

## Developing the Social Skills of Young Adult Special Olympics Athletes

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*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 (S<sup>3</sup>) Program that combined classroom instruction with soccer activities. Data were collected through direct observation during soccer practices, parent interviews, and parent rating forms. Visual analysis and qualitative methodology were applied to analyze the four 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 S<sup>3</sup>.*

Social skills are an essential component for life adjustment (Epstein & Cullinan, 1987). 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, many of the skills which are essential for initiating and sustaining social networks, such as joking, talking about a common subject, expressing and interchanging emotions, and asking about another person's interests are deficient in people with mental retardation (MR) and autism spectrum disorder (ASD) (Asher, Parker, &

Walker, 1998; Chadsey-Rusch, 1990; 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 (Sigman et al., 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, 1998, 2001). Difficulties with social skills have also been cited as one of the primary reasons students with disabilities may be unsuccessful in their transition from school to employment and independent living (Chadsey-Rusch, Rusch, & O'Reilly, 1991). Strain and Odom (1986) suggest that a deficiency in social skills during an individual's childhood is the best single predictor of significant problems transitioning into adulthood.

The purposes of the study were to determine if participants could: (a) develop and refine target social skills as a result of a 14-week social skills intervention; (b) generalize the social skills to other environments including school, home, and the community; and (c) maintain the social skills five weeks after the completion of the program. The three targeted social skills were contributing rele-

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**TABLE 1**

**Description of Parents and Participants in S<sup>3</sup>**

<i>Child's Name</i>	<i>Child's Age</i>	<i>Child's Disability</i>	<i>Parent's Name</i>	<i>Age</i>	<i>Parent's Education</i>
Tony	14	Down Syndrome	Laura	38	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

vant information to a conversation, turn taking in a conversation, and making appropriate eye contact. The Social Skills and Sports Program (S<sup>3</sup>) intervention was created specifically for this study and was designed to teach adolescents and young adults who qualify for Special Olympics.

**Method**

*Design*

This study consisted of multiple replications of a single-subject research design, specifically an ABCA 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 controls and data were analyzed as separate case studies.

*Participants*

Four males aged 14 to 24 years ( $M = 17.4$ ,  $SD = 2.57$ ) participated in the study (Table 1). While one female was originally enrolled in the program, she did not complete enough of the data collection process to be included in the study.

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 para-professionals and teachers throughout their

lives in an attempt to improve their social skills. All participants were present for at least 75% of the baseline and classroom phases of the program and 80% of the entire program.

One parent for each participant was involved in the study (Table 1). The five mothers/step-mothers were aged 38 to 50 years ( $M = 45.8$ ,  $SD = 5.03$ ). 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 child.

*Tony.* Tony is a 14-year-old boy with Down syndrome. His speech is often difficult to understand and his utterances consist of one to two words. At the start of the program, he either avoided social interactions or demonstrated inappropriate social skills like tickling people in the community and hugging strangers. Before participating in S<sup>3</sup>, 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.

*Jeff.* Jeff is a 15-year-old boy with autism who often demonstrates echolalia and self-stimulating behaviors. 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. Before participating in S<sup>3</sup>, Jeff had participated in Special Olympics and 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, Kathy is the primary caregiver. She is 47 years old, has completed her associate degree, and works as a nuclear medicine technologist.

*Billy.* Billy is an 18-year-old male with Down syndrome. At the start of the program, Billy tended to avoid social interactions. During conversations, he would only contribute when provided a direct prompt and his contribution was usually a one or two word response that was muttered. He would also angle his body away from the person he was talking to and look directly at the ground. Before participating in S<sup>3</sup>, Billy had participated in Special Olympics through his school. He lives with his mother, Sandy, who is 50 years old. His siblings, nieces, and nephews are often at his home. Sandy has not completed high school and reports her occupation as a “caregiver.”

*John.* John is a 24-year-old man with Down syndrome and ADHD. 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 S<sup>3</sup>, John had participated in a variety of Special Olympic sports. While he had never participated in a social skills training program, he was currently participating in a school job-training program. John lives with his stepmother Martha. John’s grandmother and brother (who also had an intellectual disability) are sometimes in the home, though they do not permanently reside in the home. John’s nephew and older sister also interact with John on a daily basis. Martha is 50 years old, has completed her associate degree, and reported her occupation as “caregiver.”

### *Intervention*

The intervention, titled Social Skills and Sports Program (S<sup>3</sup>) (Alexander, 2008), was a 14-week program that met for 90 minutes twice a week at a local indoor soccer facility and conference room. There were 6 phases of the program; introduction, baseline, classroom, soccer, party, and baseline/retention.

*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. 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.* Researchers have suggested that individuals with disabilities must receive social skills training before being asked to demonstrate the targeted skills in mainstreamed settings (Laushey & Heflin, 2000). 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.

The intervention applied a combination of strategies including direct instruction (Elliott & Gresham, 1993), 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.

Because past researchers have suggested that positive social interactions with peers who have developed social skills are needed if the skills are to be generalized to other settings (Harrington-Licker, 1997; Sisson, Babeo, & Van Hasselt, 1988), four high school aged soccer players who did not have a disability

were 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.* Practicing newly acquired skills in a natural environment leads to a greater level of skill development, generalization, and maintenance (Barnett, Carey, & Hall, 1993; Kohler, Anthony, Steighner, & Hoyson, 2001). Because of the naturally occurring social interactions and fun setting, physical education and sports have been cited as ideal natural environments to practice newly developed social skills (Groft & Block, 2006). In some instances, game experiences have helped people with disabilities to become more capable of interacting (Jansma, 1982; Wehman & Schleien, 1981).

During the soccer phase (Sessions 13–27), participants practiced and developed the skills they learned during the classroom portion of S<sup>3</sup>. 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 the game.

During the 8-minute review sessions that occurred before and after soccer practice, 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.

*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 also 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. Parents were asked to do the activities with the participants for at least 15 minutes four 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.

*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 families in soccer activities, and then participated in an award ceremony and pizza party.

#### *Instrumentation*

*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 (a) family members, (b) people they know in the community, (c) people in

school, and (d) strangers. Other questions focused on parents' and participants' overall opinion of the program.

*Parent Skill Rating Form.* The Alexander Adaptation (2008) 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 using a 5-point-Likert type scale where "1" represented that the "participant almost never demonstrates the skill" and "5" indicated that the "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.

*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. Observers recorded how many times participants demonstrated the targeted behaviors, with whom they demonstrated the behaviors, and the quality of the demonstrated behaviors. The quality of each demonstrated behavior was based on a 3-point scale where "0" represented "not attempting the appropriate behavior," "1" referred to a "beginning level or emerging level of skill proficiency," and "2" represented "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. Inter-observer agreement of 87% was calculated as suggested by Kazdin (1982).

#### *Data Analysis*

All interviews were transcribed verbatim. Four researchers independently analyzed the data using axial coding as recommended by Patton (1990). Subsequent discussion led to a consensus about the higher order and lower order themes in the data, with consensus de-

fining as agreement amongst at least three of the four researchers.

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 focused on the change of skill level and not at the change in number of skill attempts. Therefore, the percentages of correct skills, developing skills, and absence of skills were calculated as a function of total number of skill attempts for each phase of the intervention (baseline, post-classroom, and post-soccer). These percentages were then graphed and visually analyzed. The change in mean percentage of skill attempts from baseline to post-soccer was also calculated.

The Alexander Adaptation (2008) of Baker's Skill Rating Form (2003), called the Parent Skill Rating Form, 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.

The change in skill level reported on the Parent Skill Rating Form was also calculated by finding the difference between stages of the program. Table 2 shows the change of skill level for each participant. The data represent the number of levels participants increased or decreased on the 5 point likert scale. The row of the chart labeled "Baseline-Post Soccer" represents the change in score from what the parent reported before the start of the program to what they reported at the end of the program. It also represents if participant generalized the skill to other domains outside of S<sup>3</sup>. The column labeled Baseline-Retention shows an overall change of skill from before the program started to 5 weeks after the program was complete. Because retention was

**TABLE 2**

**Baseline to Post-Soccer Changes in Mean Observation Scores for the Performance of Targeted Social Skills**

	<i>Acceptable</i>	<i>Undeveloped</i>	<i>Did Not Attempt</i>
<b>Tony</b>			
Turn Taking	+18.2%*	+22.1%*	-14.5%*
Relevant Information	+12.6%*	+3.8%	-16.4%*
Eye Contact	+7.0%*	+5.3%*	-12.2%*
<b>Jeff</b>			
Turn Taking	+6.9%*	-16.1%*	+9.3%*
Relevant Information	+12.7%*	-17.1%*	-0.7%
Eye Contact	+7.5%*	-13.6%*	+6.9%*
<b>Billy</b>			
Turn Taking	+8.1%*	-11.4%*	+3.2%
Relevant Information	+3.3%	-1.1%	-2.0%
Eye Contact	-9.8%*	-14.5%*	+24.3%*
<b>John</b>			
Turn Taking	-5.7%*	+1.4%	+4.3%
Relevant Information	-2.0%	-0.5%	+2.6%
Eye Contact	-3.7%	-0.1%	+3.8%

Note. \* represents a clinically significant change (a change of at least 5%)

looking to see if the change in behavior was maintained 5 weeks after the completion of the program, it also demonstrates retention. Within this chart there are two additional social skills not addressed in other instruments, standing an appropriate distance and maintaining conversation. Standing at an appropriate distance was a skill that was incorporated into the making eye contact lessons. Maintaining a conversation was incorporated into the contributing relevant information lessons.

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.

**Results**

*Tony*

Due to illness, Tony was only observed three times for baseline data collection.

Tony demonstrated a significant improvement in all three-target skills (Figure 1). His largest improvement was in his ability to take turns (Table 2). He also generalized this skill when interacting with family, community, and strangers (Table 3). Five weeks after the completion of the program, Tony maintained his improvement in his turn taking skills.

Based on the observation data, Tony also showed a clinically significant increase in his ability to make eye contact. However, Tony did not generalize this skill. In fact, Laura reported that his ability to maintain eye contact while in a conversation decreased one level. At the retention phase, Laura reported that Tony had returned to this baseline skill level. However, Tony did generalize and retain the ability to stand at an appropriate distance. Laura reported Tony increased four levels when interacting with friends and family, and three levels when interacting with people in the community. Five weeks after the completion of the program, Tony had maintained his skill level in all domains.

Tony also improved his ability to contribute relevant information to the conversation. This skill was generalized to interacting with family

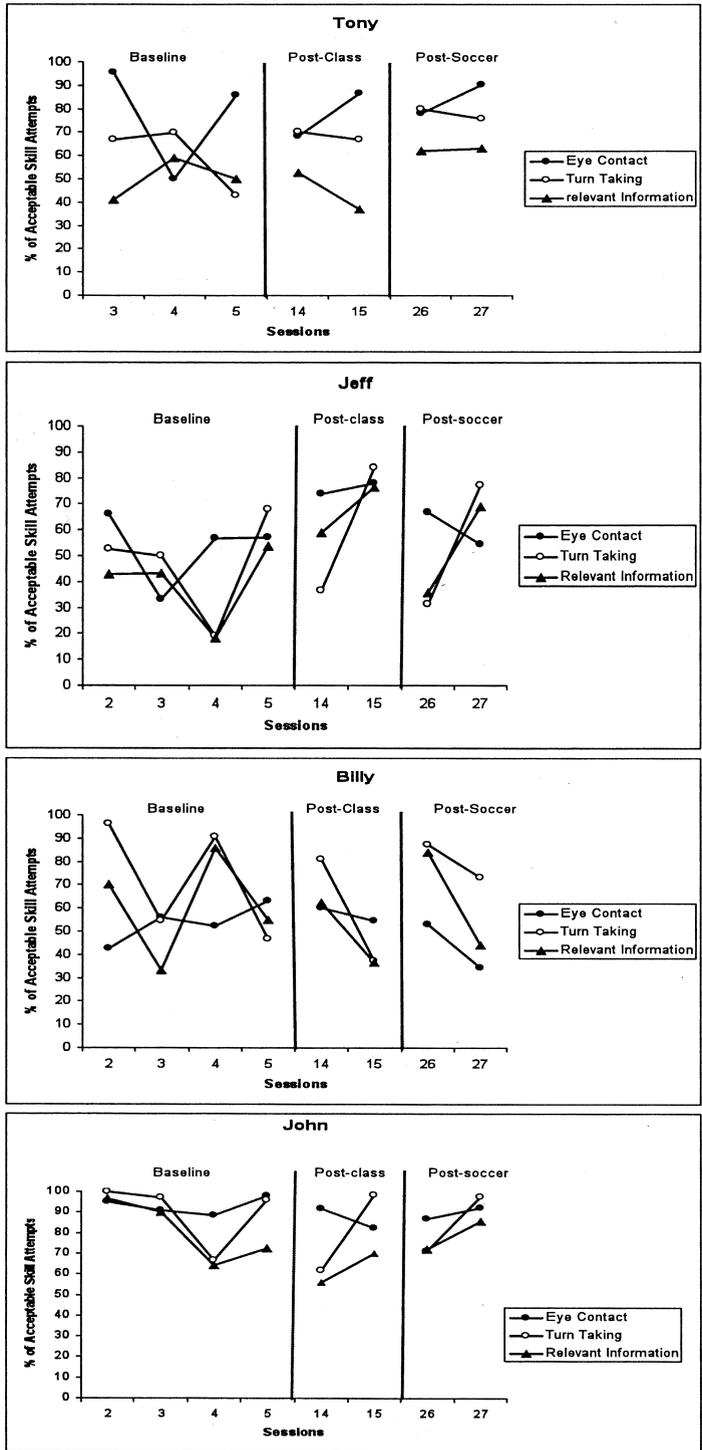


Figure 1. Percentage of acceptable level skill attempts demonstrated for eye contact, turn taking, and relevant information.

**TABLE 3**

**Level of Skill Change Reported on the Parent Skill Rating Form**

	<i>Turn Taking</i>	<i>Relevant Information</i>	<i>Eye Contact</i>	<i>Appropriate Distance</i>	<i>Maintain Conversation</i>
Tony					
Baseline-Post Soccer					
Family	+1	+1	0	+3	+1
Friends	0	+1	-1	+3	+1
Community	+1	0	-1	+3	+2
Strangers	+1	0	-1	+2	+2
Tony					
Baseline-Retention					
Family	+1	0	0	+3	+1
Friends	0	+1	0	+3	0
Community	+1	0	0	+3	+1
Strangers	+1	0	0	+2	+1
Billy					
Baseline-Post Soccer					
Family	+2	+3	+2	+1	+1
Friends	+2	+3	+2	+1	+1
Community	+2	+3	+1	+2	+3
Strangers	+2	+3	0	+2	+3
Billy					
Baseline-Retention					
Family	+3	+2	0	+1	+1
Friends	+3	+2	0	+1	+1
Community	+2	+1	0	+2	+1
Strangers	+2	+1	0	+2	+1
John					
Baseline-Post Soccer					
Family	+2	+2	-1	+1	+1
Friends	+2	+2	-1	+1	+1
Community	+1	+2	-1	0	+1
Strangers	n/a*	+2	-1	+1	+1
John					
Baseline-Retention					
Family	+2	+1	0	0	+1
Friends	+2	+1	0	0	+1
Community	+1	+1	0	-1	+1
Strangers	n/a*	+1	0	+1	+1

Note. \* Parents were instructed to report n/a if they did not know their child's ability in that domain

and friends. While Tony maintained his ability to stay on topic with friends five weeks after the completion of the program, he returned to his initial skill level when interacting with family members.

Based on the Parent Skill Rating Form, Tony also improved his ability to maintain a conversation. In the post-classroom and post-soccer interview Laura mentioned "he has been socially interacting with his siblings with-

out having to be prompted by us. Such as, 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 him-

self to go get it for them. He never used to do that” (retention).

Tony also improved in areas that were not targeted by the program. For example, he decreased his frequency of hugging strangers. Laura 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). Andrea also reported that, “they’re [teachers] not seeing as much anger or frustration. If he gets mad about something it doesn’t turn into a meltdown anymore, he just seems happier and more positive about things” (retention).

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

### *Jeff*

Kathy reported a large amount of “not applicable” responses on the Parent Skill Rating Form. 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 the Parent Skill Rating Form could not be interpreted.

Jeff’s largest improvement in skill development was in his ability to contribute relevant information (Figure 1 and Table 2). Jeff generalized this skill in a variety of domains including with strangers. During her post-classroom interview, Kathy 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 was 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 told Kathy that he was making more appropriate on-topic comments in school as well. Five weeks after the completion of the program, Kathy reported that he had retained his ability to contribute relevant information.

While Jeff increased his abilities to correctly make eye contact, the percentage of attempts that Jeff did not make eye contact also increased by the completion of the program. However, in her interviews, Kathy reported 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, “. . . 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 . . .” (retention).

Within the program, Jeff showed a clinically significant increase in his ability to take turns in a conversation. However, Jeff also increased the number of times that he did not take his turn. 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 Jeff showed improvements in social skills that were not targeted in the program. She 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, “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 the 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 showed the most improvement in his ability to take turns (Figure 1 and Table 2). Sandy reported that his ability to take turns increased two levels in all domains (Table 3). Five weeks after the completion of the program, his mother reported that he had improved another level. However, 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. At retention, she reported that he was continuing to show an increase in rambling when talking to people in the community and strangers though there was no increase when interacting with family and friends.

While the observation data did not suggest a clinically significant improvement in his ability to contribute relevant information, Sandy reported a two level increase in all domains. Billy's retention performance level was higher than when it was measured at baseline though it did decrease from post-soccer to retention.

The observation data and reports from Sandy were also conflicting when looking at eye contact. According to the observation data, Billy decreased in his ability to make eye contact. However, Sandy reported an increase of skill level. Billy's ability to maintain eye contact increased two levels when conversing with family members and friends and one level when interacting with the community. 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, Sandy reported that he returned to his baseline level of eye contact.

Sandy also noted an increase in Billy's ability to maintain a conversation, particularly with people in the community and strangers. Sandy commented on his contributions to conversations during her interviews as well. She stated, "he's more interactive with peo-

ple" (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*

Based on the observation data, John did not show a clinically significant increase in any of the targeted skill levels (Figure 1 and Table 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 Forms 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 clinically decreased (Table 2). However, John's mother reported an increase of two levels when interacting with family and friends, and one level with community members (Table 3). Martha reported that five weeks after the completion of the program, he had retained his ability to take turns. She also commented in the retention 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 John was not always applying the skill, at retention he was still recognizing when he was dominating the conversation.

Based on the observation data, John had a small decrease in his ability to correctly make eye contact. There was conflicting data on whether John was generalizing the skill. In the post-soccer interview, Martha 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). However, on the Parent Skill Rating form, Martha reported that his ability to demonstrate appropriate eye contact in all domains decreased one level. His ability to maintain appropriate distance with family, friends, and strangers increased one level. At the retention stage, Martha reported that John had returned to his original skill level. 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 ability to contribute relevant information while in the program decreased. 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). She also reported an increase on the Parent Skill Rating Form. Five weeks after the completion of the program, Martha commented on how “Lately he is more conscious of the topics he is talking about. Which means he is giving it thought . . . that is something he didn’t often do, to think about if it is an appropriate topic . . . He’s actually making thoughts and adding to the conversation.”

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 and off-task behaviors. 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 was 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.

## Discussion

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, while it is impossible to determine exactly which components of the S<sup>3</sup> program led to the participants’ development of skill, the results support the findings of past research suggesting the need for both direct

instruction (Laushey & Heflin, 2000) and practice in a natural environment (Barnett, et al., 1993; Kohler, et al., 2001). Lastly, future social skills programs can focus on a variety of disabilities at one time. Many curricula focus on teaching social skills to one specific disability population. However, this study demonstrates people with a variety of disabilities can all be taught social skills at the same time. This broad application increases the practicality of a social skills sport interventions, as most programs, classrooms, and after school activities include people with a variety of disabilities.

Parents reported development of social skills that were not specifically taught in the S<sup>3</sup> curriculum. Partners and coaches were careful to model appropriate social skills throughout the program. As a result, it appears participants incidentally learned how to correctly perform the social skills. Participants also witnessed positive results that naturally occur with proper skill execution, creating motivation to attempt the skill themselves. When participants demonstrated any positive social skills in the program, even if it was not a targeted skill, they received positive reinforcement. If participants demonstrated a negative behavior, they were redirected with direct instruction on an appropriate behavior.

One possible explanation for John showing less increase in all targeted skills could be due to a ceiling effect. Compared to Tony, Jeff, and Billy, John correctly demonstrated the targeted social skills much more consistently at baseline. Therefore, there was less room for improvement. However, John's mom did report improvements in his behaviors. Given a clinical significance is one that affects the individual's daily life, the parental reports for John may be the best representation of skill development and generalization. If the skill change is affecting his daily life, then the goal of the program was met.

On the Parent Skill Rating Form 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. As parents focused attention on the skill, they may also have become more critical of the skill execution, resulting in them reporting a lower score.

Whether or not parent's critical nature affected other areas of the survey is unknown. Because 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. Researchers and practitioners could use this survey to determine a baseline level of skill and the amount of social skill development that occurs throughout a program.

The success of S<sup>3</sup> 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 coached people with disabilities before the start of S<sup>3</sup> 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. The skilled staff created a safe environment allowing the participants to feel comfortable enough to try social skills without fear of ridicule. If staff members are not able to create this atmosphere, a similar program may not be as successful.

Further research is necessary to determine if other social skills can be taught in a program similar to S<sup>3</sup>. It is unknown if programs similar to S<sup>3</sup> 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 sports 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. Lastly, the individual effectiveness of the different components of S<sup>3</sup>, namely classroom instruction, soccer practice, and parental teaching, need to be examined individually.

In summary, when young adults who qualify for Special Olympics were taught using the S<sup>3</sup> curriculum, they developed, maintained, and generalized the targeted social skills. Participants also developed other rudimentary social skills that were not directly addressed in the program. Further research is needed to deter-

mine if these findings can be replicated with other social skills, different disability populations, and in different venues.

## References

- Alexander, M. G. F. (2008). *Social skills and sports (S<sup>3</sup>) program: Developing the social skills of young adult special olympic athletes*. Unpublished doctoral dissertation, Michigan State University, Lansing.
- Asher, S. R., Parker, J. G., & Walker, D. L. (1998). Distinguishing friendship from acceptance: Implications for intervention and assessment. In W. M. Bukowski, A. F. Newcomb, & W.W. Hartup (Eds.), *The Company they keep: Friendships in childhood and adolescence* (pp. 366–405). New York: Cambridge: University Press.
- Baker, J. N. (1989). Therapeutic foster parent: Professionally or emotionally involved parent? *Child and Youth Services, 12*, 149–157.
- Baker, J. (2003). *Social skills training: For children and adolescents with Asperger Syndrome and social-communication problems*. Shawnee Mission, KS: Autism Asperger Publishing.
- Barnett, D. W., Carey, K. T., & Hall, J. D. (1993). Naturalistic intervention design for young children: Foundations, rationales, and strategies. *Topics in Early Childhood Special Education, 13*, 430–444.
- Batshaw, M. L., & Shapiro, B. (2002). Mental retardation. In M. L. Batshaw (Ed.), *Children with disabilities, 5th Edition* (pp. 259–290). Baltimore: Paul H. Brookes.
- Bellack, A. S. (1983). Recurrent problems in the behavioral assessment of social skill. *Behavioral Research and Therapy, 21*, 29–41.
- Castaneda, L., & Sherrill, C. (1999). Family participation in challenger baseball: Critical theory perspectives. *Adapted Physical Activity Quarterly, 16*, 372–388.
- Chadsey-Rusch, J. (1990). Teaching social skills on the job. In F. R. Rusch (Ed.), *Supported employment: Models, methods, and issues* (pp. 161–180). Sycamore, IL: Sycamore.
- Chadsey-Rusch, J., Rusch, F. R., & O'Reilly, M. F. (1991). Transition from school to integrated communities. *Remedial and Special Education, 12*, 23–33.
- Elksnin, N., & Elksnin, L. K. (1998). *Teaching occupational social skills*. Austin, TX: PRO-ED.
- Elksnin, N., & Elksnin, L. K. (2001). Adolescents with disabilities: The need for occupational skills training. *Exceptionality, 9*, 91–100.
- Elliott, S. N., & Gresham, F. M. (1993). Social skills interventions for children. *Behavior Modification, 17*, 287–313.
- Epstein, M. H., & Cullinan, D. (1987). Effective social skills curricula for behaviorally disordered students. *Pointer, 31*(2), 21–24.
- Foss, G., Auty, W. P., & Irvin, L. K. (1989). A comparative evaluation of modeling, problem-solving, and behavior rehearsal for teaching employment-related interpersonal skills to secondary students with mental retardation. *Education and Training in Mental Retardation, 2*, 17–27.
- Gerber, S. (2003). A developmental perspective on language assessment and intervention for children on the autism spectrum. *Top Language Disorders, 23*, 74–94.
- Graziano, A. M., & Diament, D. M. (1992). Parent behavioral training: An examination of the paradigm. *Behavior Modification, 16*, 3–38.
- Groft, M., & Block, M. E. (2006). Strategies for teaching children with autism in physical education. *Teaching Elementary Physical Education, 17*(6), 25–28.
- Hager, D., & Vaughn, S. (1995). Parent, teacher, and self-reports of the social competence of students with learning disabilities. *Journal of Learning Disabilities, 28*, 205–217.
- Harrington-Liker, D. (1997). Students need emotional intelligence. *Education Digest, 63*, 7–11.
- Huang, W., & Cuvo, A. J. (1997). Social skills training for adults with mental retardation in job-related settings. *Behavior Modification, 21*, 3–44.
- Jansma, P. (1982). Physical education for the severely and profoundly handicapped. *Exceptional Educational Quarterly, 15*(1), 35–41.
- Joseph P. Kennedy Foundation. (n.d). *Special Olympics*. Retrieved on May 31, 2008.
- Kazdin, A. E. (1982). *Single-case research designs: Methods for clinical and applied settings*. New York: Oxford University Press.
- Kohler, F. W., Anthony, L. J., Steighner, S. A., & Hoyson, M. (2001). Teaching social interaction skills in the integrated preschool: An examination of naturalistic tactics. *Topics in Early Childhood Special Education, 21*, 93–103.
- Laushey, K.M., & Heflin, L.J. (2000). Enhancing social skills of kindergarten children with autism through the training of multiple peers as tutors. *Journal of Autism and Developmental Disorders, 30*, 183-193.
- O'Reilly, M. F., Lancioni, G. E., & Kierans, I. (2000). Teaching leisure social skills to adults with moderate mental retardation; An analysis of acquisition, generalization, and maintenance. *Education and Training in Mental Retardation and Developmental Disabilities, 35*, 250–258.
- Ozonoff, S., & Cathcart, K. (1998). Effectiveness of a home program intervention for young children with autism. *Journal of Autism and Developmental Disorders, 28*, 25–32.
- Patton, M. Q. (1990). *Qualitative Evaluation and Re-*

- search Methods* (2nd ed.). Newbury Park, CA: Sage Publications, Inc.
- Quinn, M. M., Jannasch-Pennel, A., & Rutherford, R. B. (1995). Using peers as social skills training agents for students with antisocial behavior: A cooperative learning approach. *Preventing School Failure, 39*, 26–31.
- Schaefer, C. E., & Briesmeister, J. M. (1989). *Handbook of parent training: Parents as co-therapists for children's behavior problems*. New York: Wiley.
- Sigman, M., Ruskin, E., Arbelle, S., Corona, R., Disamayake, C., Espinosa, M., . . . , Robinson, B.F. (1999). Continuity and change in the social competence of children with autism, Down Syndrome, and developmental delays. *Monographs of the society for research in child development, 64*, 1–139.
- Sisson, L. A., Babeo, T. J., & Van Hasselt, V. B. (1988). Group training to increase social behaviors in young multihandicapped children. *Behavior Modification, 12*, 497–524.
- Strain, P. S., & Odom, S. L. (1986). Peer social initiatives: Effective interventions for social skill development of exceptional children. *Exceptional Children, 52*, 543–552.
- Sugai, G., & Lewis, T. J. (1996). Preferred and promising practices for social skills instruction. *Focus on Exceptional Children, 29*, 1–14.
- Tiedemann, G. L., Georgia, L., & Johnston, C. (1992). Evaluation of a parent training program to promote sharing between young siblings. *Behavior Therapy, 23*, 299–318.
- Towbin, K. E., Mauk, J. E., & Batshaw, M. L. (2002). Pervasive developmental disorders. In M. L. Batshaw (Ed.), *Children with disabilities, 5th Edition* (pp. 407–420). Baltimore: Paul H. Brookes.
- Webster-Stratton, C., & Hammond, M. (1990). Predictors of treatment outcome in parent training for families with conduct problem children. *Behavior Therapy, 21*, 319–337.
- Wehman, P., & Schleien, S. (1981). *Leisure programs for handicapped persons: Adaptations, techniques, and curriculum*. Austin: PRO-ED.
- Woods, J. J., & Wetherby, A. M. (2003). Early identification of and intervention for infants and toddlers who are at risk for autism spectrum disorder. *Language, Speech, and Hearing Services in School, 34*, 180–193.
- Zwald, L., & Gresham, F. M. (1982). Behavioral consultation in a secondary class: Using DRL to decrease negative verbal interactions. *School Psychology Review, 11*, 428–432.

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