for persons with disabilities by Davis (2002).

Soccer (Sessions 14-27): For the first 8 minutes of practice, participants will be reminded about the social skills material that was discussed in previous weeks. The last 8 minutes of practice will be used to reinforce participants' proper use of social skills and to remind them of other skills to use in the future. The remaining 74 minutes will be used for soccer practice. The soccer practice will be run in the same format as it was during the classroom sessions. Participants will develop soccer skills while also doing activities to practice their social skills.

Party (Session 28): As a token of appreciation and as a way to provide closure, we will have an End of the Season Party on the last day of the program. During this time the parents will be invited to play a soccer game against the participants as well as attend a ceremony where certificates are given to the participants. There will be food and beverage provided.

Retention (6 weeks after the program is complete): We will arrange to interview the parent/primary caregiver of the participant to determine if the social skills learned in the program are still being demonstrated by the participant. More information about the interviews can be found under "what will my participant and I do in this study".

APPENDIX M: DEFINITIONS

Definitions

Special Olympics

Special Olympics is an international, non-profit organization that provides sporting opportunities to people with intellectual disabilities. In order to participate in Special Olympics, one must

“be at least 8 years old and identified by an agency or professional as having one of the following conditions: intellectual disability; a cognitive delay as determined by standardized measures such as intelligence quotient or other generally accepted measures; or a closely related developmental disability, i.e. functional limitations in both general learning and adaptive skills” (Joseph P. Kennedy, Jr. Foundation, n.d.).

People can participate in the program free of charge and are not discriminated against based on race, gender, or severity of disability. There is no maximum age for participation. Therefore, adults who meet the disability requirement are strongly encouraged to participate. People who has multiple disabilities, including physical disabilities, are welcome to participate in Special Olympics programs given that they meet the above criteria (Joseph P. Kennedy, Jr. Foundation, n.d.).

Disability

While there are a plethora of definitions for the term disability, for the purpose of this paper all disabilities are defined according to criteria from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision (DSM-IV-TR) (2000). This diagnostic manual was chosen because it is supported by the American

Psychiatric Association (APA), is used by most clinical psychologists in the United States for diagnostic purposes, and is commonly used by researchers to define disability.

Intellectual Disabilities

For the purpose of this research study, the term intellectual disabilities (ID) refers to individuals who have been diagnosed with mental retardation (including all sub-categories such as Down's syndrome) or a pervasive developmental disorder.

Mental Retardation

According to the DSM-IV-TR (2000), one must have three distinct characteristics to be labeled as mentally retarded. The individual must have significantly below average intellectual functioning abilities, namely an intelligence quotient (IQ) score that is two or more standard deviations below average. Along with the lower IQ score, the individual must also have "significant limitations in adaptive functioning in at least two of the following areas: communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health and safety (APA, 2000, p.41)." Lastly, the individual must demonstrate below average intelligence and difficulties in adaptive functioning before he or she reaches the age of 18 (APA, 2000).

There are four levels of mental retardation (MR); mild, moderate, severe, and profound. For the purpose of this study, only individuals with mild to moderate MR will be discussed. People with severe and profound MR have IQ scores that are lower than 40, and have little to no verbal communication skills (APA, 2000). This level of disability would make learning difficult within the environment utilized in this study.

Approximately 85% of people with MR have a mild level of disability. Because individuals with mild mental retardation have IQ scores that range between 2 and 3 standard deviations below average, they tend to have fewer difficulties living independent lives compared to individuals with moderate MR. During the preschool years, individuals with mild MR will develop the same social and communication skills that are seen in typically developing children. It is not until they reach adolescence or adulthood that they may struggle with social skills as well as general coping skills in stressful environments (APA, 2000). These individuals are fairly self sufficient and with general support can live independently, work, marry, and support children (Durstine & Moore, 2003).

Moderate mental retardation is characterized by an IQ scores that are 3 to 4 standard deviations below average, resulting in increased difficulties with social skills as well as activities of daily living. It is diagnosed in about 10% of individuals with mental retardation (APA, 2000). Individuals with this level of mental retardation tend to have “maladaptive behaviors including problems with speech, social interaction, and a higher incidence of psychiatric disorders” (Durstine & Moore, 2003, p.304). While individuals with moderate MR will acquire some communication skills when they are young, they tend to have difficulties developing social skills. Forming peer relationships often tends to be difficult due to “their difficulties in recognizing social conventions” (APA, 2000, p.43). Because of their difficulties, individuals at this level benefit from having vocational and social skills training in order to adapt to society (APA, 2000).

Down syndrome. Down syndrome (DS) is a sub category of mental retardation, and is the most common form of MR caused by a chromosomal malformation (Durstine

and Moore, 2003). It is “marked by mild to moderate mental retardation and physical characteristics” (Venes & Thomas, 2001, p.607).

There are actually three different types of Down syndrome: (a) trisomy 21, (b) translocation, and (c) mosaicism. About 95% of persons DS have a trisomy 21 etiology. It occurs when chromosome pair 21 fails to separate properly before or during fertilization. This anomaly results in the individual having three chromosomes at the 21st cite instead of the usual two, meaning the cells have 47 chromosomes instead of 46. Translocation DS also has an error with the 21st chromosome. However, in this case a portion of the 21st chromosome transfers to another chromosome where they become fused together. The portion of the 21st chromosome usually fuses itself to the 14th, 15th or 22nd chromosome. While the chromosome count remains normal for the individual with translocation DS, the extra material on one of the chromosomes creates problems in the person’s development (Sherrill, 2004). It is estimated that 4% to 6 % of the DS population has translocation DS. The remaining 1% to 4 % of the DS population have mosaic Down Syndrome (Pennington & Bennetto, 1998). Mosaic DS occurs when only some of the person’s cells are trisomic (containing three chromosomes) while other cells are normal. In mosaic DS there are many different combinations of cells that can be affected. Therefore, a person with mosaic DS can have a spectrum of functioning abilities. People can have a relatively normal level of functioning abilities and physical appearance, they can have the stereotypical DS characteristics, or they can fall somewhere in between the two extremes (Sherrill, 2004).

Because DS occurs very close to conception, it affects the growth and development of all of the body including the organs. Therefore, the individual is affected

physically as well as cognitively (Sherrill, 2004). Along with a cognitive disability, DS “is often associated with several physical characteristics such as small stature, short limbs and digits, digital malformations, small nasal and oral cavities (leading to mouth breathing and tongue protrusion), almond shaped and slanted eyes,...joint laxity, and pulmonary hypoplasia” (Durstine and Moore, 2003, p.304).

Pervasive Developmental Disorders

There are five disabilities characterized as Pervasive Developmental Disorders (PDD): (a) autism; (b) Rett’s disorder; (c) childhood disintegrative disorder; (d) Aspergers’s disorder; and (e) pervasive developmental disorder not otherwise specified. While these five disorders each have unique characteristics, they also have similarities that allow them to be grouped together as PDDs. In order to be characterized as having a PDD, one must demonstrate “a severe and pervasive impairment in (a) reciprocal social interaction, (b) communication, and (c) stereotyped behavior, interests and activities” (APA, 2000, p.69). Because these skills are all age dependent, the skills a psychologist observes are chosen based on the child’s age and level of development. During the diagnostic procedures, the observer looks for an absence of the skill or an unusual demonstration of the skill compared to a typically developing individual (Mesibov, Adams, & Klinger, 1997).

The following paragraphs give a more detailed overview of autism, Asperger’s disorder, and pervasive developmental disorder not otherwise specified. Due to the fact that Rett’s Disorder and Childhood Disintegrative Disorder are usually associated with severe or profound mental retardation, they are not discussed further in this paper.

(2000) defines autism as having:

- “Qualitative impairment in social interaction, as manifested by at least two of the following: (a) marked impairment in the use of multiple nonverbal behaviors, such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction, (b) failure to develop peer relationships appropriate to developmental level, (c) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest), (d) lack of social or emotional reciprocity” (APA, 2000, p.75).
- “Qualitative impairment in communication as manifested by at least one of the following: (a) delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime); (b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others; (c) stereotyped and repetitive use of language or idiosyncratic language; or (d) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level” (APA, 2000, p.75).
- “Restrictive repetitive, stereotypical behavior, interests, and activities, as manifested by at least one of the following: (a) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus; (b) apparently inflexible adherence to

specific, nonfunctional routines or rituals; (c) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting or complex whole-body movements); (d) persistent preoccupation with parts of objects” (APA, 2000, p. 75).

A child must demonstrate at least six of the previously listed characteristics to be diagnosed as autistic. These traits must come from all three of the main categories with the largest emphasis placed on social impairment. Therefore, a child must have at least two traits from the social interaction category, one from the communication category, and one from the behavioral category. There are other requirements that must also be met for a child to be diagnosed as autistic. First, Rett’s Disorder or Childhood Disintegrative Disorder cannot better describe the disturbances. Secondly, there must be a delay or abnormal functioning observed in the child in at least one of the following three areas before the age of three: (a) social interaction; (b) language used for social communication; and (c) symbolic or imaginative play (APA, 2000).

While a child must demonstrate certain criteria to be diagnosed as autistic, the severity of the disorder between each child varies dramatically. Because individuals with autism have a large continuum of abilities, it is often referred to as a spectrum disorder. An individual labeled as autistic is placed somewhere on the spectrum falling in or between the categories of low-functioning autism and high-functioning autism (Berkeley, Zittel, Pitney, & Nichols, 2001).

Researchers have shown that at least 75% of children with autism, male or female, show signs of mental retardation (Pennington & Bennetto, 1998). Batshaw and Perret (1992) estimated that 70% of people with autism have mental retardation

with 35% having mild MR, 15% having moderate MR, and 20% having severe or profound MR. Approximately 25% of individuals with autism have what is considered a normal intelligence, while approximately 5% of the autism population has an IQ above 100.

It is important to note that there is a very small number of children with autism who demonstrate amazing savant abilities (Wicks-Nelson & Israel, 2000). When an individual is high functioning in one particular area while most other areas are lower functioning, they are said to have islets of ability or splinter skills. Some examples of splinter skills are exceptional rote memory, an exceptional ability to solve jigsaw puzzles, or the ability to calculate large numbers in a short period. While these skills are impressive, they are often not helpful in the individual's daily life and cannot be used to help cope with general stressors (Batshaw & Perret, 1992).

Asperger's Syndrome. Asperger's Syndrome is defined as:

- “Qualitative impairment in (a) the use of multiple nonverbal behaviors such as eye-to-eye contact, facial expression, body posture and gestures to regulate social interaction, (b) failure to develop peer relationships appropriate to developmental level, (c) lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g. by a lack of showing, bringing, or pointing out objects of interest to other people), (d) lack of social or emotional reciprocity.
- “Restrictive repetitive, stereotypical patterns of behavior, interests and activities as manifested by at least one of the following (a) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus, (b) apparently inflexible adherence to specific,

nonfunctional routines or rituals, (c) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting or complex whole-body movements), (d) persistent preoccupation with parts of objects” (APA, 2000, p. 84).

An individual must demonstrate two of the behaviors from the social interactions category and at least one behavior from the second category. These behaviors must not only be present, but cause significant problems in the individual’s social life, occupation, or other important areas of function. However, the individual cannot demonstrate any significant delays in general language or cognitive development. They must demonstrate age appropriate behaviors with their self-help skills, their adaptive behaviors, and their curiosity regarding the environment. Lastly, the child’s behaviors cannot be better defined by another PDD or schizophrenia (APA, 2000).

Individuals with Asperger’s syndrome (AS) tend to be higher functioning individuals with other PPDs. However, they tend to demonstrate unusual social behaviors and be unaware of social norms. They often have an obsession with one or two different subjects (e.g., cars, bus timetables, pets). At the same time, individuals with AS often have an extensive vocabulary and are able to read and write at a young age. While people with AS have difficulties applying social norms, there are some individuals who function and learn well in a regular educational setting. They are able to develop meaningful friendships, attend college, marry, and have children (Reid & Collier, 2002).

Pervasive Developmental Disorders Not Otherwise Specified. People who do not meet the exact criteria for the other four PPDs but demonstrate behaviors similar to a PPD are labeled Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS). The individual must demonstrate “severe and pervasive impairment in the

development of reciprocal social interaction associated with impairment in either verbal or nonverbal communication skills or with the presence of stereotyped behaviors, interests, and activities...” (APA, 2000, p.84). However, the individual cannot demonstrate characteristics that would qualify as “a specific Pervasive Developmental Disorder, Schizophrenia, Schizotypal Personality Disorder, or Avoidant Personality Disorder” (APA, 200, p.84). For example, an individual may only demonstrates one of the defining characteristics from the social interaction category instead of the two that is needed for an autism diagnosis.

**APPENDIX N:
SUBMISSION GUIDELINES FOR
EDUCATION AND TRAINING IN DEVELOPMENTAL DISABILITIES (ETDD)**

Education and Training in Developmental Disabilities

Editorial Policy

Education and Training in Developmental Disabilities focuses on the education and welfare of persons with developmental disabilities. *ETDD* invites research and expository manuscripts and critical review of the literature. Major emphasis is on identification and assessment, educational programming, characteristics, training of instructional personnel, habilitation, prevention, community understanding and provisions, and legislation.

Each manuscript is evaluated anonymously by three reviewers. Criteria for acceptance include the following: relevance, reader interest, quality, applicability, contribution to the field, and economy and smoothness of expression. The review process requires two to four months.

Viewpoints expressed are those of the authors and do not necessarily conform to positions of the editors or of the officers of the Division.

Submission of Manuscripts

1. Manuscript submission is a representation that the manuscript is the author's own work, has not been published, and is not currently under consideration for publication elsewhere.
2. Manuscripts must be prepared according to the recommendations in the **Publication Manual of the American Psychological Association** (Fifth Edition, 2001). Standard typewriter type, laser, or high density dot printing are acceptable.
3. Each manuscript must have a cover sheet giving the names and affiliations of all authors and the address of the principal author.
4. Graphs and figures should be originals or sharp, high quality photographic prints suitable, if necessary, for a 50% reduction in size.
5. Five copies of the manuscript along with a transmittal letter should be sent to the Editor: Stanley H. Zucker, Special Education Program, Box 872011, Arizona State University, Tempe, AZ 85287-2011.
6. Upon receipt, each manuscript will be screened by the editor. Appropriate manuscripts will then be sent to consulting editors. Principal authors will receive notification of receipt of manuscript.
7. The Editor reserves the right to make minor editorial changes which do not materially affect the meaning of the text.
8. Manuscripts are the property of **ETDD** for a minimum period of six months. All articles accepted for publication are copyrighted in the name of the Division on Developmental Disabilities.

**APPENDIX O:
SUBMISSION GUIDELINES FOR PALAESTRA**

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Information for Authors

PALAESTRA, a refereed quarterly (fall, winter, spring, summer) professional journal, deals with all aspects of sport, physical education, recreation, and related activity areas involving participants with disabilities. Information for short fillers and use in departments is encouraged. Submit dates and other details about conferences, seminars, and other training and in-service programs for inclusion in **PALAESTRA Calendar**.

Focus of **PALAESTRA** is broad, including practical applications for teaching, coaching, and leading; implications and applications of scientific research for training and teaching; administration, supervision, and management; professional preparation and in-service education, innovative ideas and practices; assessment and classifications; relationships of basic sciences to methods and activities for individuals with disabilities; sports medicine and athletic training applied to individuals with disabilities; equipment and supplies used in these programs; professional issues and trends.

A double-blind review process is followed rigorously. Manuscripts are reviewed by members of the editorial board and/or other professional specialists representing all topical areas dealt with in **PALAESTRA**. Manuscripts are accepted for review and consideration on the condition they have not been published previously, submitted simultaneously, or accepted for publication elsewhere. **PALAESTRA** will consider manuscripts rejected by other journals. There are no page or illustration charges.

Terminology

Terminology throughout **PALAESTRA** conforms to current accepted usage. Focus is on people, not disabilities (i.e., students who are blind; athletes with spinal cord injuries; participants who have intellectual disabilities; persons who use wheelchairs for mobility are wheelchair users, not "wheelchair bound," etc.). Reference is to individuals with disabilities, not handicaps, handicapping conditions, or impairments. Authors should apply this policy in their manuscripts.

Guidelines

- Follow American Psychological Association (APA) style of documentation within the text and for references.
- Include sections with each manuscript (each starting on a separate page) for (a) title page, (b) abstract, (c) text, (d) acknowledgements, (e) selected references, (f) photo-graphs/drawings/tables/graphs, (g) legends/cutline information for photographs and other illustrations, and (h) a brief biographical sketch for inclusion with published article. Number pages consecutively in the upper right hand corner of each page, beginning with the title page.
- Include a cover sheet with author name(s), academic or professional title(s), complete mailing address(es), and e-mail contact information. Do not have names or related information on any manuscript pages that will be sent out for review.
- Submit illustrations - photographs, drawings, tables, and/or graphs - to give greater impact to content and its presentation. Photographs/Drawings - color slides, color prints, or black and white prints (5 " x 7" preferred) of good quality can be considered; digital photo illustrations may be sent on a computer disk (CD) in graphic formats, with resolution being a minimum of 300 dpi-600 dpi or higher. (Please, no floppy disks.) Drawings should be in India ink on white background; include a properly identified cut line (caption) for each illustration; **if photographs of persons are used, either subjects must not be identifiable, or their pictures must be accompanied by written permission for use.** Tables/Graphs - number in sequence, cite by number in the text, and include legends for each; double space and place each on a separate sheet; make every effort to send tables and graphs in camera-ready form, so each can be processed directly. If X-rays are to be used as illustrations, submit actual X-ray films (not photographic copies). Illustrative materials become the property of Challenge Publications, Ltd. for possible future use unless instructions requesting their return accompany submission.

The following guidelines are to assist authors in preparing manuscripts to be considered through the **PALAESTRA** review and editorial processes:

- Submit all manuscripts in English.
- Deal with any topic associated with sport, physical education, recreation, dance, and related areas involving participants with disabilities, each interpreted and applied in its broadest way.
- Make the manuscript no longer than 12 to 15 double spaced pages, with illustrations, (8 1/2" x 11" with margins of at least one inch). Include an abstract of approximately 100 words.
- Submit four typed, double-spaced copies of the complete manuscript along with a Zip disk (100) or CD (no floppy disks) utilizing Microsoft Word, MAC version preferred, or PC.
- Direct requests for information about reprints to the Editor; four tear sheets are provided authors of each feature article published.
- Include a stamped, self-addressed envelope for return of unused manuscripts.

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