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Socio-Emotional Development in Children with Autism Spectrum Disorder

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The University of Southern Mississippi

Socio-Emotional Development in Children with Autism Spectrum Disorder

by

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A Thesis
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Abstract

The purpose of the present study was to determine which lesson from a social skills program would result in the greatest improvement in duration of social interaction for children with a diagnosis of Autism Spectrum Disorder (ASD) between the ages of five and fifteen. The *Superheroes Social Skills Program* (Jensen et al., 2011) includes lesson plans that focus directly on helping children with ASD develop communication skills in group settings. The data indicate that one specific lesson, Participation and Joining In, was responsible for the largest mean increase in duration of social interactions of participants. Social skills lessons were introduced in different orders for each participant. This is significant, because we were able to determine that the social skills lesson on Participating and Joining In is successful regardless of when it is introduced in relation to other lessons, suggesting that it is independently effective and may not require other foundational skills to improve duration of social interaction.

Keywords: Social-emotional development, Autism Spectrum Disorder, social initiation, reciprocated interactions

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List of Abbreviations

ASD	Autism Spectrum Disorder
MA	Mirror Aversion
MOI	Mirror Object Identification
MSI	Mirror Self-Identification
MSR	Mirror Self-Recognition
PEC	Profile of Emotional Competence
SEL	Socio-Emotional Learning
SDO	Systematic Direct Observation

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Introduction

An employee at Dunkin Donuts received first degree burns after a customer threw hot coffee on her, because the customer did not want to pay sales tax on his purchase (*The Boston Globe*, 2006). In Harrison County, Texas, a customer shot a car mechanic in the head after an argument about tire rims (*Fort Worth Star Telegram*, 2007). In 2012, Adam Lanza shot and killed 20 children and six adult staff members at his former elementary school in Newtown, Connecticut (*The New York Times*, 2012). Later reports revealed that Lanza had been previously diagnosed with Asperger's and that his violent outburst could be the result of frustrated attempts to communicate his desires or pain without success (Park, 2014). These horrific incidents are examples of people who experienced a stressful situation, which escalated into a violent crime because of their lack of social skills and inability to regulate their emotions. Socio-emotional development is a term used in psychology and related fields to describe the process of establishing a positive set of problem-solving skills in order to cope during stressful social situations so that one can understand and regulate emotions and express emotions in a mature way (Mikolajczak et al., 2014).

Review of the Literature

The product of socio-emotional development, emotional intelligence, is described by Goleman (2006) as being comprised of five distinct domains, including: 1) self-awareness, 2) self-regulation, 3) social skills, 4) empathy, and 5) motivation. Programs aimed to improve or hasten socio-emotional development in early childhood have been shown to increase academic performance (Docksai, 2010), improve social cooperation (Alegre, 2012), and encourage social justice and tolerance (Zakin, 2012). There is

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research to support programs that are designed to teach specific domains of socio-emotional development.

Self-Awareness

For example, Duff and Flattery (2013) investigated a program geared to improve the self-awareness of six adolescents between the ages of 15 and 21 with diagnoses of autism spectrum disorder (ASD). The study included four measures of self-awareness, including Mirror Aversion (MA: unwillingness to engage with mirror-reflected images), Mirror Object Identification (MOI: the ability to identify objects reflected in mirror), Mirror Self-Identification (MSI: the ability to identify self in third-person), and Mirror Self-Recognition (MSR: the ability to recognize self in first person).

Before the study, two of the students exhibited MSA, two students exhibited MSR, one student exhibited MSI, and one student exhibited MOI. Teachers guided the students in activities, such as identifying picture cards that were reflected in the mirror. If the picture was a rabbit, the teacher would guide the student in writing r-a-b-b-i-t on the mirror with a dry erase marker. The method gradually progressed from third-person reflected images (i.e., objects), second-person reflected images (i.e., the teacher making eye contact with the student in the mirror), and first-person (i.e., the student being the only reflected image).

The study found that the guided mirror activities led two students who exhibited mirror aversion (MA) to progress to mirror self-identification (MSI), where they were able to identify themselves by their names (i.e. "That's Frank"). The student who was only able to identify objects in the mirror (MOI) progressed to be able to identify himself in third-person (MSI), and the student who was only able to identify himself in third-

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person (MSI) increased his mirror self-awareness to recognize himself in first-person (MSR). The two students who were able to recognize themselves in first-person maintained their levels of mirror self-recognition. Overall, four out of six students showed improvement in self-awareness after receiving teacher-led activities of mirror-reflected images (Duff and Flattery, 2013).

Self-Regulation

Another domain of socio-emotional development is self-regulation. A person with low levels of self-regulation abilities may find it difficult to manage emotions or even understand them. One theoretical model outlines three areas of self-regulation: knowledge, ability, and trait (Mikolajczak et al., 2014). Knowledge refers to a person's ability to know how to express emotions. Ability is the application of expressing emotions in an appropriate manner, and trait is an emotional disposition, such as how someone typically expresses emotions. Some people are not able to restrain from crying hysterically or yelling loudly when sad or angry even though one may understand that the emotion is not appropriate in certain circumstances.

In a study about the interpersonal and intrapersonal socio-emotional development, the Profile of Emotional Competence (PEC) was given to participants (Mikolajczak et al., 2014). The PEC measures areas such as identifying, understanding, expressing, regulating, and using one's own emotions (interpersonal) and identifying, understanding, and listening to others' emotions (intrapersonal). Two random samples of 500-person groups of adults were selected as participants. They were asked true/false questions, such as "When I am in an argument, I cannot identify what emotion I am having." Other questions included a 5-point range of answers from "never" to "very often." Trait Positive

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Emotion questions included adjectives, such as serene, happy, and joyful. Trait Negative Emotion questions included negative adjectives, such as sad, depressed, and blue. The study found that intrapersonal emotional competence and interpersonal emotional competencies depended on each other. For instance, if individuals can understand the emotions of others, they may be able to understand their own and vice versa. This could potentially lead to higher performances at jobs and personal relationships (Mikolajczak et al., 2014).

Social Skills

A third domain of socio-emotional development, social skills, was the focus of a 1970 study where researchers used a role-playing approach in an attempt to teach forty-two undergraduate college students assertiveness (McFall and Marston). The students were presented with situations that involved people cutting in line at a movie theater, a car repairman over-charging for services, and an overbearing salesman. The students were able to practice their responses to these situations four times. Afterward, some students were able to hear the recorded conversation in order to evaluate their responses and find areas to improve. The researchers also provided guided questions to evaluate the responses, such as “Was my response direct and to the point?” and “How was my tone of voice?” The results of the study indicated an overall increased improvement of assertiveness after the rehearsal approach of social situations (McFall and Marston, 1970).

Empathy

Another domain of socio-emotional development is empathy. A study conducted by Jessica Schrandt in 2009 focused on teaching children with autism ages four to eight

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how to empathize appropriately. Four students with autism who displayed little empathy toward others were selected for this study. Researchers pretended to be the voice of puppets. The researchers would manipulate the puppets into performing actions based on specific emotions. The emotions ranged from happiness or excitement to sadness or pain to frustration. For pain, the researcher would pretend like the puppet hit its knee on a table and said, "Ouch!" For each emotion, the researchers taught the children three vocal responses and one motor response. For instance, one child learned to pat the puppet's arm and ask, "Are you OK?" The students were tested before and after the treatment to see if there was any improvement in empathy skills. Before treatment, the children's empathy Scores for Sadness and Pain were 0.05 or lower (0-1 scale). After treatment, all of the children scored 1 (0-1 scale) in all areas targeted by the treatment. The children showed extreme improvement in empathy areas after being introduced to empathizing skills courses (Schrandt, 2009).

Motivation

Motivation is another domain of socio-emotional development that researchers have studied. Fifty-four eleven and twelve-year-old girls and boys were selected for a study in order to see if the students could be taught to be more motivated to participate in physical education activities (Leptokaridou et al., 2014). One group was given the opportunity to make more choices during P.E., such as dribbling while running or dribbling while walking and choosing which sport to play. The teachers in this P.E. group also used words, such as "could" and "may" rather than "should" and "must." P.E. teachers for this group responded to all questions, listened carefully to the students, acknowledged the students' participation, and praised the students' efforts. A control

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group was not offered any choices during P.E., and the P.E. teachers expected the students to perform the physical activities in the ideal way, correcting any mistakes immediately.

The students who participated in the P.E. group that were offered the autonomy-supportive behaviors had higher scores of motivation and effort and lower scores of boredom and fear of failure compared to the control group (Leptokaridou et al., 2014).

Effects on Academic Performance

Along with improving the five domains of socio-emotional development, socio-emotional learning is proven to increase academic performance. One program geared to improve academic performance was implemented in 2008 when forty Los Angeles public elementary schools added a socio-emotional learning (SEL) program to their curricula (Docksai, 2010). The SEL program focused on helping children develop interpersonal skills, emotional management skills, problem-solving skills, positive relationships, and communication skills. The daily SEL programs in Los Angeles elementary schools resulted in a 30% increase in the students' academic performances and a 45% decrease in the students' aggressive behaviors. A similar program was added to the curriculum at Hele's School in the United Kingdom. After the courses were integrated, students became more punctual and missed fewer class days. (Docksai, 2010).

Effects on Social Justice

Teaching social justice and tolerance is another area of socio-emotional development that has proven successful in an SEL program. Using art to teach social justice to children ages four to five, Zakin (2012) argued that students should be taught skills to get along with each other in early education. Zakin (2012) stated that tolerance and social justice (action) should be taught when children are very young and that these

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teachings should be included in preschool curricula. According to Zakin (2012), art can be an effective way to teach these lessons of social justice and tolerance. In the study, twenty children between the ages of four and five were selected. Zakin (2012) implemented an art instruction that involved multicultural skin tones. The children were exposed to the different types of skin tones: cinnamon, ebony, caramel, and peach. The children were taught that no skin color was better than the other. By communicating openly about different skin tones, the students were able to identify themselves and realize differences among classmates. The researcher claimed that this open conversation diffused racial tension and taunting.

Another part of the methodology included the instructor's creating an open dialogue for the children. The children were shown a piece of art that included people with different skin tones, and the instructor posed questions, such as "What's your skin tone?" Children pointed to the people in the art that had skin tones similar to their own. When asked, "What's different?" students responded with "We have different hands," "Different skin colors," and "Some wear nail polish." The instructor asked, "Does it matter that skin tones are different?" Students responded with, "No." And finally, "What's the same?" The students responded with answers, such as, "We're people."

The children also participated in an art project that included mixing paint colors to match their own skin tones. After they found the perfect match, the students placed their hands in the paint and printed their palms on a large canvas. After everyone had finished, the artwork display was a picture of their individual hand prints that made a larger picture to symbolize togetherness. In the end, the teacher of the class validated the lessons of teaching social justice and tolerance through art. The art made the lesson much easier to

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open dialogue, and children responded well to the artwork. The students enjoyed finding their own skin tone and making hand prints with their specific, skin-colored paint, according to the teacher. Additionally, the lessons brought a sense of community to the classroom (Zakin 2012).

Another study found that SEL in school systems helped children integrate and apply emotional skills appropriately. The SEL curriculum provided students with a caring environment that enabled them to feel like they were an asset to the classroom and made them more willing to set and achieve their goals. A literature review that included 213 studies of 270,034 students (i.e., elementary to high school age) from 1995 to present that exposed children to SEL programming. The programs included four teaching methods that can be represented by the acronym SAFE: Sequenced (i.e., ordered training methods), Active (i.e., practice), Focused (i.e., time spent on skill development), and Explicit (goal setting). Six student outcomes were measured: 1) social and emotional skills, 2) attitude towards self and others, 3) positive social behaviors, 4) conduct problems, 5) emotional distress, and 6) academic performance. The students who were enrolled in SEL curriculums scored higher than the control group on academic performance, emotional skills, and positive behaviors. The students exposed to SEL had fewer behavioral problems and less emotional distress compared to the control group. Additionally, the review showed that the teacher can be an effective SEL program leader (Durlak, 2011).

Social Skills Interventions

In these studies, one can see that certain SEL programs specialize in one of the five domains of socio-emotional development, as well as related areas, such as academic

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performance (Docksai, 2010), social cooperation (Alegre, 2012), and social justice and tolerance (Zakin, 2012). Social skills are the tools necessary that the individual uses to start and maintain interpersonal relations with the environment (Elliott and Gresham, 1987). In contrast to the other four domains of socio-emotional development (self-awareness, self-regulation, empathy, and motivation), social skills are more amenable to being taught and assessed. For this reason, social skills are much easier to reinforce. By focusing on the social skills domain of socio-emotional intelligence, positive prosocial behaviors can be developed outwardly rather than cognitively. There is a large literature base that supports social skills training and interventions.

For example, one study suggests that social skills training should begin in the household. Alegre (2012) studied the time that mothers spent with their children, the type of activities that they perform, and the effect that this togetherness had on the child's emotional development levels. Children who spent quality time with their mothers doing activities together, such as singing songs, putting puzzles together, and coloring, had fewer emotional and behavioral problems than children who did not have as much quality time with their mothers. The study concluded that the time that mothers spent with their children along with the quality of the activities positively influenced their children's emotional competence skills, such as social cooperation and behavior patterns (Alegre, 2012).

The advantages to teaching social skills include being able to identify specific social behaviors, their consequences, and the situations where they are performed. Some ways to identify these behaviors include assessment from others, self-assessment, behavioral interviews, behavioral role-play measures, and observation. After the social

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deficits are classified, the intervention process can begin. Remedial steps may include direct instruction, behavioral rehearsal, modeling, and coaching (Elliott and Gresham, 1987).

Social skills training is more effective if the instructor is careful in matching specific social skills interventions with specific social skills deficits. Further, the instruction should be very informal, and teachers should take advantage of behavioral situations that occur naturally (classrooms, hallways, and playgrounds). By adopting these strategies, social skills interventions will be more successful (Gresham, 1998).

Autism Spectrum Disorder

Although typical child development includes a natural acquisition of social skills, children with autism spectrum disorder (ASD) require additional instruction and assistance to master them (White 2007). ASD includes Asperger's, autistic disorder, and Pervasive Developmental Disorder. Group training is very effective for social skills interventions in children with ASD. In these groups, the instructor should teach skills, such as introducing conversation and maintaining eye contact. Another promising strategy for social skills training involves framing societal norms as rules that can be learned in order to build on a structured tendency (White, 2007).

Purpose

The purpose of the present study is to show how teaching a social initiation skills program to children with a diagnosis of Autism Spectrum Disorder between the ages five and fifteen affects their ability to participate in group activities. The social initiation skills program includes lesson plans that focus directly on helping children with ASD develop communication skills in group settings. It was hypothesized that when children with ASD

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are exposed to a social initiation skills program, they will increase their abilities to respond to questions and requests, take turns, play cooperatively, and demonstrate conversation skills. More specifically, it was hypothesized that the social skills lesson on participating and joining in would be responsible for the greatest increase in social initiation.

Methods

Participants and Setting

The study included three target children that were participating in summer social skills groups at the University of Southern Mississippi. Dwight was a 7-year-old, white male. Pam was a 10-year-old white female. Jim was an 8-year-old white male. All three children had a diagnosis of Autism Spectrum Disorder (ASD). Each participant was in a larger group of similar-aged peers. Group social skills sessions took place twice weekly for two hours in the afternoon and lasted nine weeks. The sessions took place in a classroom setting at the University of Southern Mississippi. Each week, a new lesson from the social skills program, *Superheroes Social Skills* (Jensen et al., 2011), was implemented by graduate students in a doctoral psychology program in order to teach the group participants appropriate social skills.

Materials

There were several materials used in this study. In addition to a classroom setting for participants and researchers to conduct the workshop, six important components were also used to complete the social skills program.

Video camera. Research assistants set up a video camera to record the interactions of all group participants during the ten-minute free play sessions each day of

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the Superheroes Social Skills program.

Desktop computer to watch videos. Research assistants uploaded all of the videos onto a desktop computer in order to watch the aforementioned videos of participants' social skills interactions during free play sessions.

Observation Recording forms. Observers coded social initiations and interactions for each participant on observation recording forms that included six columns: Initiator, Type of Initiation, Reciprocation, Time Interaction Began, Time Interaction ended, and Notes (see below for details).

Stopwatch. A stopwatch was used to document the exact time each social initiation began and ended in order to calculate the duration of the interaction.

Superheroes Social Skills Program. This program included DVD tutorials, comic books, and power charge cards to aid students in learning and practicing appropriate social behaviors (Jensen et al., 2011).

Toys. For the free play session implemented each day during the program, students were given a variety of toys, including building blocks, a small kickball, and action figures.

Measures

Data collection included systematic direct observation (SDO) of two different behaviors: social initiation and social engagement. Observers recorded the frequency of social initiations and the duration of the resulting interactions for each child. For each initiation, observers recorded whether the target child or a peer initiated the interaction (T or P) and whether the initiation was gestural, physical, or verbal (G, P, or V). A gestural initiation was defined as any type of bodily movement intended to gain the attention of a

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peer (e.g., hand waving or showing a toy). A physical initiation was defined as physical contact with the intent to gain the attention of another individual (e.g., tapping on shoulder). A verbal initiation was defined as any type of vocalization directed towards another individual (e.g., “Hi”). Eye contact alone was not scored as any type of initiation. Observers also recorded whether or not the initiation was reciprocated and the total length of any interaction that resulted from a reciprocated initiation. Finally, observers recorded the details of the interaction in the notes section (i.e., “Hey,” or “tapped peer on shoulder”).

Design and Analysis

The design of the study included a concurrent multiple baseline across the three participants. There were five phases of the design, where “A” was baseline, “B” was social skills lesson 1, “C” was social skills lesson 2, “D” was social skills lesson 3, and “E” was social skills lesson 4. Social skills lessons were counterbalanced across participants’ respective groups to reduce order effects.

Procedure

All video recorded observations took place during ten-minute free play sessions that occurred in between other group activities. Social skills groups were provided with instruction in four specific social skills from the Superheroes Social Skills package including: responding to questions and requests, conversation and topic maintenance, expressing wants and needs, and participating and joining in. The baseline phase was extended for Pam in order to demonstrate functional control over the dependent variable. Also, implementation of the participating and joining in lesson was staggered for each participant in order to examine the effect on social initiation and engagement during free

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time. The Responding to Questions and Requests lesson was implemented first for Dwight and Jim, followed by Conversation and Topic Maintenance, Recognizing and Expressing Wants and Needs, Participating and Joining In. The lesson on Conversation and Topic Maintenance was introduced first to Pam, followed by Participating and Joining In, Recognizing and Expressing Wants and Needs, and Responding to Questions and Requests (see Appendix A).

All social skills lessons began with a Superheroes Social Skills DVD tutorial that presented participants with initial steps for learning each social behavior. The instructors then practiced the skill one-on-one with each participant. In order to reward the participants for properly practicing the skill, instructors colored an oval on each participant's "power charge" card, which is provided in the Superheroes Social Skills package.

Responding to Questions and Requests instructed participants to learn how to respond appropriately using the acronym FEVER (Face the person, give Eye contact, use a nice Voice, have a nice facial Expression, and Relax). The participants were then instructed to listen to the person speaking and choose a way to respond. Examples included "I don't know", "No thank you," answering the question, or doing what the speaker asked.

Conversation and Topic Maintenance instructed participants to say something about a topic, listen to the other person's response and wait their turn, and make a comment or ask a question about what the conversation partner said.

Recognizing and Expressing Wants and Needs instructed participants to choose an appropriate way to ask a question, such as raising their hands, tapping the person twice

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gently on the shoulder, or waiting for a pause in the conversation. The participants decided what they needed or wanted and expressed it.

Participating and Joining In instructed participants to look at the person or group, listen to what they were saying, watch what they were doing, and join in when it was their turn.

Research assistants recorded video and audio footage of all participants in each group with a hand-held video camera during the ten-minute free play session each day of the social skills program. Cameras were set up from a distance that would allow the shot to record all participants. After the completion of the program, research assistants uploaded the videos to a computer to allow observers to document social interactions. Observers watched the videos for only one target child at a time and documented each student's engagements in conversation and activity on observation recording forms (see Measures section for details).

Results

Overall, the social skills lesson on Participating and Joining In established the highest increase in interaction time for every target child. The social skills lesson on Conversation and Topic Maintenance decreased interaction time for every participant, and the social skills lessons on Recognizing and Expressing Wants and Needs and Responding to Questions and Requests showed no consistent results across all three participants. This section details the duration of reciprocated interactions for each participant after each social skills lesson was introduced.

Jim

The mean length of Jim's reciprocated interactions during baseline was 33.08 seconds. After the first skill, Responding to Questions and Requests, was introduced, the

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mean length of his reciprocated interactions increased to 95.11 seconds. After the second skill, Conversation and Topic Maintenance, was introduced, the mean length of his reciprocated interactions decreased to 20.89 seconds. After the third skill, Recognizing and Expressing Wants and Needs, was introduced, the mean length of his reciprocated interactions increased to 43.28 seconds. After the fourth skill, Participating and Joining In, was introduced, the mean length of his reciprocated interactions showed a substantial increase to 281.33 seconds. Overall, Jim's total mean length of reciprocated interactions from phases "B" through "E" was 110.16, 77.08 seconds more than his mean length of 33.08 seconds during baseline (see top panel of Appendix B).

Dwight

The mean length of Dwight's reciprocated interactions during baseline was 97.87 seconds. After the first skill, Responding to Questions and Requests was introduced, Dwight's mean length of reciprocated interactions decreased to 39.59 seconds. After the second skill, Conversation and Topic Maintenance, was introduced, his mean length for reciprocated interactions decreased again to 31.18 seconds. After the third skill, Recognizing and Expressing Wants and Needs, was introduced, the mean length of reciprocated interactions decreased to 26.74 seconds. However, after the fourth skill, Participating and Joining In, was introduced, Dwight showed a remarkably high increase with a mean length of 231.92 seconds. Overall, however, Dwight's total mean length of reciprocated interactions from phases "B" through "E" was 82.35 seconds, 15.50 seconds fewer than his mean length of 97.87 seconds during baseline (see middle panel of Appendix B).

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Pam

The mean length of Pam's reciprocated interactions during baseline was 47.6 seconds. After the first skill, Conversation and Topic Maintenance, was introduced, the mean length of her reciprocated interactions decreased to 12.53 seconds; however, when the second skill, Participating and Joining In, was introduced, the mean length of reciprocated interactions increased to 121.17 seconds. After the third skill, Recognizing and Expressing Wants and Needs was introduced, the mean length of reciprocated interactions decreased again to 15.87 seconds, and after the fourth skill, Responding to Questions and Requests, was introduced, the mean length of reciprocated interactions increased to 55.14 seconds. Overall, Pam's total mean length of reciprocated interactions from phases "B" through "E" was 51.18 seconds, 3.58 seconds more than her mean length of 47.6 seconds during baseline (see bottom panel of Appendix B).

Discussion

The purpose of this component analysis study was to implement the Superheroes Social Skills Program designed for children with a diagnosis of Autism Spectrum Disorder in order to determine which, if any, specific social skills lesson would be responsible for the largest increases in social engagement. We found that the social skills lesson on Participating and Joining In was the most successful component in that each participant showed a dramatic increase of interaction time after this skill was introduced compared to any other social skills implementation. Social skills lessons were introduced in different orders for each participant. This is significant, because we were able to determine that the social skills lesson on Participating and Joining In is successful regardless of when it is introduced in relation to other lessons, suggesting that it is

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independently effective and may not require other foundational skills to improve duration of social interaction. Additionally, we found that the social skills lesson on Conversation and Topic Maintenance caused a decrease in average duration of reciprocated interactions for every participant. Social skills lessons on Responding to Questions and Requests and Recognizing and Expressing Wants and Needs showed no consistency across participant durations. Overall, the lesson on Participating and Joining In garnered longer periods of interaction time when participants verbally, physically, and/or gesturally reciprocated a peer initiation. This study is significant, because instructors who are interested in conducting a social skills workshop for children with a diagnosis of Autism Spectrum Disorder can produce better results using the Participating and Joining In social skills lesson as opposed to any of the other social skills lessons, which established lower interaction time among all participants.

Limitations

Some limitations in the research include the question of whether or not the target participants are able to increase reciprocated interactions outside of the classroom. We are not able to document observations of social skills at the participants' homes or school classrooms. In addition, the research does not follow-up with the target participants' maintenance of social skills. We are also unable to know if the participants maintained their abilities to initiate and engage in social interactions after the summer program.

Future Directions

Because we are unable to know if the results of this study will generalize outside of the context of the social skills program or if the target participant is able to maintain the improvements in interacting with peers after the social skills program ended, future

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directions of research could include conducting research that looks at generalization and maintenance.

Conclusion

Using the Superheroes Social Skills Program, we provided instruction to the participants on how to properly respond to questions and requests by using the acronym FEVER (Face the person, use Eye contact, use a nice Voice, have a nice facial Expression, and Relax), rehearse conversation skills by learning to stay on topic, recognize and express wants and needs, and participate in the group by looking at and listening to other peers. These skills were counterbalanced among participants to reduce ordered effects so that we could determine which social skill, if any, would increase interaction more than any other skill. This component analysis study was constructive in that we were able to determine that the social skills lesson on Participating and Joining In garnered longer durations of reciprocated interactions than any other social skills lesson from the Superheroes Social Skills Program. In other words, only one social skills lesson increased interaction time for every participant. This study is beneficial in that future instructors can use the social skills lesson on Participating and Joining In rather than any of the other social skills lessons, because it produced the best results, with the largest increase in interaction time among the three target children who had a diagnosis of Autism Spectrum Disorder.

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Appendices

Appendix A

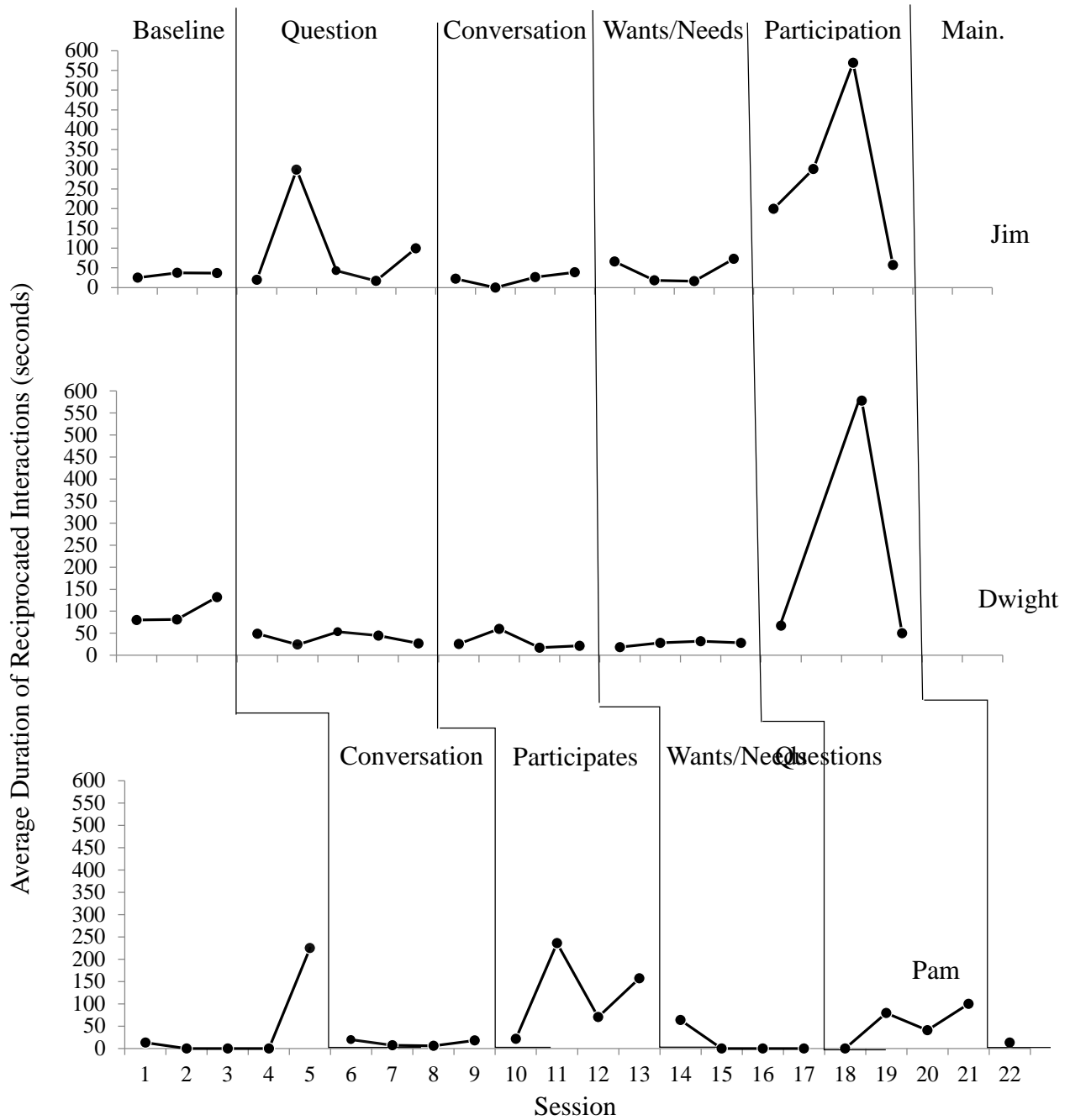
Participant	Lesson 1	Lesson 2	Lesson 3	Lesson 4
Pam	Conversation and Topic Maintenance	Participating and Joining In	Recognizing and Expressing Wants and Needs	Responding to Questions and Requests
Dwight	Responding to Questions and Requests	Conversation and Topic Maintenance	Recognizing and Expressing Wants and Needs	Participating and Joining In
Jim	Responding to Questions and Requests	Conversation and Topic Maintenance	Recognizing and Expressing Wants and Needs	Participating and Joining In

Table 1: Order of Social Skills Lessons for Each Participant

SOCIAL-EMOTIONAL DEVELOPMENT

Appendix B

Figure 1. Component Analysis of Social Skills





INSTITUTIONAL REVIEW BOARD

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NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the “Adverse Effect Report Form”.
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 15060807

PROJECT TITLE: Socio-Emotional Development in Children with Autism Spectrum Disorder

PROJECT TYPE: New Project

RESEARCHER(S): Christiana Whitley

COLLEGE/DIVISION: College of Education and Psychology

DEPARTMENT: Psychology

FUNDING AGENCY/SPONSOR: N/A

IRB COMMITTEE ACTION: Expedited Review

Approval PERIOD OF APPROVAL: 06/09/2015 to 06/08/2016

Lawrence A. Hosman, Ph.D.
Institutional Review Board

SOCIAL-EMOTIONAL DEVELOPMENT

CONSENT

By signing this consent form, I confirm I have read the information in this parental permission form and have had the opportunity to ask questions. I will be given a signed copy of this parental permission form. I voluntarily agree to allow my child to take part in this study.

Child's Name

Parent/Guardian's Name

Parent/Guardian's Signature

Date