

Graduate Students' in Education Knowledge and
Perception of Autism Spectrum Disorder, Social
Interventions, and Their Uses

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Abstract

The purpose of this study was to determine graduate students' in education ($n = 46$) familiarity with and perception of the effectiveness of a variety of social interventions used with students diagnosed with autism spectrum disorder. The measurement tool was a self-report survey designed for this study. Results are reported descriptively. Most of the respondents had limited experience with autism. Direct teaching was the most commonly used intervention and was also selected most often as the most effective intervention by the participants. Group-based instruction and Social Stories were selected second and third most frequently as the most effective intervention. However, since respondents had limited experience working with students with autism spectrum disorder and were unfamiliar with many of the social interventions listed, effectiveness ratings were likely influenced by familiarity. Although a variety of interventions were reported to be effective, there were also reported limitations to the interventions, including lack of resources, generalizability, and time. A variety of social skill behaviors can be addressed with social interventions including increasing prosocial behaviors and decreasing aggression. Implications and ideas for future research are discussed.

CHAPTER I

INTRODUCTION

Overview

Students with autism spectrum disorder (ASD) face many challenges in the classroom, one of which is social mobility. These students find it difficult to navigate everyday scenarios that include communication. Social isolation has been found to affect academic performance and mental health (Dotson, Leaf, Sheldon, & Sherman, 2010; Leaf et al., 2012; Plavnick, Sam, Hume, & Odom, 2013). This is true of all students, not just those diagnosed with autism spectrum disorder. However, due to communication deficits being one of the most immediate tools for diagnosis, it has been the focus for multiple studies.

Much research has been done on students with autism spectrum disorder and social skills. Many types of interventions have been developed and researched. Although there are validity concerns about the intervention research due to small sample sizes (Delaherche et al., 2013; Kasari, Rotheram-Fuller, Locke, & Gulsrud, 2012; Lerner & Mikami, 2012; Wilson, Berg, Zurawski, & King, 2013), multiple studies have suggested that social interventions are effective (Delaherche et al., 2013; Dotson et al., 2010; Francis, McMullen, Blue-Banning, & Haines, 2013; Leaf et al., 2012; Lerner & Mikami, 2012; Plavnick et al., 2013; Wilson et al., 2013). Although there is a body of research on a wide range of social skills interventions for students with autism spectrum disorder, interventionists such as teachers, parents, and other providers remain largely unaware of the myriad of possibilities. Based on the personal observations of this

researcher, this problem is fairly pervasive with the majority of teachers being aware of only Social Stories, video-based modeling, and direct teaching as a means to teach social skills.

This researcher's interest in the problem—that many interventionists are unaware of the variety of social skills interventions available—stems from a concentration in Special Education. After having worked in a nonpublic school, this researcher was exposed to educating students with autism spectrum disorder and implementing social interventions. The variance in effectiveness of the methods used was remarkable. Some students responded well to Social Stories, others did not, and only a few select students received video modeling. Notwithstanding, that was the major tool used with no apparent replacement tool if that type of intervention failed. Why was this the case? There had to be additional methods available beyond Social Stories and video modeling. Social Stories certainly may be the easiest to implement, but was the difficulty of an intervention all that was taken into consideration?

This researcher's original aim was to create an intervention based on the benefits of those researched. However, due to extenuating circumstances, an available population on which to conduct this type of research was not readily available. This prompted a focus on survey research and the basic questions that have piqued the original interest on this topic: Do teachers have experience with students with autism spectrum disorder? Do they try multiple interventions as appropriate? Do they get results? What difficulties do they have implementing interventions? If this research can provide for a better understanding of teachers' familiarity with interventions and the perceived effectiveness of the interventions, perhaps it will be able to guide teachers in pursuing training and experience in using other social skills interventions.

Statement of Problem

The purpose of this study is twofold. First, the study will assess the extent of the familiarity of students in education graduate-level courses with various autism spectrum disorder social skills interventions. Second, it will assess the perceived effectiveness of the interventions in terms of improving social behaviors, generalizability to new settings, ease of implementation, and maintaining gains after the intervention has been discontinued.

Hypothesis

Due to the data being collected not being conducive to inferential statistical analysis, there is no hypothesis.

Operational Definitions

This study has been based off of research on social interventions with students diagnosed with autism spectrum disorder. In this study, respondents identified children as having autism spectrum disorder based off of their Individualized Education Plan (IEP) classification.

The interventions on the survey were as follows: virtual environments, video-based training, direct teaching, Social Stories, PEER approach, and group-based instruction.

Virtual Environments is an online intervention that either includes a single user or multi-users and provides an environment in which the student can interact socially (e.g. café, shop, grocery store) (Irish, 2013).

Video-based training is any scenario that is recorded and viewed by the student. This includes scenes in which teachers, students, or the student himself acts out social situations with correct behaviors (Plavnick et al., 2013).

Direct teaching is an intervention that utilizes the instructor to teach specific skills one-on-one. This may include a breakdown of why the skill is important, prerequisite skills, modeling, and role playing with the student (Kasari et al., 2012; Leaf et al., 2012).

The *PEER approach* includes role reversal. A typically developing peer is taught how to properly interact with a student diagnosed with autism spectrum disorder. Interactions are coached and then faded so that interaction can occur in more naturalistic settings (Kasari et al., 2012).

Social Stories are text, pictures, symbols, or a combination of all that describe a social situation. This story is read by or to the student with the corrective action in the story as well as how it makes others feel. It is sometimes extended with comprehension questions or role playing (Leaf et al., 2012).

Group-based instruction is aimed at basic social skills. This group includes peers with similar skills. The importance of the skills, steps to enacting them, modeling the skills, and role playing the skills are all included in this instruction (Dotson et al., 2010; McMahon, Lerner, & Britton, 2013).

Teachers were asked about whether or not they implemented an intervention.

Implementation is defined as playing a role throughout the process. An outside party, such as a psychologist, may have been the leader and developer of the intervention, but the teacher could have played a key role in its success. A teacher implemented the intervention if he or she led it or

played a direct role. Each intervention was paired with the same questions in order to discover the positives and negatives of each.

In terms of environment, a *resource room* is defined as a classroom where a student goes to receive individual or small group instruction outside of and separate from the inclusive classroom. When talking about the *generalizability* of these various environments, *generalizable* pertains to whether the skill carry over. Does the student take the skill of turn-taking learned on the playground into the classroom?

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

As time has gone by, society has increasingly complicated its social interactions. Long gone are the days of postal mail and land lines. Now, people can communicate instantaneously with others halfway around the world through texting, calling, instant messaging, electronic mailing, and video chatting. Despite our ever-increasing electronic world, face-to-face interaction is still necessary, both for large tasks like school and work, and for smaller tasks such as ordering a cup of coffee. Social skills come naturally to typically developing children. However, children with autism spectrum disorder lack social skills; this lack results in isolation. Asking for help, greeting a friend, and reciprocating conversation comes without a second thought for most but presents a major challenge to those diagnosed with autism spectrum disorder, no matter their placement on the scale.

Many interventions have been tried with children diagnosed with autism spectrum disorder to improve behavior, academics, and social skills. This review of the literature focuses on the social skills with interventions that are both group-based and individual-based, focused on the individual and focused on peers. Section one of this review provides a definition of autism. Section two addresses the social implications of having autism spectrum disorder. Section three discusses social skills interventions and reviews group and individual interventions, noting similarities. Finally, section four suggests future research into autism spectrum disorder.

Defining Autism Spectrum Disorder

It is important to see whether or not literature on autism spectrum disorder defines it in similar ways. Theories behind autism spectrum disorder differ, and so it is crucial to see if researchers define the disorder along the same lines. Most article reviews addressing autism spectrum disorder do not include an operational definition but instead simply provide the symptoms of the disorder. However, Wilson et al. (2013), McMahon et al. (2013), Irish (2013), and Leaf et al. (2012) do provide definitions for autism spectrum disorder. They are in agreement in citing that 1 in 88 children are diagnosed with autism spectrum disorder. Further, the four authors collectively define autism spectrum disorder as a disability that impairs social and communicative behaviors with the presence of repetitive behaviors (Irish, 2013; Leaf et al., 2012; McMahon et al., 2013; Wilson et al., 2013). Irish (2013) goes into detail, including how the disorder is diagnosed, which is “not diagnosed medically but behaviorally,” focusing on, “communication, social behavior, and repetitive behaviors,” (A18). It is assumed that all authors follow the working definition from the American Psychological Association.

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Social Implications of Autism Spectrum Disorder

Due to the nature of autism spectrum disorder, students suffer the implications of having a social and communicative deficit. Literature largely supports the idea that a lack of social skills plays a major role in other areas of life and health. Plavnick et al. (2013), Dotson et al. (2010), Leaf et al. (2012), Francis et al. (2013), and Wilson et al. (2013) all agree that poor social skills can affect academic achievement, placing students at even higher risk for failure. Most researchers also share the idea that mental, emotional, and behavioral wellness are all adversely effected by poor social skills. Delaharche et al. (2013) do not mention social outcomes of autism spectrum disorder, and McMahon et al. (2013) simply state that social skills in the study are

selected due to autism spectrum disorder being a “growing area of public health concern” (p. 23). However, Irish (2013) furthers the implications by connecting the deficits to Theory of Mind, lacking empathy, and Central Coherence Theory, the lack of overall social awareness. Finnigan and Starr (2010) brings up another salient point by stating that those with autism spectrum disorder begin to present with “avoidance behaviors in order to escape social situations, which only further the problems” (p. 323). Given these findings, it is not widely expected that students with autism spectrum disorder will experience abundant academic success. In fact, Owens, Humphrey, and Baron-Cohen (2008) add that social competence can be a long term predictor for those with autism spectrum disorder, so much so that it is “crucial to their future success” (p. 1). It goes without saying then that multiple studies have been conducted on students with autism spectrum disorder and interventions to increase social skills.

Social Skills Interventions

Multiple interventions are used to try to teach social skills to students with autism spectrum disorder. These interventions include virtual environments, video instruction, PEER, CHILD, Teacher Interaction Procedure, Skill Streaming, Sociodramatic Affective Relational Intervention, Social Stories, Parental Emotional Coaching, Social Signal Processing, Literacy-Based Behavioral Interventions, Social use of Language Programme, LEGO therapy, and Music intervention. Depending on the child, some interventions are more appropriate than others. Each requires its own set of prerequisite skills and work to amplify certain social abilities. Likewise, some are applicable to group instruction, while others are best delivered 1:1. Student abilities and preferences should be taken into account when selecting an intervention.

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Individual Interventions

Virtual environments (Irish, 2013), CHILD or the child assisted approach (Kasari et al., 2012), Teacher Interaction Procedure (TIP) (Leaf et al., 2012), Social Stories (Leaf et al., 2012), Parental Emotional Coaching (Wilson et al., 2013), Social Signal Processing (Delaherche et al., 2013), Literacy-Based Behavioral Interventions (Francis et al., 2013), and Music intervention (Finnigan & Starr, 2010) are all used as individual interventions. Virtual environments come in different forms and include different advantages and disadvantages. Virtual environments can be interactive spaces where a single user can individually learn about and practice social skills in a safe environment by communicating with virtual characters or avatars. Single user environments do not provide “real” interaction with others. Virtual environments can be collaborative where autistic users communicate with one another in virtual space, or they can be immersive virtual environments that are three-dimensional, providing the most realistic role-playing experience of the three (Irish, 2013).

CHILD engages the child with autism spectrum disorder by assessing his or her needs, giving direct instruction, and role playing the skill. The Teacher Interaction Procedure, or TIP, involves the teacher describing the skill, providing rationale for the skill, giving cues and characteristics, chunking the skill, modeling, and role playing the skill while giving feedback. Social Stories are passages that target a social behavior. The story describes when the participant should use the behavior, why he should use the behavior, and how using the behavior will make others feel. In Leaf et al.’s (2012) study on TIP versus Social Stories, the story was followed by comprehension questions but can be followed up with other practices such as role playing. Parental emotional coaching was looked at to see if the use of parent coaching with negative

behaviors affected external behaviors, those defined as anger, defiance, aggression, hostility, noncompliance, and antisocial acts (Wilson et al., 2013).

Assisting children with autism spectrum disorder in identifying, labeling, and dealing with emotions should help children learn coping skills. The point of Social Signal Processing is to further research on being able to detect pain and provide therapy through study of imitation, a weak skill in children with autism spectrum disorder. Literacy-Based Behavioral Interventions combine literacy interventions such as Social Stories with behavioral interventions while including the use of media and role playing (Francis et al., 2013). Music intervention simply utilizes musical instruments in the process of imitation. Some of these individual interventions can be modified for group instruction but are not in these particular studies (Finnigan & Starr, 2010).

Group Interventions

Sociodramatic Affective Relational Intervention (SDARI), Skills Streaming, PEERS , Video Instruction, Social Use of Language Programme, and LEGO Therapy are all used as group-based interventions in these studies. SDARI uses interactive games to increase social motivation and creativity. These games are specialized and a natural way to increase communication. Skills Streaming teaches social skills in specific situations with reinforcement of positive skills. Skills streaming requires defining the skill, modeling the skill, establishing skill need, engaging in role playing, providing feedback, and assigning skill homework (Lerner & Mikami, 2012).

PEER focuses on typical children as peer models rather than the child with autism spectrum disorder. PEER teaches a typically-developing, same-aged peer how to engage with students with autism spectrum disorder rather than having students with autism spectrum

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disorder learning how to engage their peers. Peers are selected and taught how they can talk and interact with students diagnosed with autism spectrum disorder appropriately. These interactions between students are increased and teacher prompting is faded out. The goal is naturally occurring social scenarios that will generalize to activities throughout the day (Kasari et al., 2012; McMahon et al., 2013).

Video instruction uses the medium of video in order to teach social skills. The models in the video may be the teacher, peer, or student himself. Videos can be edited to take out external stimuli and are more consistent than modeling (Plavnick et al., 2013). The Social Use of Language Programme utilizes direct teaching by use of stories, activities, and games (Owens et al., 2008). LEGO therapy is a form of collaborative play in which groups of three work together to build a design (Owens et al., 2008). Video instruction, SDARI, and Skill Streaming can all be used on individuals but are used as group interventions in the literature.

Similarities

Many of the interventions have similar characteristics, including direct instruction, modeling, role playing, and feedback (Delaherche et al., 2013; Dotson et al., 2010; Kasari et al., 2012; Leaf et al., 2012; Lerner & Mikami, 2012; McMahon et al., 2013; Plavnick et al., 2013). All have visual elements, although virtual environments, video-based instruction, and Social Stories have the most concrete forms of visual stimulation. Similarly, role playing fulfills kinesthetic learning, while the use of manipulatives in LEGO therapy, music intervention and social signal processing fulfills a more concrete definition of 'hands-on.' Plavnick et al.'s (2013) Video Modeling does not include explicit role playing; rather, the student watches the action being role played. Parental Emotional Coaching (Wilson et al., 2013) also does not expressly state whether role playing is a part of the procedure. The practices in common used in these

interventions are not only useful tools for students with autism spectrum disorder, but outside literature supports the use of these practices for typically-developing peers.

While the types of learning styles targeted are similar, the selected social skills offer more of a variety. Virtual environment techniques train for specific situations with commonplace skills such as ordering food and finding an empty seat (Irish, 2013). Parental Coaching aims at lessening external behaviors (Wilson et al., 2013). While lessening external behaviors ultimately improves the likelihood of others engaging with a student who has autism spectrum disorder, it does not expressly teach social skills. Social Stories, as described by Leaf et al. (2012), puts forth the most complicated and specific social skills, teaching 18 skills from losing graciously to giving compliments.

The majority of the literature in this review focuses on improving social interaction verbally and nonverbally, often looking at turn-taking and offering/asking for help (Delaherche et al., 2013; Dotson et al., 2010; Francis et al., 2013; Irish, 2013; Kasari et al., 2012; Leaf et al., 2012; Lerner & Mikami, 2012; McMahon et al., 2013; Plavnick et al., 2013; Wilson et al., 2013). Verbal interactions were considered to be initiated and reciprocal, while nonverbal interactions looked at personal space, eye contact, and keeping still. Regardless, each intervention's target skill can be modified to fit individual needs.

Future Research

There is room for future research on social interventions with students diagnosed with autism spectrum disorder. These interventions reviewed covered a myriad of social skills all while using different approaches. This is promising because, as more students are diagnosed with autism spectrum disorder, more research is conducted. Similar to their typically-developing

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peers, each student with autism spectrum disorder is unique and responds better to certain interventions. However, a few findings are consistent across the board: sensory input, practice, and generalizability are important for these students.

Students with autism spectrum disorder respond differently to sensory input than their typically-developing peers. Many calming and preventative items such as weighted blankets, music, and fidgets are used with students with autism spectrum disorder. These students also tend to be very visual learners, and watching movies or clips are frequently used as rewards. More research should be focused on video modeling and virtual environments with the extension of role playing with similar and dissimilar peers. Video modeling and virtual environments are more consistent with lessened external stimuli. Additionally, this is likely to be a preferential way to learn.

Research shows that avoiding social interactions can have an effect on academic and mental health. Most of the interventions are aimed at students with autism spectrum disorder learning appropriate social behaviors. However, more research should be conducted on the PEER approach. It is equally important for typically developing students to have these skills as well. It is especially important in the younger grades when typically developing students simply cast the child aside as “stupid,” “weird,” or a “bully.” Both groups of students need practice with reciprocal interactions and how to carry these interactions appropriately from k-12 provides room for future research.

Generalizability is the last and perhaps most important area of consideration for future research. For typically-developing students, asking to sit down in a coffee shop is the same as asking to sit on a bus, but the study on virtual environments made clear that their line of thinking is not the same as a student with autism spectrum disorder. Rectifying that gap where that skill is

transferable to any seating situation is important for students with autism spectrum disorder. This is why adding an extension like role playing or using a peer approach is an important step in teaching those skills to generalize to different areas of life.

Conclusion

Social skills are necessary to maintain emotional and mental health. They have a direct correlation with success, be it academic, financial, or behavioral. Children with autism spectrum disorder, regardless of their placement on the spectrum, will have difficulties with social skills. This deficit can lead to a multitude of problems. Luckily, increasing research has been conducted on students' acquirement of social skills. The basic conclusion is that students need to be taught social skills similarly to academic skills in order to raise their proficiency. Many types of interventions exist that can be tried with students individually or in group settings. Those interventions should be based upon the abilities of the individual and should be curtailed to fit his or her needs. Special attention should be paid to the success of the intervention and to the population size and type used. Little information exists for certain ages, ethnicities, genders, and abilities. More research is necessary to validate studies and explore their generalizability to classrooms and other populations.

Given that more research is needed, teachers and core teams must be cognizant when choosing an intervention to use with a child. Children should also play a role in this as their preference will help to make the intervention more powerful and long-lasting. Allowing the child to help design a story, pick a skill, use a graphic, or choose a role playing partner will help to give him or her practice with executive functioning. Despite the lack of research, it is apparent that any social skills intervention will increase the proficiency of the participant in the end. Increasing the social skills of a child with autism spectrum disorder in the classroom will not

only benefit the child but will also help to increase the fluidity of the inclusive classroom in general, allowing for resources to be targeted less at the individual and more so at everyone increasing not only one student's happiness but all students' happiness.

CHAPTER III

METHODS

Design

This study was based upon action research via a survey. The design is descriptive, based upon the results of the survey. There was no pre- or post surveying, and all participants were given the same self-report survey. This study used a convenience sample as fellow graduate education students, most active teachers, were readily available. Due to the nature of the design, there was no independent or dependent variable.

Participants

The sample was drawn from graduate Masters of Education students at a suburban university in the mid-Atlantic region. This population has various years of experience, ranging from zero to more than twenty years, across different areas of certification. All but two students were certified or seeking certification. Results of the demographics are shown in Table 1.

Table 1

Demographics

Gender		Race		Yrs Teaching		Grades Certified		Yrs Experience with ASD	
Male	22%	Caucasian	72%	0-1	7%	Pk-K	12%	0-.5	41%
Female	78%	African American	22%	1-3	22%	1-5	29%	.5-1	9%
		Bi-racial	4%	3-5	15%	6-8	10%	1-3	9%
		East Asian	2%	5-7	7%	9-12	19%	3-5	15%
				7-15	22%	k-12	26%	5-7	13%
				16-24	15%	Not Certified	0%	7-15	9%
				25-33	0%	Not intending	3%	16-24	4%
				34- 42	2%				

The sample consisted of 42 MED students and four MAT students; 10 were male, and 36 were female. As seen in Table 1, participants categorized themselves according to race as follows: 33 (72%) identified themselves as Caucasian, 10 (22%) identified themselves as African American, two (4%) identified as Biracial, and one (2%) identified as East Asian.

Participants were asked to report their experiences with teaching. If a teacher had multiple certifications, they were counted for each certification. Consequently, the sum of the number of teachers certified is greater than the total number of participants. The largest percentage was in elementary education, grades one to five, for which 17 (29%) of respondents carried the certification. The next greatest area of certification was in kindergarten through twelfth with 15 (26%). The remaining percentages in descending order are as follows: grades nine through twelve, 11(19%), Early Childhood, grades pre-kindergarten to kindergarten, with seven (12%), middle grades, grades six through eighth, with six (10%), and finally, those not intending certification, two (3%). While not specifically asked, nine participants identified themselves as special educators; therefore, this information has been taken into account for the purposes of some comparison to the general educators.

The graduate students were asked to report their years of teaching. Three participants indicated that they had zero to one year of teaching experience. Ten participants noted that they had one to three years of experience. Seven participants fell into the three- to five-year category and eight participants reported five to seven years of experience. Eighteen participants fell into the “other” category and indicated their levels of teaching. Ten of those participants indicated between seven and fifteen years of experience, seven participants indicated 16 to 24 years of experience, and the final participant indicated 36 years of teaching experience.

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Commented [AW7]: I'm waiting for my teacher's response, she said there may be 2 or 3, she isn't sure

In addition, the survey asked for the years of experience in an educational role with students diagnosed with autism spectrum disorder. Nineteen (41%) participants indicated that they had zero to six months of experience, four respondents indicated that they had six months to a year of experience, four respondents reported one to three years of experience. The second greatest amount of respondents, 7 (15%), had three to five years of experience. Next, six participants had five to seven years of experience in an educational role with students diagnosed with autism spectrum disorder. Six participants fell into the “other” category. Four respondents fell into the seven to 15 year category, and the remaining two participants fell into the 16 to 24 years category.

As the participants could have varying degrees of familiarity with the survey matter, it seemed logical to have them gauge how competent they considered themselves. The first question asked how knowledgeable they felt about students on the autism spectrum disorder scale. No respondents reported that they felt “most knowledgeable,” including those who identified as special educators. Eleven (24%) respondents indicated that they felt “very knowledgeable,” 23 (50%) indicated that they were “somewhat knowledgeable,” and 12 (26%) indicated that they were “not knowledgeable.” One participant skipped this question.

Similarly, participants were asked about their aptitude with implementing social interventions. One participant indicated that they felt “extremely” experienced, 14 felt very experienced, 16 felt somewhat experienced, and 15 felt “not at all” experienced.

Instrument

The instrument was designed by this researcher based on her knowledge of autism spectrum disorder interventions. The questions on the survey were multiple choice with one final

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Commented [AW9]: Ohhhh, I was reading this as autism or autism spectrum disorder, will do!

narrative question. The first section pertained to the individual survey taker. Questions included demographics, area of certification, years of experience teaching, and general familiarity with autism spectrum disorder and social interventions. The second section was based on the six styles of social intervention. Each intervention was rated with seven questions. These questions looked at familiarity, generalizability, ease, location, and short- and long-term effectiveness. Some items involved participants selecting all relevant choices from an array, while other items involved students doing Likert scale like ratings. There is no validity or reliability data. (See Appendix A.)

Procedure

Permission was granted by two graduate education professors for this researcher to distribute the survey in their classes. The survey was administered in two classes, “Curriculum Development for a Multicultural Society” and “School Improvement Leadership.” In the first class, the survey was administered to all 22 students at the end of the session, with twenty minutes until official class departure time. Students completed the survey in an average time of four minutes. In the second class, the survey was administered in the beginning. All 24 students completed the survey with an average time of eight minutes. Participants were given a brief overview of the purpose of the survey. It was explained that the further information would be on the survey in the form of a cover letter (Appendix B) and beneath that, they could find a definitions page (Appendix C). It was explained that once they began section two, if they hadn’t used an intervention, they were to skip ahead as indicated by the directions.

Participants were given instructions to circle the letter that best answered the question. If they had multiple students use an intervention, they were to broadly define results. Respondents were asked to answer several questions regarding the social intervention’s effectiveness, ease of

administration, generalizability, and overall experience with the intervention. Participants then completed the survey. The first class of participants had no questions, but the second class had several questions. The researcher answered the questions of each individual as they occurred in the survey process.

The result of the questionnaire were tallied but were not subjected to inferential statistics techniques.

CHAPTER IV

RESULTS

The survey measured the use and effectiveness of several social interventions.

Additionally, it provided a culminating question about effectiveness and a free-response question for additional insights.

Virtual Environment

Only two of the 46 respondents used virtual environments before as an intervention means. The settings used to implement this intervention were an inclusive classroom (2) and a resource room (1). The respondents saw improvement in eye contact, initiated conversation, and decreased aggression. The intervention was generalizable to the related arts and to work. Both respondents saw the progress increase slightly post intervention. They also ranked the intervention with medium difficulty in terms of implementation. Results of the virtual environment intervention are shown in Table 2.

Table 2

Virtual Environment Intervention

Setting	Areas of Increased Behavior	Generalizable to	Post-intervention gains	Difficulty of Implementation
Inclusive Classroom 2	Eye Contact 1	Home 0	Increase Drastically 0	Very Hard 0
Resource Room 1	Initiated Conversation 1	Recess 0	Increase Slightly 2	Hard 0
Related Service 0	Turn Taking 0	Lunch 0	Remain Constant 0	Medium 2

Home	0	Decreased Aggression 1	Related Arts	1	Decrease Slightly	0	Easy	0	
Other	0	Reciprocal Conversation	0	Work	1	Decrease Drastically	0	Very Easy	0
		Academic Performance	0	Community	0	Unsure	0		
		Reciprocal Play	0	None	0				
		Other	0	Unsure	0				

Video-Based Training

Four of 46 respondents had experience implementing video-based Training. The settings included a resource room and related service. Three settings were identified as “other”: work and two self-contained classrooms, a functional academic learning support (FALS) classroom and a special education classroom. The respondents saw improvement in eye contact (3), initiated conversation (1), decreased aggression (1), reciprocal conversation (1), academic performance (1), and reciprocal play (1). The intervention was generalizable to related arts (1), work (3), and the community (2). Three respondents saw progress increase slightly, while one respondent was unsure. In terms of difficulty, one respondent believed the intervention to be hard to implement, two believed it to have medium difficulty, and one saw it as easy to implement. Results of video-based training are shown in Table 3.

Table 3

Video-Based Training

Setting	Areas of Increased Behavior	Generalizable to	Post-intervention gains	Difficulty of Implementation
Inclusive Classroom 0	Eye Contact 3	Home 0	Increase Drastically 0	Very Hard 0

Commented [AW10]: I'm not sure if that's grammatically correct now that I changed it. Is it not a comma before "and work" because it doesn't belong with that list? I THINK IT IS OK EXCEPT THAT I THINK THE COMMA WHEN YOU HAVE A QUOTATION MARK GOES INSIDE THE QUOTATION MARK IN AMERICAN BUT NOT BRITISH WRITING EVEN WHEN YOU ARE USING THE QUOTATION MARK TO SET OFF A WORD,— BUT SARAH WILL LET YOU KNOW ABOUT THAT

Resource Room	1	Initiated Conversation	1	Recess	0	Increase Slightly	3	Hard	1
Related Service	1	Turn Taking	0	Lunch	0	Remain Constant	0	Medium	2
Home	0	Decreased Aggression	1	Related Arts	1	Decrease Slightly	0	Easy	1
Other	3	Reciprocal Conversation	1	Work	3	Decrease Drastically	0	Very Easy	0
		Academic Performance	1	Community	2	Unsure	1		
		Reciprocal Play	1	None	0				
		Other	0	Unsure	0				

Direct Teaching

Twenty-three, or half of the respondents, indicated that they have used Direct Teaching to implement social interventions. Seventeen participants used the intervention in an inclusive classroom, seven participants implemented the intervention in a resource room, and two participants implemented the intervention in a resource room. Four indicated “other” using a FALS classroom, self-contained classroom, work, and a separate day school. Increased performance was seen in eye contact (14), initiated conversation (8), turn taking (7), decreased aggression (11), reciprocal conversation (9), academic performance (10), and reciprocal play (3). The intervention was generalizable to home (3), recess (8), lunch (7), related arts (8), work (5), and community (3), and six respondents replied that they were unsure. Post intervention, two respondents saw progress increase drastically, ten saw a slight increase, five remained constant, four decreased slightly, and two were unsure. Three respondents thought the intervention was hard to implement, sixteen agreed it was of medium difficulty, and four found it to be easy. Results of direct teaching are shown in Table 4.

Commented [S11]: Read this over and revise, please.

Table 4

Direct Teaching

Setting	Areas of Increased Behavior	Generalizable to	Post-intervention Gains	Difficulty of Implementation
Inclusive Classroom 17	Eye Contact 14	Home 3	Increase Drastically 2	Very Hard 0
Resource Room 7	Initiated Conversation 8	Recess 8	Increase Slightly 10	Hard 3
Related Service 2	Turn Taking 7	Lunch 7	Remain Constant 5	Medium 16
Home 0	Decreased Aggression 11	Related Arts 8	Decrease Slightly 4	Easy 4
Other 4	Reciprocal Conversation 9	Work 5	Decrease Drastically 0	Very Easy 0
	Academic Performance 10	Community 3	Unsure 2	
	Reciprocal Play 3	None 0		
	Other 0	Unsure 6		

Social Stories

Fourteen respondents have used Social Stories to implement intervention. Seven respondents implemented the intervention in an inclusive classroom, five used the intervention in a resource room, and two used the intervention in a related service. Five indicated using the intervention in “other,” implementing the intervention at work, in a FALS classroom, music room, recess, and a special education classroom. The intervention lead to increased performance in eye contact (5), initiated conversation (4), turn taking (6), decreased aggression (5), reciprocal

conversation (3), academic performance (3), and “other” (1). Prosocial behaviors from the intervention were generalizable to: home (1), recess (4), lunch (3), related arts (4), work (6), community (3), and none (1). After the intervention, post-intervention gains made as follows: increased drastically (2), increased slightly (7), remained constant (3), decreased slightly (1), and unsure (1). Three respondents thought the intervention was hard to implement, eight found it to be of medium difficulty, and three found it easy. Results of Social Stories are shown in Table 5.

Table 5

Social Stories

Setting	Areas of Increased Behavior	Generalizable to	Post-intervention Gains	Difficulty of Implementation
Inclusive Classroom 7	Eye Contact 5	Home 1	Increase Drastically 2	Very Hard 0
Resource Room 5	Initiated Conversation 4	Recess 4	Increase Slightly 7	Hard 3
Related Service 2	Turn Taking 6	Lunch 3	Remain Constant 3	Medium 8
Home 0	Decreased Aggression 5	Related Arts 4	Decrease Slightly 1	Easy 3
Other 5	Reciprocal Conversation 3	Work 6	Decrease Drastically 0	Very Easy 0
	Academic Performance 3	Community 3	Unsure 1	
	Reciprocal Play 0	None 1		
	Other 1	Unsure 1		

PEER Approach

Five respondents have used the PEER approach as an intervention. Five implemented the intervention in an inclusive classroom, two in a resource room, and one in the related arts. One respondent saw improvement in eye contact, two saw increases in initiated conversation, four saw increased turn taking, one saw decreased aggression, three saw reciprocal conversation, and three saw reciprocal play increase. The behaviors were generalizable to recess (3), lunch (2), related arts (3), work (1), and unsure (1). After the intervention, one respondent saw post-intervention gains increase drastically, three reported a slight increase, and one respondent was unsure. One respondent found this intervention hard to implement, while the other four respondents ranked it with medium difficulty. Results of the PEER approach are shown in Table 6.

Table 6

PEER Approach

Setting	Areas of Increased Behavior	Generalizable to	Post-intervention gains	Difficulty of Implementation
Inclusive Classroom 5	Eye Contact 1	Home 0	Increase Drastically 1	Very Hard 0
Resource Room 2	Initiated Conversation 2	Recess 3	Increase Slightly 3	Hard 1
Related Service 1	Turn Taking 4	Lunch 2	Remain Constant 0	Medium 4
Home 0	Decreased Aggression 1	Related Arts 3	Decrease Slightly 0	Easy 0
Other 0	Reciprocal Conversation 3	Work 1	Decrease Drastically 0	Very Easy 0
	Academic Performance 0	Community 0	Unsure 1	
	Reciprocal Play 3	None 0		

	Other	0	Unsure		
			1		

Group-Based

Thirteen respondents (28%) utilized group-based interventions. Nine of the respondents implemented the intervention in an inclusive classroom, three used a resource room, and two used the related arts. Four respondents reported “other” settings, having implemented the intervention at work, in a FALS classroom, in a special education room, and in a self-contained room. Respondents reported an increase in each area of prosocial behavior; nine reported an increase in eye contact, five reported an increase in initiated conversation, nine reported an increase in turn taking, three reported a decrease in aggression, six reported an increase in reciprocal conversation, five reported an increase in academic performance, two reported an increase in reciprocal play, and one was marked “other” with the response of “no increase.” One reported that the intervention was generalizable to home, three respondents saw the intervention generalize to recess, three respondents saw it generalize to lunch, four saw it generalize to the related arts, three saw it generalize to the community, one respondent saw no generalizability, and three respondents were unsure. Post intervention, eight respondents noted a slight increase of gains, one reported that gains remained constant, one saw a slight decrease, and three respondents were unsure. One respondent marked the intervention as very hard to implement, three respondents found it hard, seven found the intervention to be of medium difficulty, and two found it easy. Results of group-based intervention are shown in Table 7.

Table 7

Group-Based Intervention

Setting	Areas of Increased Behavior	Generalizable to	Post-intervention Gains	Difficulty of Implementation
Inclusive Classroom 9	Eye Contact 9	Home 1	Increase Drastically 0	Very Hard 1
Resource Room 3	Initiated Conversation 5	Recess 3	Increase Slightly 8	Hard 3
Related Service 2	Turn Taking 9	Lunch 3	Remain Constant 1	Medium 7
Home 0	Decreased Aggression 3	Related Arts 4	Decrease Slightly 1	Easy 2
Other 4	Reciprocal Conversation 6	Work 6	Decrease Drastically 0	Very Easy 0
	Academic Performance 5	Community 3	Unsure 3	
	Reciprocal Play 2	None 1		
	Other 1	Unsure 3		

Other

One respondent indicated that he or she had used another intervention. They defined the intervention as being a behavioral chart. This intervention was implemented in an inclusive classroom, resource room, and the related arts. The respondent reported a decrease in aggression. The intervention's results were generalizable to home, recess, lunch, and the related arts. Post intervention, the gains made remained constant, and the respondent indicated that the behavioral charts were easy to implement. Results for other are shown in Table 8.

Table 8

Other

Setting	Areas of Increased Behavior	Generalizable to	Post-intervention gains	Difficulty of Implementation
Inclusive Classroom 1	Eye Contact 0	Home 1	Increase Drastically 0	Very Hard 0
Resource Room 1	Initiated Conversation 0	Recess 1	Increase Slightly 0	Hard 0
Related Service 1	Turn Taking 0	Lunch 1	Remain Constant 1	Medium 0
Home 0	Decreased Aggression 1	Related Arts 1	Decrease Slightly 0	Easy 1
Other 0	Reciprocal Conversation 0	Work 0	Decrease Drastically 0	Very Easy 0
	Academic Performance 0	Community 0	Unsure 0	
	Reciprocal Play 0	None 0		
	Other 0	Unsure 0		

Most Effective Intervention

Respondents were asked their opinion on which intervention was most effective in terms of promoting prosocial behaviors. Three respondents did not answer this question, and so it is not reflective of the full sample. Fourteen respondents found Direct Teaching to be the most effective, twelve respondents had no opinion or indicated no experience, seven found group-based instruction most effective, five found Social Stories most effective, three found the PEER approach to be most effective, two respondents found video-based training to be most effective, and no respondents found Virtual Environments to be the most effective.

Limitations

Respondents were given a free-response question in which to list any limitations they saw with the intervention, but not all respondents answered the free-response question. The most commonly cited limitations were that the creation and implementation of the intervention was time consuming, the intervention was not generalizable, and that technology requirements were limited.

CHAPTER V

DISCUSSION

Due to the data being collected not being conducive to inferential statistical analysis, there was no hypothesis to be evaluated. However, the survey provided information about the familiarity that graduate students in education have with various social skills interventions for students with autism spectrum disorder. The survey also provided information about the perceived effectiveness of the interventions.

Implications of the Results

When looking at the results, it becomes clear that teachers need more exposure to different intervention techniques. The majority of teachers used direct teaching, followed by Social Stories and group-based instruction. Twelve participants, ten of whom were certified or seeking certification in education, indicated no experience when asked to espouse their opinion about the most effective intervention. While direct teaching and group-based teaching allow for hands-on teacher involvement, they consume time, a valuable asset for teachers. Social Stories allow for students to work independently or semi-independently, but what about those students who cannot read or respond better to more stimulating visuals? While these interventions are helpful, exposing teachers and parents alike to a greater variety of interventions would allow for greater tailoring to student needs, better time management of the teacher, and success across environments.

Similar to teachers, students with autism spectrum disorder need more exposure to various environments in conjunction with their intervention. No participant indicated that the intervention occurred at home, and in three of the seven interventions, no participants reported that the prosocial behaviors were generalizable to home. Collaboration needs to exist between home, school, and the community for interventions to be generalizable. In the free response, several respondents indicated that generalizability was an issue, but if there is no connection between classes, grades, home, work, and the community, then that lack of continuity is to be expected. Being consistent with the intervention across settings will only improve chances of prosocial behaviors, and the survey results make it clear that team collaboration is not occurring.

Without a significant amount of exposure to various interventions, respondents found direct teaching to be the most effective, followed by group-based instruction and Social Stories

when asked which intervention they believed to be most effective of the interventions listed. As direct teaching was also the most commonly used method, it is unclear whether its effectiveness is based solely on use or in comparison to another intervention. Certain respondents may have only used direct teaching. Due to this, direct teaching may seem more effective because of its usage within the sample of these respondents. However, group-based instruction is rated ahead of Social Stories in terms of effectiveness, despite participants being more familiar with implementing Social Stories, perhaps showing that despite Social Stories' ease of implementation, its effectiveness may not be equal. One can look at the fact that in direct teaching and group-based instruction there is a human element and the opportunity for modeling and role playing whereas Social Stories provide none of this practice. Modeling and role playing, then, may be key to a successful intervention.

The least effective interventions were virtual environments and video-based training. They were also the least used intervention, with two and four respondents having implemented them. With a common participant complaint about various interventions being time and effort, it is curious that not more participants are aware of virtual environments. Not only does it free up teacher time, but it digitally monitors students and allows them to role play using trial and error. Likewise, video-based training allows students to "see" their social story and the nuances involved in the prosocial behavior. With students diagnosed with autism spectrum disorder responding positively to video stimulation and eliminating teacher monitoring or the need for the student to read, one would think video-based training would be preferable over Social Stories. While these interventions require technology, it is unclear whether the participants were unaware of the interventions, find them time consuming, or see them as more difficult to implement.

Theoretical Consequences

From a theoretical standpoint, one implication from this study is that it is evident that there are a wide variety of interventions that can be used effectively with children with autism spectrum disorder. All intervention types in this study were reported to have at least some effectiveness. This indicates that a wide variety of behavioral strategies (e.g., positive reinforcement, modeling, rehearsal, role playing) can be effective with autism spectrum disorder students.

Threats to Validity

Due to the limitation of having subjects without a wide range of experience with the multiple interventions, the study was not designed for inferential statistical comparison. Consequently, no hypothesis could be tested and no firm conclusions can be made from the findings.

One possible threat to validity is that the subjects were asked by their professors to complete the surveys. Students were selected to be in the study based on their membership in the two classes. Students may have felt obligated to complete the questionnaire but may not have been invested enough in the process to carefully consider each of the questions. Some respondents finished the questionnaire still failing to answer one or more questions. Additionally, some may not have used the definitions page when referring to the interventions. These factors create a threat to external validity.

The sample consisted of 46 education graduate students, but two of the respondents were not intending certification, and many of the students were at an early stage in their career. This skews the results slightly in that the subjects as a whole likely had less experience with teaching,

working with students with autism spectrum disorder, and implementing autism spectrum disorder interventions than the overall teaching population. Therefore, many participants were answering questions without having adequate background knowledge on students with autism spectrum disorder, social interventions, or both. Their perceptions cannot accurately reflect a population of teachers that have a working knowledge and history of implementing interventions. In addition, there may be other characteristics of graduate students in education that make them different from the general teaching population. This limits the external validity of the study in that the results cannot be generalized to the entire teaching population. In addition, since the respondents came from a wide range of certification areas and were taking graduate classes not specifically geared toward special education, results cannot be generalized to special educators or to individuals who are experts in working with children with autism spectrum disorder.

Connections to Previous Studies

Since this study used a survey design, the results cannot be directly compared to studies in which researchers implemented interventions with autism spectrum disorder children and assessed their effectiveness. However, the patterns of use and areas of effectiveness of the interventions reported by the respondents can be compared to the patterns of use and effectiveness of the interventions reported in the literature. In addition, respondents' concerns about the interventions can be compared to the concerns reported by researchers.

The settings in which the interventions described in the literature occurred differed from the settings in which the survey participants used autism spectrum disorder interventions. Francis et al. (2013) were the only ones to implement the intervention during actual class time. Kasari et al. (2012) and Plavnick et al. (2013) used familiar classrooms that were empty, but

other researchers used unfamiliar settings such as research facilities (Delaherche et al., 2013; Dotson et al., 2010; Leaf et al., 2012 ; Lerner & Mikami, 2012). In this survey, the majority of respondents reported that the intervention occurred in a school setting. Even when participants indicated “other,” it still occurred within the school environment.

The types of behaviors reported in the current study to be improved by the interventions are consistent with the behaviors reported to be improved in the literature. Many of the studies looked at improving reciprocal conversation, eye contact, and reciprocal play (Delaherche et al., 2013; Dotson et al., 2010; Francis et al., 2013 ; Irish, 2013 ; Kasari et al., 2012 ; Leaf et al., 2012; Lerner & Makami, 2012; McMahon et al., 2013; Plavnick et al., 2013).

The teacher concerns reported in the current study results are similar to the concerns reported in the literature. With the exception of Kasari et al.’s (2012) study, the studies reviewed for this paper occurred outside of school time and were likely time consuming (Francis et al., 2013). In addition, survey respondents noted that the interventions they’ve tried are not always generalizable. That is also a common question raised by these studies as they are not occurring in natural settings (Dotson et al., 2010; Irish, 2013; Plavnick et al., 2013). Lastly, some studies, like Kasari et al.’s, Leaf et al.’s (2012), and McMahon et al.’s (2013), were comparative and raise the point that initiating two interventions in conjunction may work best. Consistent with the opinion of these researchers, several respondents suggested that a multi-intervention approach may be ideal.

Implications for Future Research

There are multiple avenues for future research suggested by this study. One research direction would be to look at the type of training educators have in autism spectrum disorder

intervention, both during formal credit-eligible education experiences and professional development. Are students in undergraduate educational programs getting any exposure to autism spectrum disorder interventions? At the graduate level, are all students, whether in general or special education, being instructed in a variety of techniques? Although many teachers reported experience with direct teaching, it is not apparent whether or not teachers had training formally or informally with other intervention techniques. Perhaps educators are using direct teaching because it is what they feel is their strong suit, or maybe they are unaware of another way. One could look at a cross section of undergraduate and graduate credit requirements, student teaching placements, or portfolio requirements for graduating teachers.

It is also worthwhile to examine the extent of training in autism spectrum disorder interventions in professional development programs. The professional development programs at schools are a critical component of how educators who are years past their initial education stay informed. One could look at minutes for meetings or survey teachers and principals. If teachers have completed their formal education, they might not be aware of newer autism spectrum disorder intervention techniques if they have not been introduced in professional development.

Another line of research would examine different subgroups of teachers and compare their training and experience with autism spectrum disorder interventions as well as their opinions of the interventions. With more and more autism spectrum disorder students being educated in inclusive settings, general educators have an ever increasing need to know how best to serve their students with disabilities. General education and special education teachers could be compared in their training experiences with autism spectrum disorder as well as in their perceptions of the value of the interventions. Comparing education programs of general and special educators may reveal why teachers lean toward specific techniques due to either the ease

or lack of knowledge. Comparing opinions about effectiveness could provide insight into how well interventions that work in a small group setting with a low teacher to student ratio work in larger settings. In addition, it would provide guidance to special educators and psychologists who consult with general education teachers in suggesting strategies to general education teachers.

It would be interesting to explore the basis for the greater experience with the autism spectrum disorder population reported by the elementary school teachers in the study. A study could examine whether the greater experience level with autism spectrum disorder of the elementary school teachers was due to the disproportionate representation of elementary school teachers in the sample, a greater proportion of autism spectrum disorder students at the elementary level as compared to the secondary level, or the fading out of social interventions for autism spectrum disorder students as they pass through the grades.

Additionally, as indicated by the research, many studies on social interventions have been based on non-natural settings. Participants from this study are using interventions during school time and within the school environment. Therefore, they have different constraints based upon resources and time. Future research could look at accommodating teachers by taking into consideration time constraints and the resources available, all while increasing the generalizability of the results.

It would also be valuable to survey individuals who have greater expertise with autism spectrum disorder than those in the current study. Looking at how special educators, paraprofessionals who work with autism spectrum disorder students in a one-on-one capacity, or related service providers respond to the survey may reveal more insight into the use of social interventions with students diagnosed with autism spectrum disorder. Surveying those

categorizing themselves at least as very knowledgeable and very experienced would serve as the basis of comparison for the effectiveness of interventions using inferential statistics.

Conclusions

This survey has revealed that the sample did not have a wealth of experience with students diagnosed with autism spectrum disorder or with implementing social interventions. While the largest number of participants had more than seven years of teaching experience, the largest group was represented by zero to six years of experience with students with autism spectrum disorder. The largest number of participants had experience with direct teaching. Familiarity with the interventions may have impacted the ratings of effectiveness. Based upon the experiences of this sample, participants ranked direct teaching, group-based instruction, and Social Stories, respectively, as most effective. Respondents' ratings indicated that multiple interventions can impact social skills; however, there are limitations to the interventions including a lack of resources, generalizability, and time. A variety of social skill behaviors can be addressed with social interventions, including increasing prosocial behaviors and decreasing aggression. As research moves forward, hopefully teachers, parents, and providers will collaborate and receive the necessary tools to successfully serve the autism spectrum disorder population, not only socially but academically and mentally.

Commented [A12]: I LIKE YOUR NEW CONCLUSION!!

Commented [AW13]: Thanks!

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Appendix A Survey

Directions: *Circle the letter that best answers the question.*

1. Please indicate your gender:
 - a. Male
 - b. Female
 - c. Prefer not to respond

Commented [A15]: You'll need to indicate that this is a survey being completed for Action Research related to interventions for Autism Spectrum Disorder

Commented [AW16]:

Commented [A17]:

2. Please indicate your race:

- a. Caucasian (White/of European ancestry)
- b. African American (Black/of African ancestry)
- c. East Asian (Chinese, Japanese, Korean, etc.)
- d. South East Asian (Cambodian, Laotian, Vietnamese, Indian, etc.)
- e. Pacific Islander (Filipino, Samoan, etc.)
- f. Hispanic/Latino/Chicano/Puerto Rican
- g. Bi-racial/Mixed/Multicultural/Multi-racial
- h. Prefer not to respond
- i. Other: _____

3. Please indicate your level of experience teaching:

- a. 0-1 years
- b. 1-3 years
- c. 3-5 years
- d. 5-7 years
- e. Other: _____

Commented [A18]: You also need demographion questions like race and gender.

4. Please indicate your area(s) of certification:

- a. Early Childhood (Pre-k- K)
- b. Elementary Education (1-5)
- c. Middle Grades (6-8)
- d. Secondary Education (9-12)
- e. K-12

Commented [A19]: I'm not sure everyone taking classes is necessarily already certified

Commented [A20]: wouldn't there also be people with special education certification

f. Not yet certified

g. Not intending certification

h. Other: _____

5. Please indicate your level of experience in an educational role with students diagnosed

with autism:

a. 0-6 months

b. 6 months- 1 year

c. 1-3 years

d. 3-5 years

e. 5-7 years

f. Other: _____

6. Please define how knowledgeable you feel about students on the Autism spectrum:

a. Most knowledgeable

b. Very knowledgeable

c. Somewhat Knowledgeable

d. Not knowledgeable

7. How experienced are you at implementing social interventions:

a. Extremely

b. Very

c. Somewhat

d. Not at all

Commented [A21]: Do all the assistant coaches get teacher certifications? I also think there can be people working at community colleges that don't need teacher certification, even if they are actually teaching.

Commented [A22]: I think this needs to be broken down more. I doubt there are many students with entire years of working with ASD students. It also isn't clear what "experience" means. A person could have spent a year in college volunteering with an autism program; a person could have taught a class full of autism students for a year; and a person could have had one autistic student. Maybe you can phrase this as how many years have you been in an educational role (e.g., teacher, instructional assistant) with student(s) with ASD. You might want a question along the lines of How knowledgeable do you feel about ASD. 1) not at all 2) somewhat 3) very and 4) extremely. Then another question could be: How experienced are you at implementing interventions for students with ASD and then have the same categories.

The following questions are on the types of interventions used with students diagnosed with autism. Please refer to the definitions on page 1 if needed:

Directions: Please answer all questions that apply to you, some questions may have multiple answers. If you have not used an intervention, skip to the next question indicated about intervention. If the answer “other” applies, write in a response. **Note: “implementation” can involve being the primary designer/instructor for an intervention or it can involve using the intervention with a student while in a supportive role.*

8. Have you implemented Virtual Environments:

- a. Yes
- b. No (Skip to #14)

9. Please indicate the setting(s) in which the intervention occurred:

- a. Inclusive Classroom
- b. Resource Room (A separate room to receive 1:1 or small group support)
- c. Related Service (Speech, Occupational Therapy, Counseling, etc)
- d. Home
- e. Other: _____

Commented [A23]: do you mean regular education Inclusive Classroom?

Commented [A24]: do you specifically mean SPED resource room

Commented [A25]: what do you mean--speech, OT, etc.?. where would a reading specialist fall

10. In which area(s) did you see increased performance:

- a. Eye contact
- b. Initiated conversation
- c. Turn Taking
- d. Decreased Aggression
- e. Reciprocal Conversation
- f. Academic Performance
- g. Reciprocal Play

h. Other: _____

11. In which area(s) were the intervention's results (prosocial behaviors) generalizable to:

- a. Home
- b. Recess
- c. Lunch
- d. Related Arts/ Electives
- e. Work
- f. Community
- g. None
- h. Unsure

12. **Post-intervention**, did gains made:

- a. Increase drastically
- b. Increase slightly
- c. Remain constant
- d. Decrease slightly
- e. Decrease drastically
- f. Unsure

Commented [A26]: you mean the intervention has been stopped?

13. How would you rate the difficulty of the intervention to implement:

- a. Very hard
- b. Hard
- c. Medium
- d. Easy
- e. Very Easy

14. Have you implemented Video-Based Training:

- a. Yes
- b. No (Skip to #20)

15. |

Commented [S27]: Renumber?

16. Please indicate the setting(s) in which the intervention occurred:

- a. Inclusive Classroom |
- b. Resource Room (A separate room to receive 1:1 or small group support)
- c. Related Service (Speech, Occupational Therapy, Counseling, etc) |
- d. Home
- e. Other: _____

Commented [A28]: do you mean regular education Inclusive Classroom?

Commented [A29]: do you specifically mean SPED resource room

Commented [A30]: what do you mean--speech, OT, etc.?; where would a reading specialist fall

17. In which area(s) did you see increased performance?

- a. Eye contact
- b. Initiated conversation
- c. Turn Taking
- d. Decreased Aggression
- e. Reciprocal Conversation
- f. Academic Performance
- g. Reciprocal Play

h. Other: _____

18. In which area(s) were the intervention's results (prosocial behaviors) generalizable to:

- a. Home
- b. Recess
- c. Lunch
- d. Related Arts/ Electives
- e. Work
- f. Community
- g. None
- h. Unsure

19. **Post-intervention**, did gains made:

- a. Increase drastically
- b. Increase slightly
- c. Remain constant
- d. Decrease slightly
- e. Decrease drastically
- f. Unsure

Commented [A31]: you mean the intervention has been stopped?

20. How would you rate the difficulty of the intervention to implement:

- a. Very hard
- b. Hard
- c. Medium
- d. Easy
- e. Very Easy

21. Have you implemented Direct Teaching:

- a. Yes
- b. No (Skip to #26)

22. Please indicate the setting(s) in which the intervention occurred:

- a. Inclusive Classroom
- b. Resource Room (A separate room to receive 1:1 or small group support)
- c. Related Service (Speech, Occupational Therapy, Counseling, etc)
- d. Home
- e. Other: _____

Commented [A32]: do you mean regular education Inclusive Classroom?

Commented [A33]: do you specifically mean SPED resource room

Commented [A34]: what do you mean--speech, OT, etc.?; where would a reading specialist fall

23. In which area(s) did you see increased performance?

- a. Eye contact
- b. Initiated conversation
- c. Turn Taking
- d. Decreased Aggression
- e. Reciprocal Conversation
- f. Academic Performance
- g. Reciprocal Play
- h. Other: _____

24. In which area(s) were the intervention's results (prosocial behaviors) generalizable to:

- a. Home
- b. Recess
- c. Lunch
- d. Related Arts/ Electives

- e. Work
- f. Community
- g. None
- h. Unsure

25. **Post-intervention**, did gains made:

- a. Increase drastically
- b. Increase slightly
- c. Remain constant
- d. Decrease slightly
- e. Decrease drastically
- f. Unsure

Commented [A35]: you mean the intervention has been stopped?

26. How would you rate the difficulty of the intervention to implement:

- a. Very hard
- b. Hard
- c. Medium
- d. Easy
- e. Very Easy

27. Have you implemented Social Stories:

- a. Yes
- b. No (Skip to # 32)

28. Please indicate the setting(s) in which the intervention occurred:

- a. Inclusive Classroom
- b. **Resource Room** (A separate room to receive 1:1 or small group support)

Commented [A36]: do you mean regular education Inclusive Classroom?

Commented [A37]: do you specifically mean SPED resource room

c. Related Service (Speech, Occupational Therapy, Counseling, etc)

d. Home

e. Other: _____

Commented [A38]: what do you mean--speech, OT, etc.?; where would a reading specialist fall

29. In which area(s) did you see increased performance?

a. Eye contact

b. Initiated conversation

c. Turn Taking

d. Decreased Aggression

e. Reciprocal Conversation

f. Academic Performance

g. Reciprocal Play

h. Other: _____

30. In which area(s) were the intervention's results (prosocial behaviors) generalizable to:

a. Home

b. Recess

c. Lunch

d. Related Arts/ Electives

e. Work

f. Community

g. None

h. Unsure

31. Post-intervention, did gains made:

- a. Increase drastically
- b. Increase slightly
- c. Remain constant
- d. Decrease slightly
- e. Decrease drastically
- f. Unsure

Commented [A39]: you mean the intervention has been stopped?

32. How would you rate the difficulty of the intervention to implement:

- a. Very hard
- b. Hard
- c. Medium
- d. Easy
- e. Very Easy

33. Have you implemented the PEER Approach:

- a. Yes
- b. No (Skip to #38)

34. Please indicate the setting(s) in which the intervention occurred:

- a. Inclusive Classroom
- b. Resource Room (A separate room to receive 1:1 or small group support)
- c. Related Service (Speech, Occupational Therapy, Counseling, etc)
- d. Home

Commented [A40]: do you mean regular education Inclusive Classroom?

Commented [A41]: do you specifically mean SPED resource room

Commented [A42]: what do you mean--speech, OT, etc.?; where would a reading specialist fall

e. Other: _____

35. In which area(s) did you see increased performance?

- a. Eye contact
- b. Initiated conversation
- c. Turn Taking
- d. Decreased Aggression
- e. Reciprocal Conversation
- f. Academic Performance
- g. Reciprocal Play
- h. Other: _____

36. In which area(s) were the intervention's results (prosocial behaviors) generalizable to:

- a. Home
- b. Recess
- c. Lunch
- d. Related Arts/ Electives
- e. Work
- f. Community
- g. None
- h. Unsure

37. Post-intervention, did gains made:

- a. Increase drastically
- b. Increase slightly
- c. Remain constant

Commented [A43]: you mean the intervention has been stopped?

- d. Decrease slightly
- e. Decrease drastically
- f. Unsure

38. How would you rate the difficulty of the intervention to implement:

- a. Very hard
- b. Hard
- c. Medium
- d. Easy
- e. Very Easy

39. Have you implemented Group-based Instruction:

- a. Yes
- b. No (Skip to #44)

40. Please indicate the setting(s) in which the intervention occurred:

- a. Inclusive Classroom
- b. Resource Room (A separate room to receive 1:1 or small group support)
- c. Related Service (Speech, Occupational Therapy, Counseling, etc)
- d. Home
- e. Other: _____

Commented [A44]: do you mean regular education Inclusive Classroom?

Commented [A45]: do you specifically mean SPED resource room

Commented [A46]: what do you mean--speech, OT, etc.?. where would a reading specialist fall

41. In which area(s) did you see increased performance?

- a. Eye contact
- b. Initiated conversation
- c. Turn Taking
- d. Decreased Aggression

- e. Reciprocal Conversation
- f. Academic Performance
- g. Reciprocal Play
- h. Other: _____

42. In which area(s) were the intervention's results (prosocial behaviors) generalizable to:

- a. Home
- b. Recess
- c. Lunch
- d. Related Arts/ Electives
- e. Work
- f. Community
- g. None
- h. Unsure

43. Post-intervention, did gains made:

- a. Increase drastically
- b. Increase slightly
- c. Remain constant
- d. Decrease slightly
- e. Decrease drastically
- f. Unsure

Commented [A47]: you mean the intervention has been stopped?

44. How would you rate the difficulty of the intervention to implement:

- a. Very hard
- b. Hard

- c. Medium
- d. Easy
- e. Very Easy

45. Have you implemented Other : _____

- a. Yes
- b. No (Skip to # 50)

46. Please indicate the setting(s) in which the intervention occurred:

- a. Inclusive Classroom _____
- b. Resource Room (A separate room to receive 1:1 or small group support) _____
- c. Related Service (Speech, Occupational Therapy, Counseling, etc) _____
- d. Home
- e. Other: _____

Commented [A48]: do you mean regular education Inclusive Classroom?

Commented [A49]: do you specifically mean SPED resource room

Commented [A50]: what do you mean--speech, OT, etc.?; where would a reading specialist fall

47. In which area(s) did you see increased performance?

- a. Eye contact
- b. Initiated conversation
- c. Turn Taking
- d. Decreased Aggression
- e. Reciprocal Conversation
- f. Academic Performance

g. Reciprocal Play

h. Other: _____

48. In which area(s) were the intervention's results (prosocial behaviors) generalizable to:

a. Home

b. Recess

c. Lunch

d. Related Arts/ Electives

e. Work

f. Community

g. None

h. Unsure

49. Post-intervention, did gains made:

a. Increase drastically

b. Increase slightly

c. Remain constant

d. Decrease slightly

e. Decrease drastically

f. Unsure

Commented [A51]: you mean the intervention has been stopped?

50. How would you rate the difficulty of the intervention to implement:

a. Very hard

b. Hard

c. Medium

d. Easy

e. Very Easy

51. In your opinion, which program resulted in the greatest improvement in prosocial

behaviors? *Prosocial behaviors include: eye contact, turn taking, reciprocal*

conversation, initiated conversation, etc.

- a. Virtual Environments
- b. Video-based Training
- c. Direct Teaching
- d. Social Stories
- e. PEER approach
- f. Group-based instruction
- g. Other: _____

52. What limitations do you see in any or all of the interventions used (difficulty, effectiveness, generalizability, etc)? Please list the specific intervention(s) and the reason why.

- a. _____

Commented [A52]: need to define You'll also need a question for each one to indicate whether the person had experience with it. For ex, for Virtual Environments-Do you have experience with working with students with whom this technique has been used? (You do not have to have been the person teaching the intervention). Yes or No. If the answer is yes, please respond to the following. 1) Did you see an increase in pro-social behavior; 2) In which area(s) did you see increased performance; 3) Did the results of the intervention generalize to #8 options, 4) Was the intervention easy to implement. It is OK to have a which one is the best question, but if you stick with the way the survey is currently worded, you'll not really have a way of knowing the effectiveness of any particular intervention for any particular behavior. Plus, a person could think that Virtual Environments generalized to home but Social Stories generalized to recess and you would have no way of knowing which was which.

Appendix B

Survey Cover Letter

Social Interventions and Autism Survey

Dear Participant,

My name is Alycia Woodruff and I am a graduate student in the M.ED program with a focus on special education. As part of my course work, I am required to conduct a project for action research. This survey on social interventions and autism is part of my research fulfilling this requirement. The purpose is to help evaluate teacher's needs for social interventions with students diagnosed with autism.

In this packet, you will find this cover letter, descriptions of the social interventions, directions, and survey questions. The survey is mostly multiple choice with a free response question at the end. It should take 5-15 minutes, depending upon your experience, to complete. If you have several students to which the intervention questions apply, please choose the answers that most broadly apply. Your identity will remain anonymous and results will be published in the form of a culminating paper and presentation in December, 2014.

Thank you in advanced for your participation, should you have any questions, you may reach me at Alycia.woodruff@goucher.edu.

Thank you,

Alycia Woodruff

Appendix C

Definitions of Interventions Used in This Survey

Social Interventions and Autism

The following are social interventions described for the purpose of this survey:

1. Virtual Environments: An online environment that either includes a single user or multi-users in with the student can interact socially with preset environments (Café, shop, grocery store, etc).
2. Video-based Training: Any scenario that is recorded and viewed by the student. This includes scenes in which teachers, students, or the student himself act out social situations.
3. Direct teaching: Any scenario that is specifically taught to the student by an instructor. This may include a breakdown of importance, pre-requisite skills, modeling, and role-playing with the student.
4. Social Stories: A scenario which has been broken down into text, pictures, symbols or a combination of all. This story is read by or to the student with the corrective action in the story as well as how it makes others feel.
5. PEER Approach: this includes role reversal. A typically developing peer is taught how to properly interact with a student diagnosed with autism. Interactions are coached and then faded so that interaction can occur in more naturalistic settings.
6. Group-based instruction: Group-based instruction is aimed at basic social skills. This group includes peers with similar skills. Importance of the skills, steps to enacting them, modeling the skills, and role playing the skills are all included in this instruction.