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A Guiding Hand: The Role of Teachers in the Social Functioning of Children with Autism
Spectrum Disorder in Regular Education Classrooms

A dissertation submitted in partial satisfaction of the
requirements for the degree of Philosophy
in Education

by

Cori Jo Yoshiko Fujii

2014

ABSTRACT OF THE DISSERTATION

A Guiding Hand: The Role of Teachers in the Social Functioning of Children with Autism Spectrum Disorder in Regular Education Classrooms

by

Cori Jo Yoshiko Fujii

Doctor of Philosophy in Education

University of California, Los Angeles, 2014

Professor Jeffrey J. Wood, Chair

The number of children diagnosed with Autism Spectrum Disorder (ASD) has skyrocketed over the past decade, with current estimates at one in 68 children diagnosed with the disorder (CDC, 2014). These increasing numbers, coupled with the push towards inclusion of children with disabilities in schools, have led to a greater number of children with ASD in regular education classrooms (US Department of Education, 2012). To better understand the social outcomes of these children, this study examined several factors believed to be associated with these outcomes. Student-teacher relationship quality as well as teacher attitudes and behaviors were examined for their effect on the social functioning of children with ASD in regular education classrooms. Participants included 22 parents and teachers of children with ASD from Kindergarten to third grade (18 male) who were placed in mainstream classrooms for at least 75% of the school day. Teachers and parents rated the child's level of social functioning

and teachers rated the quality of their relationship with the child as well as their attitudes towards inclusion of students with disabilities in general. Classroom observations were conducted to examine direct teaching behaviors with regard to the teacher's emotional support, classroom management, and instructional support. Playground observations of the child were conducted to determine the child's level of social functioning during unstructured play periods. Overall child social functioning on the playground was related to STR conflict, and to some extent closeness, echoing previous findings from the typical and autism literature (Hamre & Pianta, 2001; Robertson, Chamberlain, & Kasari, 2003). Additionally there was evidence that naturalistic teacher behaviors may be related to child social skills as seen in the typically developing literature (Wilson, Pianta, & Stuhlman, 2007). While teacher attitudes towards inclusion were not related to child social functioning, they were related to child behavior problems (Avramidis & Norwich, 2002). Future researchers should look to examine how changes in STR and classroom climate influence the social functioning of children with ASD. Additionally, these results point to the potential for the development of social skills interventions by enhancing certain naturally occurring teacher behaviors in the classroom.

The dissertation of Cori Jo Yoshiko Fujii is approved.

Bruce L. Baker

Carollee Howes

Connie Kasari

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2014

To Lady, for starting me on this crazy journey.

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The quest to find classrooms and schools that were willing to allow observations of teachers and teaching behaviors proved to be extremely difficult given the current state of the education in the litigation-happy state of California. Many school districts were resistant to allow an outsider to observe teaching practices due to fear of negative backlash from parents and were wary of the presence of anyone outside of the school observing classrooms. Despite this barrier, there were several schools that welcomed observations and feedback with open arms. To those schools that allowed me access, many of whom were charters or private schools, I am greatly appreciative of your openness and dedication to bettering yourselves and others by furthering research in an area that has been somewhat overlooked. Your willingness to share your classrooms and teachers in the name of furthering research is commendable. Particular thanks go out to Dr. Jeffrey Jacobs and the UCLA Lab School for allowing us to go into classrooms and onto the playground for training on the observational coding measures.

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CHAPTER 1: INTRODUCTION

Autism, a life-long developmental disorder characterized by social and communication deficits, is estimated to affect approximately one out of 68 individuals in the United States based on the Center for Disease Control's most recent findings (CDC, 2014). Autism spectrum disorder (ASD) encompasses a broad range of deficits in social communication and interactions (American Psychiatric Association, 2013). Individuals with ASD can range from completely non-verbal and virtually unable to function independently, to having superior levels of intelligence and able to successfully function in everyday life. Many individuals with ASD, although characterized by deficits in social and communication skills, have relatively typical cognitive abilities and are reasonably socially integrated in society (Gillberg, 1998). However, ultimately, 50 to 80% of these children end up as young adults without regular employment, out of school, and with few or no friends (Howlin, Mawhood, & Rutter, 2000). Having ASD should not be viewed as an inevitable precursor of a difficult life; clearly, some youth fare better than others with regard to these long-term outcomes. In the service of identifying contextual factors that may lead to the best social outcomes for these children—and inform future programs to help these children succeed—the school environment is a logical context to examine in that it provides children with a great deal of their overall socialization. But what school factors determine which children with ASD make the most progress in these areas?

Theoretical Framework

While there are many different theories related to human development, Urie Bronfenbrenner's ecological systems theory (1979) emphasizes the major role that environmental factors play in the development of all individuals. Bronfenbrenner's theory

focuses on the connection between the biology of the individual and his/her surrounding environment in order to explain the developmental processes over a person's lifespan.

According to his theory, in order to understand an individual's development, one must take into account the contextual factors within which the individual is situated as well as how these different environments interact with the individual to foster development. Therefore there is no singular factor that determines a child's development, rather it is the interactive nature of the child's particular biology with not only his/her familial spheres (i.e. parents and peers), but also with the greater societal and economic spheres as well. These different environments are the contexts in which all development takes place, with the interchange between the individual and his or her environment as the mechanism for change.

Bronfenbrenner describes the surrounding environment of the individual as made up of five different "systems" or layers. The individual is seen as a central figure among several layers of different environments ranging from the proximal (e.g. home and school) to the more distal environment (e.g. cultural contexts and customs). The layer most proximal to the individual is the microsystem, consisting of the groups with which the individual most directly interacts. This includes individuals such as family members, peers, and neighbors as well as such institutions as the individual's overall neighborhood, school, and religious institutions. The next layer, the mesosystem, refers to the connections between the structures found in the microsystem. A common example is the involvement of a parent in the schooling and education of the child. The third system that Bronfenbrenner describes is the exosystem which is made up of social settings that the individual is not actively involved in, however it affects his/her experiences within the immediate environment. For example, parents may have experiences at work that effect their interactions with their child, thus possibly affecting their child's development or relationship

with others and in school. The macrosystem is the outermost level that encompasses the cultural context within which the individual is situated. This can include customs, laws, and values as well as socioeconomic status, poverty and ethnicity. The final system, the chronosystem, is a temporal dimension within the model that encompasses all layers and emphasizes the importance of the timing of events on the development of the individual. Bronfenbrenner's theory that an individual is continually developing as a result of the interactions between him/her and his/her surrounding environment provides a compelling lens through which to view the outcomes of children with ASD in regular education classrooms. By examining the environmental systems within which a child is situated we can begin to understand what affects and ultimately leads to various child outcomes.

The current study hopes to better understand how the social outcomes of children with ASD are affected by their inclusion in regular education settings. In keeping with Bronfenbrenner's theory, key variables focused on the nature of the child's interactions with their environment will be assessed in order to get an overall view of the child's functioning as well as how these factors may not only affect the child, but combine with each other in order to influence the child's outcomes.

One way of conceptualizing these interactions within the school setting is through an ideal model of a prosocial classroom. Jennings and Greenberg (2009) argue that in order to create a prosocial classroom that enhances student social, emotional, and academic outcomes, certain key teacher characteristics must be present. In their model of teacher social and emotional competence and classroom and student outcomes, they posit that teacher social/emotional competence and well-being interact with student-teacher relationships, classroom management and effective social emotional learning implementation. Those then

influence classroom climate and then ultimately a student's social, emotional, and academic outcomes. The current study tests the relationship of a few key elements from their model for understanding the social functioning of children with ASD in regular education classrooms.

Children with Autism in Schools

In 1975, Congress passed into federal law the Education for all Handicapped Children Act (EAHCA), a groundbreaking piece of legislation that put into place a system that governs how states and public agencies provide education and related services to individuals with disabilities, from birth to age 21 [20 U.S.C. §§ 1401 et seq.]. In 1997, EAHCA was amended and retitled the *Individuals with Disabilities Act* (IDEA), with its most recent amendment coming in 2004. One major stipulation in the act that pertains particularly to children with ASD is the idea of a least restrictive environment (LRE). Part B of IDEA, entitled the “Assistance for Education of all Children with Disabilities,” specifically outlines what services should be afforded children ages 3 to 21. Under Part B, Section 612.a.5, it states that in general, “. . .to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily.” For school-aged children with disabilities, Part B is the foundation upon which special education and related services rest. In addition, it sets up how to implement a plan of service for each child as well as a means for evaluating yearly progress. These Individualized Education Plans (IEPs) are designed to outline the specific interventions and supports put in place to address the individual needs of the person covered under IDEA. IEPs cover all activities

that occur in school, regardless of child placement in a regular or special education classroom. In addition, all individuals working with the child at any point of the day are required to be familiar with the goals of the IEP and to follow through with the steps outlined in order to assist the child in meeting his or her goals. As a result of IDEA, the task of educating children with disabilities has been put on all those within the school system, from the school board down to the individual school administrators and teachers, with considerable emphasis placed upon the individual teacher whom the child interacts with on a daily basis.

The 31st Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act, Parts B and C 2009 (2012), provided by the Department of Education Office of Special Education and Rehabilitative Services, is the most recent report detailing the progress made toward the provision of a free appropriate public education to all children with disabilities and the provision of early intervention services to infants and toddlers with disabilities. This report summarizes both national and state data relating to the education and outcomes of all children covered under IDEA. It provides a glimpse into national and state numbers on the types and amount of services rendered, characteristics of the children receiving services, and types and numbers of disabilities served. Type of disability and definition of each is also provided in IDEA. There are currently 14 different categories of disability recognized under IDEA ranging from physical and cognitive disability to psychological and emotional disturbances. Autism was not originally included in the first iteration of IDEA, but was eventually added to the list of disabilities in 1990 during the amendment and reauthorization process. Despite its late addition, the rate of services rendered based upon autism classification has risen significantly over that past several decades. The large number of children currently with this disability has made this category the third most signified, behind only specific learning

disability and speech or language impairment according to the most current IDEA report. Additional information in the report reflects the increasing numbers of children with autism reported by the CDC over the past decade or so. Between 1998 and 2007, the number of children with autism served under IDEA nationwide increased four-fold, from approximately one out of 1000 to one out of 250. In addition, this was the only category to increase in numbers over this time period except for the ambiguous, catchall category of “other health impairments.” This increase seems to be mirrored in the state of California as well. In its annual report on special education, the California Department of Education reported that between 2004 and 2007, the percentage of students identified as having autism and served under IDEA in the state rose from about 3.7% to just over 7%, making it the fifth highest state in terms of percentage of individuals with autism served. In 2011-2012, the autism category was the third largest category, comprising just over 10% of children receiving special education services in the state. The increasing number of children with autism at the national and state level, along with the emphasis on LREs, has led to the increase of primarily regular education teachers working with children with ASD on a day to day basis; something they may not be trained to handle.

Evidence for this increasing number of regular education teachers working with children with disabilities can be seen in national and state numbers on the percentage of time children served under IDEA spend in regular education settings. According to the IDEA report, between 2000 through 2007, the percentage of students ages 6 through 21 years served under IDEA, educated inside the regular class 80% or more of the day increased from 46.5% to 57.2%. With regards to autism specifically, national data from the Fall of 2007 (the most current data available) indicate that approximately 35% of children with an autism diagnosis being served under IDEA were in the regular education classroom for at least 80% of the day, with another 18% spending 40-79%

of the day in this placement. Information on the amount of time spent in regular education classroom for children in California under the autism category was not readily available. However, based on the increased percentage of children with autism serviced in California, one could safely assume that the number of these children in regular education classrooms is steadily increasing as well. The push to provide the LRE for these children has led to a growing number of children with autism spending a significant number of hours within regular education classrooms. In addition to the specification of LREs, a decreasing budget and increasing classroom size has added pressure on regular education classroom teachers, many of whom have had to take on not only children with autism, but also those with varying other physical, cognitive, social, or emotional difficulties. Understanding how these teachers are functioning under the current circumstances as well as what could legitimately be implemented in their classrooms without requiring additional resources is a central goal of the current study.

Initially, advocates of placing children with ASD in regular education classrooms assumed that the key benefit would be in the increased socialization of these students with their typically developing (TD) peers. There has been a trend in supporting fully included placement for individuals with disabilities, particularly for those with mild handicaps and fewer behavior problems (Mesibov & Shea, 1996). However, findings have been mixed, with varying levels of successful integration and difficulties from both teachers and students in working together in inclusive environments (Harrower & Dunlap, 2001).

Inclusion of Children with Disabilities

There has been a push to increasingly place individuals with disabilities in regular education settings, not merely because of social justice and equality issues, but also due to the positive influence and increased socialization opportunities for children with disabilities. This

has been especially true for children with ASD who don't have cognitive delays (Segall & Campbell, 2014; White, Scahill, Klin, Koenig, & Volkmar, 2007). While some research shows that when children with disabilities are included in regular education classrooms, there are mutual social benefits to them and their TD peers (Katz & Mirenda, 2002), many other studies have failed to find positive social outcomes for children with disabilities by virtue of placement in a regular education setting. Hebbeler (1993) reported on the regular education usage and outcomes for children with disabilities using data from the National Longitudinal Transition Study of Special Education Students (NLTS). The NLTS was a congressionally mandated national study on the experiences of students in special education during secondary school. The study included over 8,000 youth, ages 13-21 years, from a nationally representative sample with data collected during from 1985 to 1986. Contrary to other findings, Hebbeler found that many students with disabilities who were in regular education were socially isolated. She found a direct relationship between time spent in regular education settings and isolation, in that those that spent no time in regular education were significantly more likely to spend time with friends outside of school when compared with those who spent 50% or more time in regular education. In addition, when controlling for various other factors, she found that students with disabilities in special schools were about 9% more likely to see friends regularly than those with disabilities in regular schools. Overall, evidence points to the greater isolation and lack of social interactions and friendships for children with disabilities when they are included with typically developing peers (Frostdad & Pijl, 2007).

Freeman and Alkin's (2000) literature review sought to examine the social and academic outcomes of children with mental retardation (MR) in general and special education classrooms. They note that their findings resonate with Leinhardt and Pally's (1982), that placement alone

has no direct effect on child outcomes. Therefore, placement in a regular education classroom alone is not sufficient for a child with disabilities to succeed socially. However, a somewhat confusing pattern emerges when looking at child social competence versus social acceptance. Leinhardt and Pally note that when using McFall's (1982) definition of social competence as the judgment by others (i.e. parents, teachers, peers, observers) that a child's social acts are competent, children with MR tended to benefit from placement in regular education classrooms. However, when using social acceptance or how much other children want to be with the child with MR as the primary outcome measure (Coie, Dodge, & Kupersmidt, 1990), children with MR are not rated highly by their peers. While others may view the child with disabilities as being competent socially, placement in a regular education classroom does not appear to improve their social status among their TD peers per se. Mirroring those findings, Freeman and Alkin discovered that inclusion had positive effects on social competence and academics, particularly for younger children. They also found several limitations in previous research studies, some of which the current study is attempting to address. By gathering measures from multiple sources (parent, teacher, and observer) as well as going beyond child characteristics to include specific teacher behaviors and characteristics, the current study looks to expand upon the extant literature summarized by Freeman and Alkin to see not only if their findings hold true for children with ASD, but if so, what factors may be associated with successful social functioning for these children. In addition, I look to examine social competence specifically as reported by the teacher, parent, and observer in both the classroom and playground.

Social Outcomes of Children with ASD in School

A clear picture has yet to emerge in terms of the school outcomes of children with autism. While ASD is characterized by a cluster of symptoms, individuals with the disorder

have been found to have heterogeneous behaviors in terms of presence and severity, with differences in individual outcomes somewhat dependent on the level of disability (Ring, Woodbury-Smith, Watson, Wheelwright, & Baron-Cohen, 2008). Many children with ASD are within the average range of intelligence; however there seems to be a discrepancy between their overall cognitive abilities and their school performance, with a child's level of social skills possibly responsible to some degree for that discrepancy (Estes, Rivera, Bryan, Cali, & Dawson, 2011).

Deficits in social communication and interactions are core symptoms of autism (APA, 2013), thus much of the research on children with ASD has focused on this area of development. There are several studies focusing on the overall level of social development in these children, however, less has been focused on how the child's social development is impacted by and impacts his/her functioning in school. Wainscott, Naylor, Sutcliffe, Tantam, and Williams (2008) compared youth with ASD, aged 11-18 years with non-ASD youth on how and where they spent their unstructured time in school. In general, they found that youth with ASD tended to spend their time in locations that served to isolate them socially from their peers, often choosing to go to the library or a classroom. In comparison, the non-ASD youth chose to spend their time outside (on the yard) or in the lunch room, both places where high levels of social interaction occur. Similar patterns of social behavior were found by Humphrey and Symes (2011). They found that compared with TD peers and those with dyslexia, mainstreamed adolescents with ASD spent more time engaged in solitary behavior and less time engaged in cooperative interactions with their peers during unstructured school time. Bauminger, Schulman, and Agam (2003) also found in their study of peer interactions during recess that children with ASD engaged in these interactions at about half the rate of a matched TD group of children. In

addition, they found that the children with ASD tended to engage less in complex social behaviors (e.g. eye contact with smiling and sharing) when compared with the TD group.

Not only do children with ASD tend to spend less time interacting with their peers when compared with non-ASD children, there is evidence that they are rejected by their peers at a higher rate as well. Humphrey and Symes (2010) examined the level of social support given to youth with ASD as well as the frequency with which they experienced bullying at school compared with youth with dyslexia and those with no identified special education needs. They found that youth with ASD reported more incidents of bullying and lower levels of social support from parents and peers, but not teachers, when compared to either two groups. They did find a potential protective factor for these children in that increased levels of peer support predicted reductions in the frequency of bullying. In addition, it has been shown that children with ASD that have emotional or behavioral problems, more severe autism symptoms, and lower IQs, have more difficulties with inclusion (Ashburner, Ziviani, & Rodger, 2010; Eaves & Ho, 1997; Orsmond, Krauss, & Seltzer, 2004). Similarly Yianni-Coudurier and colleagues (2008) examined how problem behaviors and adaptive skills impacted a child's level of inclusion and use of services. They found that children with ASD with fewer behavioral problems and higher adaptive skills were more included and had less use of services. In a study of elementary school children with ASD in general education classrooms, although children with ASD were not rejected more by peers when compared to their typically developing classmates, they were less accepted and had fewer reciprocated friends (Rotheram-Fuller, Kasari, Chamberlain, & Locke, 2010). Rotheram-Fuller et al. also found that a little more than half of children with ASD were involved in the classroom social network, but this was at a significantly lower rate than their typically developing peers, and that rate dropped to less than a quarter of the children with ASD

in later elementary. Additionally, they found that children in early or middle elementary school (K-3rd grade) versus later elementary school (4th-5th grade) were more socially included, pointing to a possible protective factor of child age.

Despite some findings of the difficulties in including children with autism in school, some children with autism are able to successfully integrate into the classroom (Robertson, Chamberlain, & Kasari, 2003); however there seem to be a plethora of potential factors associated with their inclusion. Chamberlain, Kasari and Rotheram-Fuller (2007) found that while children with ASD in regular education classrooms are not socially isolated, they tended to be less situated within a defined peer group and had fewer reciprocal friendships. In addition, children and adolescents with ASD may not have as high quality friendships as their TD peers (Bauminger & Kasari, 2000; Locke, Ishijima, Kasari, & London, 2010), and while most may struggle with friendships, there is a small subset that seem to be succeeding socially (Kasari, Locke, Gulsrud, & Rotheram-Fuller, 2011). Though these children are not completely socially isolated, their TD peers tend to view friendships with them as qualitatively different. These interactions seem to be different than those between two TD children, but they may still serve a developmental function in that children with ASD can practice their social skills and experience friendship on their own terms. Teachers are uniquely positioned to be able to assist in the social interactions between children, thus making it important to understand how they influence the social outcomes for children with ASD in their classrooms. Few studies have examined how teachers impact the social connectedness of children with ASD and their peers; however those that have been conducted have found the student-teacher relationship is significant in the overall development of children with ASD (Blacher, Howell, Lauderdale-Littin, DiGennaro Reed, & Laugeson, 2014). Some studies have focused on the role of the teacher as facilitating the

relationship between the mainstreamed child and his/her TD peers (Osborne & Reed, 2011; Symes & Humphrey, 2011), but additional studies need to be conducted in order to better understand the specific characteristics of the teacher as well as how they impact the child.

Previous research has tried to determine different child characteristics that predict social acceptance for children with ASD in mainstream schools. Jones and Frederickson (2010) investigated behavioral predictors of social acceptance and rejection for children with ASD in mainstream schools compared with age, IQ, and academically matched peers. Similar to previously mentioned studies, they found that the children with ASD had significantly higher rates of rejection and lower rates of acceptance when compared with their TD peers. They also found evidence that shyness did not predict social rejection for children with ASD as it did for their comparison group, shedding light on the fact that awareness of differences in the child with ASD may cause their peers to make allowances for certain behaviors.

Based on the extant literature, mere placement within an inclusive setting is not sufficient to ensure successful social functioning of children with ASD. Difficulty arises when attempting to address the needs of children with ASD due to its vast phenotypic heterogeneity (Dawson et al., 2002; Jones & Klin, 2009). With the limited resources available to most teachers, finding a way to provide the most ideal environment while working within those limitations can prove a challenge. As Harrower and Dunlap (2001) argue, “for inclusive placements to be successful, educators must have knowledge of and access to empirically validated strategies that will assist them in this process. . . Inclusion can only work well if the educational system (at the district, school building, and classroom levels) is designed to encourage and support its success.” The current study aims to examine various characteristics of the teacher that may impact the child’s social functioning.

While certain child characteristics have been associated with social outcomes in schools, more research needs to be conducted in order to determine what specific factors interact with the those characteristics to determine the child's level of social functioning. Attempting to understand their social functioning in isolation, without attention placed on the social milieu of the school, fails to fully illuminate the processes most influential in the child's social development. Understanding the factors of an environment within which these children are deeply embedded could illuminate potential areas for effective and long-lasting intervention. In fact, Nind and Wearmouth (2006), in their literature review of inclusion strategies for children with disabilities, found a similarity among various intervention studies that were successful. They found that all the successful approaches involved the learning environment as a key role due to the student's learning through his/her social interactions. In addition, they emphasize teachers as key agents that help through dialogue with the child and his/her peers. An obvious next step which the current study hopes to examine is the influence of teachers, given their previously stated role as a facilitator for social interactions between children, on the social functioning of children with ASD.

Teacher Characteristics

An often unseen and unexamined, yet important influence on the peer systems of children is the child's teacher (Farmer, Lines, & Hamm, 2011). Farmer and colleagues argue that teachers have two roles in supporting the social development of children. They act as authorities on society's rules and expectations of social behavior through their imparting of information and guidance, as well as their reinforcement of appropriate behavior. In addition, teachers often take on a role as facilitator of child social interactions, opportunities, and general peer dynamics. As a whole, teachers communicate, through their structuring of the classroom environment, the

expected level and type of peer social interactions that should be established. They accomplish this through the general classroom climate as well as through individual relationships with their students. Finally, they argue that due to the teacher's ability to shape the peer ecology by managing classroom interactions and activities, teachers are in fact the leaders of the classroom social system. They are able to adjust interactions to address the needs of a socially struggling student, helping to promote the engagement of all students. Overall, teachers are able to develop, guide, and direct the classroom as a social unit. Keeping this in mind and using Jennings and Greenberg's (2009) model, several teacher characteristics and practices will be examined.

Student-teacher relationship. Healthy student teacher relationships are one key element in a prosocial classroom (Jennings & Greenberg, 2009). Typically developing research has shown a significant relationship between student-teacher relationship (STR) quality and child social outcomes, with STRs high in closeness predicting social competence several years later (Peisner-Feinberg et al., 2001). Hamre and Pianta (2001) found that early STRs are predictors of academic and behavioral outcomes in early elementary school with some effects lasting through eighth grade. The child's level of relational negativity (conflict and dependency on teacher) in Kindergarten predicted their academic and behavioral adjustment in later elementary and middle school, even after controlling for early indicators of behavioral and academic problems. Extrapolating from their findings, one could assume that children with ASD who have conflictual or overly dependent relationships could be at risk of having poor social relationships with their peers due to potential behavioral problems.

In addition STR quality may be an indicator of the child's overall ability to form relationships with others in general. Particularly, STRs that are characterized as being high in

dependency could indicate a child that is struggling in the classroom and relies on the teacher for support and guidance, particularly when compared with their peers (Birch & Ladd, 1997).

Mirroring Hamre and Pianta's findings, Buyse, Verschueren, Verachtert, and Van Damme (2009) found that children with more conflictual relationships with their teachers in first grade were less popular among their peers while children with higher levels of closeness with their teacher tended to be more popular. However, unlike Hamre and Pianta, they failed to find the lasting effects of the STR on peer status in subsequent years.

Previous studies from the intellectual disabilities (ID) literature have examined the effects of STR quality on the outcomes of children with ID (Eisenhower, Baker, & Blacher, 2007). Eisenhower, Baker, and Blacher found that children with ID had significantly poorer relationships with their teacher compared with TD children. They found that children with ID had relationships with their teachers that were significantly higher in conflict and dependency and lower in closeness when compared with a same age TD group. They also found in a similar study that the level of child behavior problems predicted relationships characterized as conflictual and child social skills predicted the level of closeness (Blacher, Baker, & Eisenhower, 2009). These child characteristics accounted for a significant amount of variance seen in STR quality, making group status (ID versus non-ID) non-significant when taken into account, thus suggesting the presence of a disability does not preclude the formation of a close, non-conflictual relationship with their teacher per se. In addition, classroom placement seemed to play a role in the quality of the STR for children with ID, with those in regular education classrooms experiencing significantly lower quality relationships compared to those in special classes.

Robertson and colleagues (2003) similarly examined the STR between general education teachers and children with autism. Similar to Blacher et al.'s (2009) findings, they found that

child behavior problems were associated with the level of conflict in the student-teacher relationship. Therefore there seems to be evidence that various child factors may account for the variability seen in STRs among children with ID as well as those with autism; however less is known of what role this plays in the overall school adjustment of children with ASD in regular education settings as well as how it interacts with other school and classroom variables. They also found a promising relationship between STR and child social inclusion in the classroom. STRs characterized by high levels of conflict and dependency were associated with lower levels of social inclusion for children with ASD in regular education classrooms. Given the promise of the relationship between STRs and social functioning consistently found in the TD and somewhat in the disabilities literature, further examination of this relationship for children with ASD seemed an appropriate next step in understanding social functioning both in the classroom and on the playground.

Teacher attitude. In addition to the influence of the student-teacher relationship on child social outcomes, teacher attitude toward inclusion and teaching children with disabilities in general has been shown to impact children's peer relationships. In Jennings and Greenberg's (2009) model of a prosocial classroom, teacher social/emotional competence and well-being influences child social and emotional outcomes through the teacher's creation of a healthy classroom climate. Socially and emotionally competent teachers are sensitive to differences in others, providing an inclusive, supportive, and respectful environment. When teachers have positive attitudes towards the children in their class, their relationships with their students and their ability to manage the classroom is directly impacted. These factors help to create a healthy classroom climate that influences child social and emotional outcomes. While they show the interaction between these teacher characteristics and the social and emotional outcomes for TD

children, little is known if these variables are just as influential for children with ASD. Gaining a better understanding of how teacher attitudes influence positive social interactions within this model is of particular importance for children with ASD.

Teachers' attitudes towards inclusion have been shown to vary, but some consistencies have been found. Avramidis and Norwich (2002) found several common factors among the numerous studies examined in their literature review. They found that the nature and severity of the child's disability strongly influence the teacher's attitude toward inclusion, with teachers more willing to include students with mild disabilities or physical impairments as opposed to those with more complex needs. In addition, negative attitudes towards inclusion were held if the child exhibited severe learning needs, behavioral difficulties, or emotional problems. While a clear picture of the teacher characteristics that influence these attitudes was difficult to elicit, they did find that the availability of support felt by the teacher had a positive effect on their attitude toward inclusion. Those teachers that had more support from staff at school, or through the use of other material resources, tended to have more positive attitudes toward inclusion.

Cook (2001) echoes the conclusions of Avramidis and Norwich (2002), finding that students that tend to have more non-obvious or behavior problems (i.e., ADHD or learning disability) are more likely to elicit negative inclusion feelings in their teacher. He hypothesized that because they are not obviously different from their peers at first appearance, teachers tended to have higher expectations for these children as compared to other children with disabilities, and when these expectations could not be met, children tend to be blamed for their aberrant behavior and poor performance. Their somewhat "hidden" diagnosis led to more negative feelings toward the child and their inclusion in the classroom when compared with non-disabled students as well as those with more obviously identifiable disabilities.

Teacher supportive attitude towards inclusion has also previously been shown to have a positive effect on student classroom satisfaction, with classrooms characterized by lower levels of friction among students and teacher (Monsen & Frederickson, 2004). Being in classrooms with this higher level of cohesiveness has been shown to lead to higher acceptance of all students (Frederickson & Furnham, 1998). But as Gibb, Tunbridge, Chua, and Frederickson (2007) point out, it is still unclear exactly how classroom environment and teaching behaviors interact to influence the social acceptance of students. Whether positive attitudes towards inclusion lead to specific teacher behaviors that change the learning environment which then impacts student acceptance is something the current study hopes to examine further.

Teacher's attitudes have previously been shown to affect the social outcomes of children in their classroom. Gest and Rodkin (2011) examined the impact of teachers' attitudes towards aggression and withdrawal on peer social ecologies in the classroom. They found that teachers with strong levels of support for shy-withdrawn behavior had classrooms with lower levels of overall disliking among students and higher ratios of liking to disliking. Teachers with strong disapproval for aggression had classrooms where students perceived fewer classmates as aggressive. Their findings seem to indicate that teacher attitudes are transmitted to students through the overall classroom culture, thus directly impacting the behavior and social interactions among students. It is therefore plausible that positive feelings towards inclusion and the overall acceptance of all students would provide for a classroom environment of tolerance for a range of social behaviors, thus potentially leading to greater social functioning of all children, including those with ASD.

With regards to including children with ASD in particular, researchers have also discovered that expectations are often positively linked to future outcome expectations for

students, and can dictate the amount and quality of effort expended toward the students' needs (Ivey, 2007). However, a singular understanding of the experience of teachers and their student with ASD is difficult to formulate due to the heterogeneous presentation of behavioral symptoms. Emam and Farrell (2009) illustrated some key areas of tensions in the relationship between teachers and students with ASD. The student's overall problems with social and emotional understanding, including difficulties with perspective taking, recognition and expression of emotions, literal understanding and lack of ability to read social cues and body language, and difficulty with transferring learning in one area to another all seem to be catalysts for frustration in the teacher. While their findings were complex and at times discrepant, they found teachers' attitudes towards inclusion were particularly dependent on their previous experience with children with ASD. Difficulties with social and emotional understanding, behavior problems, and ASD-related symptom severity all contributed to teachers' attitudes; teachers tended to have the most tension and negative attitudes when child problems were significant.

In their 2011 study, Park and Chitiyo found that most regular education teachers had positive attitudes towards children with ASD, finding no significant differences between their attitudes and those of special education teachers. Interestingly, they found that several teacher characteristics were associated with teacher attitude. Results indicated that female teachers held more positive attitudes than their male counterparts. Elementary school teachers, teachers younger than 56, and those that attended autism workshops multiple times in the past were all found to have significantly higher rates of positive attitudes towards students with ASD. Park and Chitiyo noted that the rates of positive attitude have increased substantially compared with rates from Olley, DeVellis, DeVellis, Wall, and Long (1981) over three decades ago.

Overall the current research points to relatively positive attitudes of teachers towards including children with ASD in their classrooms, however, similar to the research on children with ID, behavioral and emotional issues tend to negatively skew teachers' attitudes. Given the attitudes of these teachers as well as their influence on the social outcomes of students, it has yet to be investigated as to how these attitudes influence actual teacher behavior, potentially influencing child social outcomes.

Teacher behaviors. Classroom climate is created through teacher behaviors that provide instructional and emotional support as well as work to organize the classroom. According to Jennings and Greenberg (2009), a healthy classroom climate leads directly to student social, emotional, and academic outcomes. The classroom climate, or quality of the learning environment, can have a lasting effect on the social development of children (Adelman & Taylor, 2005). Howes (2000) found that peer ratings of child social competence in second grade was predicted by preschool classroom social-emotional climate. Preschool classroom climate high in behavior problems and low in child-teacher closeness significantly predicted ratings of child aggression in second grade. Ratings of social withdrawal were also significantly predicted by a preschool high in behavior problems.

Wilson, Pianta, and Stuhlman (2007) examined the social competency of children as a result of their classroom climate. Children in classrooms with high levels of emotional and instructional support were rated by their teachers and independent evaluators as showing more competence with their peers and greater self-control than students in classrooms with mediocre levels of support. In addition, they examined how classroom climate impacted children who were deemed "functionally at risk" by qualifying as "at risk" on at least two areas of functioning (i.e. child attention, externalizing behavior, social skills, and academic competence). Children

were labeled as being at risk if they had high levels (at least one standard deviation above the mean) on a measure of externalizing behaviors or sustained attention, or if they scored low (at least one standard deviation below the mean) on a measure of social skills or academic competence. They found that children with multiple risks in classrooms with high emotional and instructional support demonstrated significantly greater self-control than children with multiple risks in classrooms with mediocre or low levels of support. Children with multiple risks seemed to benefit more from classrooms marked by high levels of emotional support and evaluative feedback than children who did not demonstrate multiple risks.

Emotional support within a classroom has been shown to predict higher levels of social competence and friendship reciprocity among children (Gest & Rodkin, 2011). These teachers demonstrated a positive emotional connection to students, displayed low levels of anger or hostility, were highly responsive to student needs, and positively regarded different student perspectives. Teachers who establish a warm and supportive classroom environment are modeling positive relationship skills found in close, positive relationships, and are also providing a safe environment within which they can explore and practice positive peer relational skills. In addition, some recent studies have found that classrooms that consistently provided emotional support throughout the day accounted for additional variance in child social competence above and beyond the influence of the average level of emotional support in the classroom (Curby, Brock, & Hamre, 2013). Therefore, classrooms that exhibited a stable level of emotional support throughout the entire day, versus classrooms that tended to vary in their level of support, predicted children with high levels of social competence. Curby et al. hypothesize that their findings could be explained in terms of the child's cognitive resources. They posit that emotionally consistent classrooms may provide an "atmosphere that is more conducive to

learning because children know more of what to expect, can feel more secure, and can attend to learning tasks with fewer disruptions,” additionally allowing for increased socialization with peers. Similarly, Mashburn et al. (2008) found that emotional support significantly predicted child social competence and was negatively related to child problem behaviors for children in prekindergarten.

The National Institute of Child Health and Human Development Early Child Care Research Network (2003) examined factors associated with the social functioning of children in first grade. Similar to previously mentioned studies, they found that first grade classroom quality significantly predicted child social competence, even after controlling for earlier child competence and family predictors. Children in classrooms with higher levels of instructional support showed more positive behaviors towards their teacher such as increased levels of compliance and cooperation. Children in classrooms with higher levels of emotional support, with teachers showing low levels of intrusiveness and detachment and high levels of sensitivity, were seen to be more engaged and self-reliant while in the classroom.

Results from previous studies seem to come to similar conclusions, that positive classroom environments, particularly those high in levels of emotional support, are predictive of higher levels of child social competence. Brophy-Herb, Lee, Nievar, and Stollak (2007) found similar relationships for preschoolers, where positive social competence was predicted by positive teacher behaviors (authoritative style) and classroom climate. In their path analysis, they were able to show additional influences of school on child’s functioning at home. Child social competence at school impacted parent’s ratings of children’s social competence at home, implying that skills learned and demonstrated at school carry over to other environments as well.

These results point to the lasting and generalizability of skills learned in school, with teacher behaviors having a direct impact on skills seen in school and beyond.

To date there have not been any studies examining the influence of specific teacher behaviors (emotional support, classroom management and instructional support) that are conducive to positive classroom climates and their relationship with the social competence of children with ASD in regular education classrooms. One would assume that such teacher resources are available to all students within their classroom; therefore they should influence children with ASD in a similar manner that has previously been shown in the TD literature. However, due to the lack of understanding of social cues inherent in the disorder, one cannot assume that such social mechanisms would work in a similar fashion with this population. The current study looks to explore this unexamined area in order to determine if assumptions made for the development of social competence in TD children can be extended to children with ASD. In addition, understanding how various teacher characteristics, including student-teacher relationship quality as well as teacher attitudes and behaviors, influence students with ASD will help to guide future interventions as well as inform teacher education and training programs as to how to best support this growing group of children.

Research Questions and Hypotheses

The main focus of the study is to examine the relationship between teacher characteristics and child social outcomes for children with ASD in regular education settings. The current study has two primary aims and four corresponding research questions examining the role of various teacher characteristics on the social functioning of children with ASD as rated by parents and teachers and observed during unstructured time (i.e. recess and/or lunch) at school.

Aim 1: Examine the relationship between student-teacher relationship quality and parent- and teacher-rated child social functioning and playground behaviors for elementary school children with ASD in regular education classrooms. Specific teacher behaviors will be examined as to their role in this relationship.

Research Question 1a: Does the student-teacher relationship quality (closeness and/or conflict) predict parent- and teacher-rated child social functioning and social behavior during unstructured play periods for children with ASD in regular education classrooms?

Hypothesis 1a: The level of closeness and conflict in the student-teacher relationship will predict child social functioning, with higher levels of closeness and lower levels of conflict predicting higher levels of child social functioning.

Research Question 1b: Does the teacher's behavior (emotional support, classroom management, and instructional support) mediate the relationship between student-teacher relationship quality and parent- and teacher-rated child social functioning and social behavior during unstructured play periods for children with ASD in regular education classrooms?

Hypothesis 1b: The level of emotional support provided in the regular education classroom will mediate the relationship between student-teacher relationship quality and child social functioning.

Aim 2: Examine the relationship between teacher attitude towards inclusion and parent- and teacher-rated child social functioning and social behavior during unstructured play periods for children with ASD in regular education classrooms. Specific teacher behaviors will be examined as to their role in this relationship.

Research Question 2a: Does teacher attitude toward inclusion predict parent- and teacher-rated child social functioning and social behavior during unstructured play periods for children with ASD in regular education classrooms?

Hypothesis 2a: Teacher attitude towards inclusion will predict child social functioning, with higher levels of positive attitude predicting higher levels of child social functioning above and beyond the influence of key child variables (e.g. age, gender, ethnicity, SES, behavior problems).

Research Question 2b: Does the teacher's behavior (emotional support, classroom management, and instructional support) mediate the relationship between teacher attitude toward inclusion and child social functioning for children with ASD in regular education classrooms?

Hypothesis 2b: The level of emotional support provided in the regular education classroom will mediate the relationship between teacher attitude toward inclusion and child social functioning.

CHAPTER 2: METHODS

Participants

Recruitment and data collection commenced in August 2012 and continued through March 2014. The sample included 22 children with autism (18 boys, 4 girls) from Los Angeles ($n = 19$) and Oahu ($n = 3$), ranging in age from 5 to 10 years ($M = 7.14$; $SD = 1.36$), and their primary teachers, in 17 elementary schools in the greater Los Angeles area ($n = 15$) and in suburbs in the windward-side of the island of Oahu in Hawaii ($n = 2$). Five school districts were represented in the Los Angeles sample, with all participants from Hawaii being a part of the single school district encompassing the entire state. Table 1 provides a summary of key child and family demographics by location. Participants were recruited through flyers sent to regional centers and community centers as well as from families interested in participating in a large randomized controlled trial of a social skills intervention for children with high functioning autism. Flyers were also distributed to teachers and other school personnel to pass along to potentially eligible families. Children were considered to be mainstreamed if they were placed in regular education classrooms at least 80% of the day. Autism diagnosis for each child was provided by participating parents, with documentation from schools, psychologists, pediatricians, or other diagnosticians at some point previous to his/her inclusion in the study. Participants attended schools within suburban settings (with the exception of one that was situated within a large urban setting), with 9 participants in public school, 8 in private school, and 5 in charter school. There were a total of 17 different schools (7 public, 3 religious private, 3 non-religious private, and 4 charter) due to the participation of multiple children in 4 schools. Information on school demographics was only readily available from public and charter schools. While the

overall average percent of economically disadvantaged students among all the schools was relatively low ($M = 34.8$, $SD = 29.72$), that percentage varied tremendously with schools ranging from 4% to 95%. Economically disadvantaged students are all those who are eligible for free or reduced-price lunch. School size varied, ranging from 350 students to 866 students, as well as the total number of children in each classroom (range 13 to 35). The presence of an aide or paraprofessional did not preclude the child from inclusion in the study, with 10 children receiving services from a one-on-one aide during the observations. During the observations, only 8 children were observed with their aides in the classroom or on the playground. The sample was relatively homogenous in terms of child ethnicity and parent education. Teachers were overwhelmingly young, female, and had relatively few years of experience. A summary of key teacher, classroom, and school variables can be found in Table 2. While there appeared to be some differences in school demographics based upon location (Los Angeles versus Oahu), group differences could not be tested for due to limited power because of low sample size.

Informed consent from parents and teachers was obtained in order to observe the child in school; however child assent was not obtained due to the solely observational nature of the information gathered about the child. Parents authorized a release of information to allow the researcher to discuss the child with the child's primary teacher. Permission was granted by the school's principal or other administrative personnel in order to observe the child in the classroom and playground. Assent was not gathered from the remaining children within the classroom because no direct or identifying information was collected from them. The current study has university-based IRB approval and was conducted as approved.

Measures

Child Background Information. Information related to the child and family characteristics was gathered from all parents.

Child background information. Child background characteristics (e.g. age, grade, ethnicity, etc.) as well as information about the family (e.g. mother's education, marital status, and family income) were collected from all participants through parent-report.

Social Responsiveness Scale (SRS; Constantino and Gruber, 2005). The SRS is a standardized, 65-item, 4-point Likert scale parent-rated form assessing the autism symptoms exhibited by an individual such as social communication deficits and repetitive behaviors. Parents rate how true statements about various child behaviors are with regards to their child in the past two weeks (not at all to almost always true). The SRS provides a total score, as well as five subscales, and has previously demonstrated robust reliability and validity ($\alpha = .97$; Constantino et al., 2003). The current study had a similarly high scale reliability ($\alpha = .96$). The parent-report version of this measure was administered in order to determine the severity of the child's autism symptoms. The total score as well as the autistic mannerisms subscale will be used as a measure of the child's severity of ASD and social responsiveness.

Child Social Functioning. The child's level of social functioning was measured through various teacher and parent reports as well as through direct observations of child social behavior on the playground.

Social skills. The Social Skills Improvement System (SSIS; Gresham and Elliott, 2008) is a 79-item (83-item for teacher version) self-report questionnaire that measures children's behavior including their social skills, problem behaviors and academic competence. Parents and teachers rate 1) how often each behavior is exhibited on a four-point scale (never, seldom, often, and always), and 2) how important each behavior is on a three-point scale (not important,

important and critical). Social skills, competing problem behaviors, and academic competence scores (for teacher-report only) are calculated using the frequency of behaviors reported. The SSIS parent and teacher versions have good reliability ($\alpha = .83$, $\alpha = .91$, respectively) with the current study showing comparable levels of reliability for parent and teacher versions ($\alpha = .76$, $\alpha = .86$, respectively). For the current study, only the frequency questions were given to parents and teachers for brevity as they were the only items used to calculate total and subscale scores. Standard scores of social skills and behavior problems were used in analyses as measures of child social functioning.

Social interaction during unstructured playtime. A modified version of Bauminger's (2002) observation measure of social interaction, previously used in a randomized controlled trial of a cognitive behavioral therapy for children with autism and anxiety, was used in the current study (Wood, Fujii, Renno & Van Dyke, 2014). While certain portions of the coding system have stayed the same (coding of the target child behavior as well as the peer response to that behavior), several updates to the coding scheme have been made in order to increase the reliability and streamline the process. A decrease in the number of behaviors coded as well as shorter observation periods allowed coders to more easily capture the target child's behaviors, capture the dynamic nature of unstructured play periods, and to increase the likelihood of obtaining high inter-rater reliability. Coding is completed using a timed-interval of 20 seconds of observation followed by 10 seconds of coding, repeated over the 20 minutes for a total of 40 coded intervals. Target child behavior was initially categorized into four main social behavioral types: solitary, initiation, response, and interaction. Target children were coded on specific behaviors, including whether they faced others when interacting, engaged in any sort of communication with others, interacted with peers while using a shared object, and whether they

displayed any negative or aggressive behaviors towards others. In addition, peer responses to the target child's behavior were coded as to whether or not they resulted in a continued interaction with the target child or ended the interaction. Modifications to the coding system were made through meetings between the author and the coding team in order to create a more simplistic and standardized coding system. Several visits were made to a school playground to test out the coding scheme. Alterations were made after each visit until a final version was agreed upon, containing clear definitions and examples of each behavior of interest. Inter-rater reliability was calculated by dual coding of 5 practice subjects prior to the start of data collection and showed almost perfect agreement between raters on presence of solitary behavior ($ICC = .986$), interaction with peers ($ICC = .997$), and positive peer responses ($ICC = .993$). A copy of the coding sheet and behavior definitions can be found in the appendix.

Teacher characteristics. Measures from primary teacher's about their attitude, relationship with the target child, and general experiences with having the child in their classroom were gathered to examine their impact on the child's social functioning.

Teacher background information. Teacher information, including level of education, years teaching, and experience with children with special needs, was collected from each target child's primary teacher.

Teacher behaviors. A measure of the classroom learning environment is taken in order to determine its impact on the child's social functioning at school. The Classroom Assessment Scoring System (CLASS; Pianta, La Paro & Hamre, 2008) is an observational instrument used to assess the classroom quality from Pre-K through grade 12. The CLASS describes multiple dimensions of teaching that are linked to student achievement and development and has been validated in over 3,000 classrooms. It provides three domains (emotional support, classroom

organization, and instructional support) as well as various dimensions within each domain (e.g. positive climate, behavior management, and language modeling). Coding was done through a sequence of four intervals, each of which included 20 minutes of observing teacher and student behaviors in the classroom followed by 10 minutes of global coding. Observers rated each of the 10 dimensions of teacher behavior on a scale from 1 to 7, with higher scores indicating higher presence of behaviors within each domain. Double coding of five participants showed moderate inter-rater reliability ($\kappa = .624$, $SE = 0.59$), with 95% of data collector responses the same or within one scale-point of each other. The K-3rd grade version of the CLASS was used in the current study.

Teacher attitude toward inclusion. The Attitudes Towards Teaching All Students (ATTAS; Gregory & Noto, 2012) measure was collected from each primary classroom teacher to gauge their feelings towards teaching all students, including those with mild to moderate disabilities. The ATTAS is a 9-item 7-point Likert scale teacher-report of feelings towards teaching all students, including students identified with mild to moderate disabilities. Teachers are asked to rate the amount they agree with various statements regarding inclusion (agree very strongly to disagree very strongly). Norms are provided for the full scale score as well as the three subscale scores: believing all students can succeed in general education classrooms (cognitive), developing personal and professional relationships (affective), and creating an accepting environment for all students to learn (behavioral). The ATTAS has shown to be a valid and reliable measure of teachers' attitudes towards teaching all students ($\alpha = .833$), with the current study showing comparable reliability ($\alpha = .893$).

Student-teacher relationship. The Student-Teacher Relationship Scale-Short Form (STRS-SF; Pianta, 2000) is a 15-item self-report instrument that uses a five-point Likert scale

and was given to teachers to assess their perception of their relationship with the target child. The STRS-SF provides two subscales: Conflict (8 items) and Closeness (7 items). The conflict subscale measures the teacher's feelings of negativity and conflict with the student, while the closeness subscale measures the teacher's feelings of affection and open communication with the student. The measure has shown adequate reliability and validity in use with both TD populations as well those with intellectual disabilities with $\alpha = .83$ for closeness and $\alpha = .87$ for conflict (Eisenhower, Baker, & Blacher, 2007). The current study showed reliability similar to Eisenhower, Baker and Blacher with Cronbach's alpha of .83 for closeness and .75 for conflict for the current sample.

Teacher interview. An optional semi-structured interview was conducted, when possible, with the child's primary teacher in order to gain a better understanding of his/her feelings and thoughts towards the target child as well as to further examine attitudes towards his/her own efforts in integrating the target child in the regular education classroom. Quotes taken from the teacher interview were used to further investigate the findings from the quantitative analyses as well as to provide some insight into how and why various factors were associated.

Procedure

Parent and teacher consents were emailed and returned in person prior to conducting the observation. Once parent and teacher consents were obtained, parents and teachers were asked to complete a short packet of measures which were mailed back or received in person.

Classroom and playground observations were scheduled with each child's school, with all observations taking place in one day when possible. For 10 participants, observations were completed over two school days due to the school's policy on time limitations for observations at

the school. One participant's observations were completed over three days due to their school's policy on outside visitors. Classroom observations were conducted over two hours in the child's classroom during morning lessons. All classroom observations were conducted during core academic teaching periods (i.e. math, science, language arts) with their primary teacher. While recruitment began in August 2012, data collection did not commence until February 2013. The majority of observations were completed during the late Fall and early Spring semesters of the 2013-2014 school year. Observations were conducted after the child had spent at least two months in their classroom with their teacher to ensure enough time for the child to feel comfortable with the teacher and establish a routine in the classroom. In addition, this assured that the teacher would have enough experience with the target child to allow him/her to reflect on the nature of their relationship as well as gauge the child's social integration with his/her peers. As a result, no observations were completed from June 2013 through September 2013. Figure 1 shows the participant flow and recruitment numbers for the current sample. During the observations the observer stood in the back of the classroom in order to keep distractions to a minimum as well as to allow her to observe all interactions between the teacher and students. Twenty minute playground observations were conducted during the free play period during the child's lunch. Coders maintained close proximity (within approximately 20 feet) to the target child in order to observe behavior without disrupting the interaction between the child and his or her peers on the playground. Two graduate students familiar with the social interactions, behavior, and overall functioning of children with autism were trained on the classroom and playground coding schemes. Practice coding was conducted and feedback provided until 85 % inter-rater agreement on each code was obtained.

Teachers who opted to participate in the voluntary interview were scheduled for an interview time, in person or over the phone, at their convenience. Interview questions focused on the teacher's experiences with the target child as well his/her experiences with including that child within their classroom. Information was obtained as to the level of support and education provided by the administration prior to and during the target child's stay in their classroom. Written notes were taken during all interviews with teachers consenting to optional audiotaping.

Participants did not receive monetary compensation for their participation. Summaries of the child's behavior during the observations were given to parents upon request, and suggestions on possible accommodations and supports within the classroom were given if deemed necessary based upon the child's perceived level of functioning and engagement in the classroom based upon the observer's judgment. Teachers were offered information on working with children with ASD in their classroom.

CHAPTER 3: RESULTS

Table 3 provides means, standard deviations, and ranges for measures of teacher characteristics, behavioral observational ratings of child social behaviors on the playground as well as parent- and teacher-rated child social skills. Teachers rated their relationship with the target child as higher in closeness than in conflict. With regards to teachers' attitudes towards inclusion, total and subscale scores on the ATTAS were calculated, with higher scores indicating more positive feelings towards inclusion. Teachers within the current sample scored somewhat lower scores than previously found by the measure creators (Gregory & Noto, 2012). Average total scores on the ATTAS were in the 2nd percentile, average scores on the affective and behavioral subscales were relatively lower (35th percentile and 10th percentile respectively) than the norms. CLASS domain scores were computed by averaging the mean scores of the dimensions of teacher behavior across the four observed intervals. First averages were computed for each dimension across the four observation intervals. Then domain scores were calculated by averaging the different dimension scores within each domain. Emotional support was calculated by averaging positive climate, teacher sensitivity, and regard for student perspective with the reversed score of negative climate. Classroom organization was calculated by averaging scores on behavior management, productivity, and instructional learning format. Instructional support was calculated by averaging the scores for concept development, quality of feedback, and language modeling. For the playground observations, means for observer-rated scores represent on average the number of 30-second intervals out of a total of 40 in which each coded behavior occurred. While children engaged in solitary behavior on average for approximately half of the time observed on the playground ($M = 16.1$, $SD = 10.84$), they actually spent more time engaged

in some sort of positive peer interaction (initiating, responding, or interacting; $M = 20.77$, $SD = 10.38$). Overall the target children were interacting with their peers and were receiving relatively positive reactions from their peers when they were engaging in these interactions. Sum scores for each observed behavior category (e.g., isolated) as well as total social skills scores from parent and teacher SSIS were used in subsequent analyses as measures of child social functioning. Child age and ASD symptom severity based on SRS total scores were not significantly correlated with any of the social functioning variables, therefore they were not controlled for in subsequent analyses ($ps > .10$). In addition, teacher characteristics such as teacher age, gender, years of experience, and education level were not related to social functioning variables so they were excluded from analyses as well ($ps > .10$).

Preliminary Analyses

To examine the convergent validity of the behavioral observation coding scheme used to assess child social functioning on the playground, behaviors coded on the playground were examined for their relationships to both parent- and teacher-rated SSIS. As shown in Table 4, teacher-rated social skills were marginally correlated with child social behaviors on the playground. Higher ratings of social skills by teachers on the SSIS were somewhat related with a greater number of intervals (out of 40) where the target child interacted in some way with a peer ($r = .394$, $p = .07$) and higher rates of positive peer responses to the target child's behavior ($r = .366$, $p = .094$). Parent-rated social skills were not significantly associated with measures of child playground behavior. To further examine the relationship between these two measures, child social behavior on the playground was examined for relationships with the subscales of teacher-rated SSIS. Only significant correlations are reported in Table 5 for brevity. Higher SSIS teacher-rated cooperation, responsibility, and engagement were significantly correlated (all

$ps < .05$) with more positive child playground behaviors. Higher teacher ratings on those three subscales were also associated with less solitary behavior, a greater number of peer interactions, and more positive peer responses toward the target child. In addition, higher teacher-rated behavior problems and more hyperactive/inattentive behaviors were significantly related to child social functioning on the playground as well, with child observed as having more solitary behaviors as well as fewer peer interactions and positive peer responses. Overall teacher-reported social skills, not parent-rated social skills showed some relationship with child behaviors on the playground.

Child social interaction patterns on the playground were used as a measure of child social function in subsequent analyses. Key child behavior patterns that were indicators of social interaction flow and used to later categorize children were determined through careful examination of playground observation codes for each participant. Missed peer interactions were coded when the target child failed to carry on an interaction past one interval (i.e. 30 seconds) when an interaction was initiated by him/herself or a peer. Therefore, the one interval containing some social behavior by the target child was preceded and succeeded by child solitary behavior or some interaction with an adult. This showed how target children failed to continue with the peer interaction beyond a single interval, missing an opportunity to prolong the peer interaction. New solitary intervals measured the number of times throughout the observation that the child disengaged from an interaction with an adult or peer and engaged in solitary behavior. New solitary intervals were counted only when a solitary behavior followed an interaction, regardless of the consecutive number of solitary behaviors that came after. Similarly, new peer interactions were counted only when a peer interaction succeeded a solitary behavior or interaction with an adult, regardless of the length of ensuing peer interaction. Only the first

social behavior with a peer immediately following an interaction with an adult or solitary behavior was counted as a new peer interaction. Longest sustained solitary behavior and longest sustained peer interaction were calculated by counting the greatest number of consecutive intervals that a target child engaged in those behaviors during the observation period. Average length of solitary sequence and peer interaction were calculated by counting the number of consecutive intervals engaged in that particular behavior and dividing it by the number of discrete, or new, starts in that behavior. As a result, this gave an idea of how long, on average, these behaviors were seen when the child displayed them. Adult interactions were only counted when a child interacted with only the adult at some point, with no interaction with any peer during that interval. Therefore, this number captured times where children were completely removed from interactions with peers for the entirety of the observation interval and solely interacted with an adult on the playground.

Children were placed into one of 4 categories of social connectedness which were created by examining the flow of their social interactions based upon previously defined social behavior patterns on the playground. Categories were created for the current study in an attempt to better explain and capture the nature of the flow of social exchanges on the playground and to identify potential groups of children with particular peer interaction patterns. No previous study was found that classified children based upon their playground behaviors, therefore categorization was determined comparative to the other children in the sample. Each child's behavior patterns were evaluated compared to all other children in the sample to examine how connected he/she was to his/her peers. The first category was "adult focused" where children spent a higher rate of their time (outside of being solitary) in some sort of interaction with an adult compared with the rest of participants (a minimum of 6 intervals). Peer interactions were infrequent and brief while

solitary behaviors were relatively longer, however for all of these children there was at least one interval with a peer interaction of some sort. The second category tried to encompass children who rarely engaged in a sustained interaction and failed to pick up on the social overtures of their peers. These children in the “missed-connect” category had relatively high rates of solitary behaviors and high rates of missed peer interactions. A missed peer interaction was scored if there was a solitary interval immediately following an interval where the target child attempted an initiation or responded to a peer. This indicated that the child did not pick up on the interaction and instead moved on to solitary behaviors despite the opportunity to engage in a social interaction with their peer. Although some children had relatively elevated rates of interactions with adults similar in number to those in the “adult focused” group, these children engaged in more interactions with peers, albeit for a short length of time. The third category, “unstable-connected,” is defined by children who are engaged with their peers (i.e. relatively low levels of solitary behaviors), however those periods of engagement do not last long. In addition, these children will often start new interactions with the same or different group of peers following a brief break in interaction. These children appear to be moving in and out of interactions, with moderate lengths of solitary and peer interactions, but are for the most part connected with their peers. The final category of “stable-connect” encompasses the children who are engaged in sustained interactions (i.e. few breaks in the interaction for solitary or other behavior) for extended periods of time with little restarting of peer interactions. Restarting peer interactions were rated when either solitary behavior or interactions with adults preceded an interaction with a peer, marking the child’s reengagement with a peer after a break. Table 6 provides a summary of key indicators of interaction flow for each of the four categories of child connectedness.

Test of Study Hypotheses

To address the first research question as to the relationship between the student-teacher relationship and child social functioning, correlational analyses were conducted (see Table 7). Level of student-teacher conflict was significantly related to the amount of peer interactions the target child participated in on the playground and parent-rated behavior problems on the SSIS. Higher levels of conflict in the STR were associated with fewer peer interactions and more target child behavior problems as reported by the teacher. The amount of solitary behavior ($r = .388, p = .074$) and positive peer responses ($r = -.396, p = .068$) observed on the playground were marginally related with STR conflict, however no measures of social skills were significantly related with level of closeness in the student-teacher relationship. While STRS closeness was not related to measures of child social functioning, STRS conflict was related to some child social behaviors on the playground.

Based upon the parent- and teacher-rated social skills scores on the SSIS, children were placed in one of five categories of behavior level with regards to their level of functioning: well-below average, below average, average, above average, and well-above average. Standard scores have a mean of 100 with a standard deviation of 15 (Gresham & Elliott, 2008). Standard scores of social skills that are within one standard deviation of the mean fall into the “average” category of behavior (85-115). Scores between one and two standard deviations above the mean (116-130) are considered “above average” and those over two standard deviations above the mean (over 130) are considered “well-above average.” Similarly, standard scores between one and two standard deviations below the mean (70-84) are categorized as “below average” and scores more than two standard deviations below the mean (less than 70) are “well-below average.” One-way ANOVAs revealed no significant differences in STR closeness between

groups based on teacher social skills rating. Analyses revealed a significant group difference in parent-rated child social skill behavior level on STR conflict ($F(2,19) = 3.407, p = .054$). Tukey HSD post-hoc tests revealed a significant difference between the “well-below average” and the “below average” groups, with the “well-below” group ($M = 20.60$) significantly higher than the “below average” group ($M = 13.55$) on STR conflict ($p < .05$). Because teachers only rated children as “below average” or “average” in terms of social skills, an independent samples t-test was computed. There was a marginally significant difference between the “below average” and “average” groups ($t(20) = 1.978, p = .062$) on STR conflict, with the “below average” group ($M = 18.67$) rated higher on STR conflict compared with the “average” group ($M = 14.15$). Overall, when children were in a lower functioning group based on parent and teacher SSIS social skills, they had higher rates STR conflict. Figure 2 displays means and standard errors of STRS conflict for each group.

Child behavior patterns on the playground were examined for associations with STR quality (see table 8). STR closeness had no significant relationships with child behavior patterns, but the length of the longest peer interaction ($r = -.399, p = .065$) and number of new solitary intervals ($r = .382, p = .079$) were both marginally associated with STR closeness. The STRS conflict subscale was associated with the longest solitary behavior and average length of the solitary sequence indicating that when conflict is higher, there are longer sustained solitary periods for the child on the playground. In addition, higher STRS conflict scores were related with more adult interactions on the playground. There was a marginally significant relationship between STR conflict and the length of continuous interactions with peers ($r = -.382, p = .079$), with more STR conflict somewhat related to shorter periods of sustained peer interaction.

Using the child connectedness categorization previously described in the preliminary analyses, one-way ANOVAs were conducted to detect significant differences in STR quality between the five groups of children. Analyses revealed no significant difference between groups on STR closeness or conflict. However, because children in the “unstable-connected” and “stable-connected” groups were able to sustain somewhat prolonged interactions with their peers, they were further examined to see if there were differences between these two types of children on their STR quality. Independent samples t-tests were conducted for differences between the unstable- and stable-connected groups on STR closeness and conflict. Statistical analyses revealed a marginal difference between unstable-connected and stable-connected children on STR conflict ($t(10) = 1.854, p = .093$), with unstable-connected children having higher levels of STR conflict ($M = 17.0, SD = 5.13$) than stable-connected children ($M = 12.0, SD = 1.83$). The two groups did not differ significantly on STR closeness.

To test the mediational model with teacher behaviors mediating the relationship between STR and child social functioning, correlational analyses were conducted between teacher behaviors and all previously significantly related social skills and STRS variables. Because parent-rated social skills behavior level is a categorical variable, it was left out of the correlational analyses. Teacher emotional support, classroom organization, and instructional support were not related with STRS conflict, teacher-rated behavior problems, amount of peer and adult interactions on the playground and length of sustained solitary behavior on the playground. Because no significant correlations were found between child social behavior and CLASS domains, a mediational model was not supported.

To address the second aim of the study, correlational analyses were conducted between teacher attitudes toward inclusion and child social functioning (Table 9). Correlations revealed a

significant association between teacher attitude and parent-rated child behavior problems. Parent reported behavior problems were related to ATTAS total as well as affective and behavioral subscale scores. In addition, parent SSIS behavior problems scores were marginally correlated with the cognitive subscale of the ATTAS ($r = -.401, p = .064$). Parent rated social skills scores were marginally correlated with the cognitive subscale of the ATTAS, with correlation coefficient $r = .381$, and $p = .08$. Overall, only parent reported behavior problems were significantly related to teacher's attitudes towards inclusion, with more positive views towards inclusion associated with less reported child behavior problems.

One-way ANOVAs were conducted to examine whether there were significant group differences in ATTAS scores among children with different behavior levels ("well-below average" to "well-above average") taken from parent- and teacher-rated SSIS social skills standard scores. The only group differences found were based upon SSIS parent social skills behavioral levels, with only a marginally significant difference found on ATTAS cognitive subscale scores ($F(2,19) = 2.911, p = .079$).

Child behavior patterns on the playground were also examined for associations with ATTAS scores. No marginal or significant correlations were found between all child behavior patterns and ATTAS scores. Using the child connectedness categories based on playground behavior patterns, one-way ANOVAs were conducted to detect significant group differences in ATTAS scores, however no differences were found. As previously mentioned, because children in the "unstable-connected" and "stable-connected" groups were able to sustain relatively prolonged interactions with their peers, they were further examined to see if there were differences between these two types of children on their ATTAS scores. Analyses failed to find a difference between unstable-connected and stable-connected children on total and subscales of

the ATTAS. Overall, child behavior patterns on the playground were not associated in any way with teachers' scores on the ATTAS.

In order to test the mediational model, correlations were conducted between teacher behaviors (emotional support, classroom organization, and instructional support) and all previously found significant relationships between teacher attitude and child social skills. Correlational analyses were completed among the 3 domains of the CLASS, the parent-rated SSIS behavior problems standard score, and all four scores from the ATTAS (total, cognitive, affective, and behavioral). Correlational analyses revealed no significant relationship between teacher behaviors and ATTAS. There was a marginally significant relationship between classroom organization and parent SSIS behavior problems standard scores ($r = -.367, p = .093$), with a trend for classrooms higher in classroom organization having children with lower parent-rated behavior problems. Because there were no significant correlations between ATTAS and teacher behaviors, a mediational model was not supported.

Although no mediational model was discovered, additional analyses were conducted to examine the relationship between child social behaviors and specific teacher behavior domains within the classroom. Correlational analyses were conducted to determine whether the different domains from the CLASS were related with child social functioning (see Table 10). Teacher classroom organization was marginally associated with parent- and teacher-rated social skills ($r_s = .374, p_s = .087$ and $.086$, respectively) as well as with parent-rated behavior problems ($r = -.367, p = .093$). Teachers rated higher on classroom organization tended to have students with higher social skills according to both parents and teachers, and children with lower behavior problems as rated by parents. Instructional support was significantly related to parent ratings of child social skills, with more instructional support within the classroom related to higher ratings

by parents of child social skills. In addition, parent SSIS empathy ($r = .441, p < .05$) and externalizing ($r = -.450, p < .05$) subscales were significantly related to instructional support, with the responsibility subscale trending towards significance ($r = .399, p = .066$). Overall there is some indication that teacher's amount of classroom organization may be associated with child social skills while instructional support was found to be associated with parents' views of child social skills.

To test for possible differences in the CLASS domains between different groups of children based on their behavior problem and social skills behavior level on the parent- and teacher-rated SSIS, separate one-way ANOVAs were conducted. No significant differences were found for emotional support or instructional support; however, marginal differences were found for classroom organization ($t(20) = 1.975, p = .062$), with children with "below average" teacher-rated social skills tending to be in classrooms with lower classroom organization ($M = 4.20, SD = 1.41$) than those with "average" teacher-rated social skills ($M = 5.10, SD = .70$). Figure 3 depicts the differences between the groups.

Correlation analyses were conducted between CLASS dimension scores and child behavior patterns on the playground to further test the association between teacher behaviors and child social skills. No significant associations were found, however one marginal association was revealed. There was a trend for classrooms higher in emotional support to have children with longer sustained peer interactions ($r = .407, p = .06$). Child connectedness based on these playground behavior patterns were also examined for relationships with the CLASS dimensions. One-way ANOVAs revealed no significant group differences in emotional support, classroom organization, or instructional support for the different groups of social connectedness.

CHAPTER 4: DISCUSSION

A growing body of research has documented associations between teacher characteristics and child social functioning in both typically developing and ASD populations. However, much of the research has failed to examine how actual teacher behaviors and beliefs influence the social interactions of children with ASD in unstructured environments such as on the playground. Because the vast majority of children's social interactions take place within the confines of school, it is imperative that researchers capture what teachers are doing to facilitate the social development of children with ASD, who are particularly prone to poor peer relationships. In addition, although there has been a push to increasingly include children with ASD in regular education settings, little is known about how these children are actually interacting with their peers. While many studies have focused on testing interventions for improving social skills in school, few have focused on how children with ASD are functioning in mainstream settings independent of any specific intervention (Chan & O'Reilly, 2008; Kasari, Rotheram-Fuller, Locke, & Gulsrud, 2012; Locke et al., 2010; Locke, Kasari, & Wood, 2014; Rotheram-Fuller et al., 2010; Mazurik-Charles & Stefanou, 2010; Owen-DeSchryver, Carr, Cale, & Blakeley-Smith, 2008; White, Keonig, & Scahill, 2007). Furthermore, no studies examining the relationship between naturalistic teacher behaviors and child social functioning of children with ASD have been found.

The current study looked to characterize the social functioning of children with ASD in regular education settings and attempted to go beyond self-report measures to examine actual teacher behaviors in the classroom and child behaviors on the playground. Additionally, this study sought not only to determine how children with ASD in regular education are faring

socially, but also to better understand how teachers contribute to the social functioning of this unique group of children. The high rate of interactions between children and their peers in school provides for the greatest opportunity to develop and practice social skills for all children, and is a critical opportunity for children with ASD. Despite the fact that children with ASD may have chances outside school to interact with peers during playdates (Frankel, Gorospe, Chang, & Sugar, 2011), the amount of time spent with peers in one school day exceeds the amount of time many children spend on playdates during an entire month. Furthermore, elementary school teachers are situated within the school context and therefore have a unique ability to influence these children and their peers as well as facilitate (whether knowingly or not) this relationship. The attainment of pro-social goals and success of students with ASD are often dependent on the expertise of all educational professionals when placed within regular education environments (Goodman & Williams, 2007). Goodman and Williams (2007) in their article on successful interventions for children with ASD in inclusive classrooms instruct school personnel that when working with this population it is just as important to understand “how these children are different as it is knowing ways to help them learn cognitively and socially.” The current study is the first, to my knowledge, to examine a measure of naturalistic teacher behavior widely used within the typically developing literature to help explain some of the variability in the social functioning of children with ASD in regular education settings. Because of the increased placement of children with ASD in classrooms with their typically developing peers, it is especially important to examine key factors within the classroom that are associated with the social functioning of these children.

Preliminary analyses of the observational coding of playground behaviors yielded several relevant findings. First, no child was completely solitary or completely engaged for the entirety

of the playground observations. Children overall tended to move in and out of social interactions with peers or adults, with some able to sustain relatively longer interactions with peers. On average, children with ASD were engaged in social interactions with their peers more than they were solitary. Because total amounts of behaviors on the playground fail to give a clear picture of the fluid nature of social interactions on the playgrounds, a more in depth look at how the children were acting over the course of the observation was needed. After closely examining the behavior patterns of children on the playground, distinct differences in child social connectedness with peers began to emerge. As a result, children were categorized into one of four groups created by examining the flow of social interactions on the playground through sequential examinations of individual observation intervals of each participant's playground social behavior codes. To our knowledge, no studies have examined how children move in and out of interactions on the playground, with measurements of playground behavior often consisting of total or average number of interactions as a summary of the child's social functioning (Anderson, Moore, Godfrey, & Fletcher-Flinn, 2004; Frankel et al., 2011; Ingram, Mayes, Troxell, & Calhoun, 2007). The unique technique in the current study of examining the flow of social interactions on the playground allowed for a more detailed look at the fluid nature of interactions, providing a better picture of the social exchanges between the target child and his/her peers on the playground.

The quality and nature of STRs have previously been shown to affect both the social and academic outcomes of children, with STRs characterized by high levels of closeness and low levels of conflict positively linked with the school adjustment of children (Birch & Ladd, 1997; Hamre & Pianta, 2001). Student-teacher relationships characterized as close have shown to be a protective factor for children with behavioral problems, with these children showing significantly

greater school outcomes when compared to similar children without a close student-teacher relationship (Baker, 2006). Interestingly, STR closeness was not significantly related to child social behaviors for the current sample of mainstreamed children with ASD. These findings are in line with previous research that found STR conflict was related to child social inclusion for children with ASD (Robertson et al., 2003). Unlike typically developing children, children with ASD do not seem to benefit socially from STRs with high levels of closeness. The relatively high levels of closeness seen in previous and current samples of children with ASD may point to the variable nature of the relationship between students with ASD and their teachers. Conflictual relationships may be more salient to peers due to the fact that these types of relationships deviate more from the typical STR seen in the classroom. In other words, because rates of STR conflict are relatively low in classrooms, when a relationship is high in conflict it may stand out and have a greater impact on how peers perceive that child. Children may be more hesitant to interact with this child on the playground, thus they are prone to spending more time alone or interacting with adults rather than peers. Peers may be able to pick up on the frustration by the teacher when working with a particular child, thus indirectly influencing other children's views on the child. This may inadvertently label the child as someone who is difficult to work with, making peers less likely to seek that child out as a playmate. There was some evidence that among children who are more engaged with their peers on the playground, STR conflict differentiated between those that are able to more stably connect with peers compared with those that are more tenuously connected. Having less conflict with a teacher may help to propel children into more stably connected social interactions with their peers. Further research needs to be done to examine this relationship in a larger sample that would be able to detect if there was a significant difference between these differently socially connected groups of children. Conversely, traitlike

patterns (e.g., aggression and anger) that create STR conflict may carry over into negative peer relationships, potentially explaining the patterns of association found in this study as well.

In addition, STR conflict may also be a risk factor for children with poor social skills to begin with, such as children with ASD. Previous research examining the differences in STR between children with intellectual disabilities (ID) and TD children found significant differences between the groups on overall STR quality as well as on levels of closeness, conflict, and dependency (Eisenhower et al., 2007). Children with ID were rated significantly higher on their levels of conflict and lower on levels of closeness when compared with same-aged TD children. There also appears to be some evidence that children with ASD have STRs with significantly more conflict even when compared with other children with intellectual disabilities (Blacher et al., 2014). The current study found similarly high levels of conflict that seemed to be related to child social functioning with peers on the playground. Therefore, finding ways to decrease levels of conflict could help to not only have more cohesive STRs, but may have some effects on child social engagement with their peers.

While teacher attitudes towards inclusion were not related to child social skills, they were related to parent-rated behavior problems. Similar to previous findings, when behavior problems were higher in children with ASD, teachers tended to have more negative views towards inclusion (Avramidis & Norwich, 2002; Cook, 2001). In general, teachers had relatively positive beliefs that all students can succeed in the general education classroom (cognitive); however their attitude towards developing personal and professional relationships to foster inclusion (affective) and their belief in their ability to create an accepting environment (behavioral) were much lower than in previous studies. While these attitudes were not associated with any child social outcomes, there could be a possible effect that was not detected due to the low sample

size. When examining the teacher interviews, several quotes from teachers could possibly shed some light on the discrepancy between teachers' thoughts about inclusion and their actions with regards to creating that accepting environment. A common theme brought up by several teachers was their lack of knowledge of ASD and how to make accommodations for the child in the classroom. When asked how supported she was in her ability to address the specific needs of the student in her class, one teacher felt rather unsupported and uninformed. "I think the school districts should, if they know I'm going to have a kid in my class, they should provide me with the training that gives me knowledge and skills of autism and the brain. . .how they learn. . . I would think it would be so much more beneficial if I were to be able to gain some knowledge of what it is and how I can best reach that child with what accommodations." As another teacher put it, "I'm given his IEP at the beginning of the year. I don't remember what's on it but the resource teacher will come and sit with him a couple times a weeks to help him. . .She's the one that works with him individually." While teachers may have a positive attitude towards including these children, they may not have the knowledge or support to be able to follow through with it, or they may rely on someone else, such as a resource teacher or aide, to assist in the child's inclusion.

Previous research has found that teachers who were considered skilled in including students with disabilities had high levels of tolerance, particularly for the teaching of all children, regardless of disability (Olson, Chalmers, & Hoover, 1997). Olson and colleagues also found that these teachers tended to be more flexible not only with their expectations for each child, but also in their own teaching behavior. Teachers were also frequently described as looking for "new and better ways of doing things," and self-reflective in their planning for their students. Perhaps due to their openness toward new techniques to further the development of all their

students, these teachers all described having positive working relationships with the special educators at their school. Despite this positive working relationship, many teachers still desired additional assistance, and agreed that an insufficient amount of time was available for collaboration among teaching staff and administrators. Finally, an emphasis was placed on providing a positive and warm environment for all students to help foster not only the academic, but the social development of the students as well. Monsen and Frederickson (2004) also found that teacher attitude was related to higher classroom satisfaction and lower friction, but this only held true when teacher attitudes were rated in the 75th percentile and above on a measure of attitude towards inclusion. The current sample of teachers had relatively low attitudes towards cultivating working relationships, with few emphasizing the desire to receive further assistance through mentoring from someone adept at providing differentiated teaching. They had fairly low ratings with regards to believing they could create an accepting environment for all students. Because of the lack of support and information as to how to provide an inclusive environment, teachers may feel that they are unable to create this environment on their own, thus explaining the lower scores on the ATTAS. While they believe inclusion is important, they may not have the necessary skills and know-how to actually follow through on that belief.

Another explanation for the lack of significant finding between teacher attitudes and actual behavior could be the fact that measures of attitude and behaviors tend to be unassociated unless the attitude measure is specifically linked with both the behavioral action being observed as well as the targets of those attitudes (Ajzen & Fishbein, 1977). Ajzen and Fishbein argue that most people believe attitude predicts behavior due to a general notion of consistency between the two, assuming a person's behavior is consistent with their attitude. However, unless an explicit and unambiguous definition of the attitude-behavior consistency is given, these connections tend

to be more intuitive and less likely to be related with one another. Both attitudes and behaviors are defined by their actions directed at someone or something (target), within a specific context and time. Ajzen and Fishbein found in their research review that relationships between attitude and behaviors are found when both the target and action of both measures are highly corresponding. The action and target at which the action is directed are just two of the four different elements of attitudinal and behavioral entities, with context and time being the other two. Teachers may have positive thoughts towards inclusion and child success, but it may not directly affect their own behaviors within the classroom on a regular enough basis to make any lasting impression on the social functioning of students. Because the current study did not measure the teacher's behaviors with regards to what behaviors they are exhibiting in class to include children with disabilities, it is understandable that few associations were found between the ATTAS and child social functioning.

While teacher behaviors in the classroom did not afford a mediational model, there were some findings that point to the importance of certain domains for positive social outcomes for children with ASD. While previous studies have shown that emotional support is of particular importance to the social functioning of typically developing children (Curby et al., 2013; Mashburn et al., 2008; Wilson et al., 2007), little is known if and how classroom climate impacts the social outcomes of children with ASD. To date there have been no studies examining how naturally occurring teacher behaviors influence the social outcomes of children with ASD in regular education classrooms. Interestingly, while emotional support had a marginal relationship with the length of sustained peer interactions on the playground, greater evidence was found for the association of classroom organization and social functioning for the current sample. Numerous studies have cited several different effective strategies for the inclusion of children

with ASD in regular education classrooms, with many of them emphasizing the importance of structure, routines, and predictability (Harrower & Dunlap, 2001; Humphrey, 2008; Humphrey & Lewis, 2008b). Several different characteristics of successful inclusion classrooms, many of which are echoed within the classroom organization domain of the CLASS, have been found. Providing structure within the classroom through clear expectations, routines, and preparation are all important, or as Humphrey puts it in his 2008 paper “creating order from chaos.” Schools and classrooms have the potential to be very disorganized and chaotic due to the large number of children within a rather small space for extended periods of time together. Distress due to changes in routines or overstimulation pose potential threats to social functioning in children with ASD as their peers would be hesitant to interact with a child that is constantly upset. Therefore, classrooms that rate highly on the classroom organization dimension of the CLASS which encompasses the teacher’s behaviors with regards to behavior management, productivity, and instructional learning format, would be the most ideal environment of children with ASD. These classrooms have clear behavioral expectations for all children with few conflicts among children, with teacher anticipation and redirection of misbehavior. Teachers are able to maximize the learning time by instilling routines and smooth transitions with little time wasted due to high levels of teacher preparation. Finally, teachers in classrooms with high organization effectively facilitate child engagement through the use of creative and interesting materials and increase student interest through hands-on experience while clearly orienting children towards the learning objectives. When children with ASD are situated in classrooms with high organization, they are able to feel more at ease and thus may be more amenable to interacting with their peers. Moreover, peers may be more apt to interact with the child with ASD when they are not distressed. This may serve as an important protective factor in the development of

social relationships with peers for children with ASD. While the classroom organization domain may not have been related to child social skills in typically developing populations, it may be related to the social functioning of children with ASD due to the nature of disorder itself, with classroom organization being more important when working with these children in the classroom.

While emotional support may not have been associated with child social outcomes as much as classroom organization was, there are some indications that it may still bear some influence. Level of emotional support observed in the classroom pointed towards an association with the length of sustained interactions with peers on the playground. When teachers provide more emotional support in the classroom children seem to be able to sustain interactions with their peers for longer periods of time. This may be due to the fact that classrooms high in emotional support are characterized by frequent positive communications, affect, and respect between teacher and students with relatively low levels of negative affect, punitive control, and sarcasm or disrespect. Emotionally supportive teachers also seek to support and guide students, anticipating their needs and responding accordingly. They also support student autonomy and leadership, incorporating student ideas into lessons and encouraging student talk and expression. By creating a culture within the classroom that supports individuality and encourages positive and supportive actions, children may create positive relationships within the class that carry over outside the classroom and on to the playground.

There was an association between child social skills and instructional support for the current sample, something that previously hasn't been found. Classrooms rated higher in instructional support were related with higher child social skills as rated by parents. While at first this may seem counterintuitive, further examination of the teacher behavior dimensions that

go into the instructional support domain may shed some light on why this association was seen. Teachers rated high in instructional support have frequent discussions that encourage analysis and reasoning, linking concepts to previous lessons and to student's own lives. They provide opportunities for students to be creative and generate their own ideas providing scaffolding as needed. There are frequent back-and-forth exchanges between the teacher and students, with teachers encouraging students to explain their thinking while encouraging student involvement and persistence. These classrooms are marked with frequent conversations among peers, with an emphasis on open ended questions. Many of the teacher behavior dimensions captured in the instructional support domain place an emphasis on extended conversations to increase learning and understanding of the concepts being taught. As a result, this may inadvertently aide in the social skills of children with ASD, many of whom fail to engage in the back and forth exchange of conversations due to the nature of the disorder. If a classroom with high levels of instructional support emphasizes these exchanges, children with ASD in that classroom may be benefitting socially. Although these increased skills may not transfer to their social interactions on the playground, parents may see their children as having higher social skills because of this increased emphasis on conversations in the classroom.

Overall child social functioning on the playground seems to be most related to STR conflict. While no connection was found between teacher attitudes towards inclusion and child social functioning, child behavior problems were related to teacher attitudes as well as STR conflict. Although it was found that when children have more behavior problems they tend to have STRs with more conflict, that relationship may be due to shared method variance as both measures are completed by the teacher. Teaching behaviors in the classroom were found to be somewhat related with parent- and teacher-reported child social skills, but that influence failed to

be carried out to the child's social interactions on the playground. Because teacher behaviors and the classroom climate created from those behaviors is the same for all children, it may not differentially affect children with ASD enough to see the effects on the playground. However, because student-teacher relationships vary from student to student, differences within those may have a lasting impact on the social relationships of children in general. Having an STR high in conflict may serve to differentiate children with ASD even more from their peers, thus negatively impacting their social interactions on the playground. Understanding school factors that directly impact child social functioning on the playground is still somewhat of an enigma. The nature of the student-teacher relationship as well as the amount of teacher emotional support in the classroom are just two potential factors that influence the social functioning of children with ASD on the playground, an area that is often difficult for them to navigate.

Future Directions

With specific regard to the social functioning of children with ASD in regular education classrooms, the current study serves as a first step towards understanding the unique contribution of teachers. As measurements of teacher influence on children with autism have often been from teacher self-reports, adding an observational measurement of teacher behavior in the classroom allowed for a unique examination of naturalistic teacher behaviors and their influence on child social outcomes. Given that the current findings on the relationship between teacher behaviors and the social functioning of children with ASD is somewhat different than with typically developing children (Curby, Brock, & Hamre, 2013; Gest & Rodkin, 2011), future studies should examine why classroom organization, compared with emotional support, is important for the social functioning of these children. The use of behavioral patterns gathered from playground observation measures to assess the social interaction flow on the playground provided additional

information previously unexamined in other studies. Future studies should look to gather additional information with regards to child social interaction patterns and flow on the playground. For example, notes should be taken to examine if the target child's social overtures are with a consistent peer or whether he/she is moving between a number of different children. This would allow for a more complete view of the child's success or difficulty with engaging on the playground.

The current study did not examine the social standing of children with ASD in the classroom, however such information could possibly shed some light on the child's behavior patterns on the playground. Previous research has found some associations between child playground behaviors and teacher ratings of child social skills. While Kasari and colleagues (2011) didn't find any significant associations between child behavior on the playground and peer friendship nominations or social network centrality, they may be associated with child behavior patterns on the playground. Aggregates of the different types of child behavior may not capture the true nature of the social interactions on the playground. Future studies should look to examine different measures of child social inclusion within the classroom with measures of child behavior patterns on the playground.

The current study looked at concurrent ratings of all variables, therefore directionality of influence among variables was not clear. Previous studies have examined the variance in STR quality as a result of child social skills for children with autism (Blacher et al., 2014), but arguable the directionality may be the opposite as well. Research among typically developing children has shown that earlier and concurrent rates of social skills and STR quality form a somewhat interactive relationship (Howes, 2000). Jennings and Greenburg (2009) denotes such

an interactive nature between teacher and classroom variables on the social outcomes of children. However, an additional layer encompassing all those factors should be added to the model; the influence of time. Relationships and competence in early grades have been shown to greatly influence later child functioning (Hamre & Pianta, 2001; Howes, 2000), thus making it difficult to tease apart the influence of a particular teacher on child outcomes. When children have early STRs characterized by high conflict, this may set them upon a negative trajectory that could be difficult to get deviate from. Researchers should look to examine not only how concurrent STRs influence child social outcomes, but also whether or not changes over the school year (and across school years) in STR quality impacts child social functioning. In addition, to better understand the directionality of this relationship, future research should look to see how changes in child social functioning over the school year affect STR quality.

A final recommendation for future researchers is to further examine how to enhance the naturally occurring teacher behaviors to provide a brief, effective, and simple intervention to help facilitate positive social outcomes for mainstreamed children with ASD. Based upon findings from the current study, child social outcomes may already benefit from the teacher's level of emotional support, classroom organization, and instructional support in the classroom. If future studies are able to take what is already occurring within the classroom and help teachers to enhance those qualities, children could potentially benefit greatly without the implementation of a highly structured and cumbersome intervention. School-based social skills interventions for children with ASD have traditionally been found to be minimally effective, with poor transference of skills across settings and play stimuli (Bellini, Peters, Benner, & Hopf, 2007). However, there has been some evidence that interventions were more successful when done within a more naturalistic setting such as the student's classroom. With regards to

implementation of strategies for children with disabilities in regular education classrooms, Scott, Vitale, and Masten (1998) found that while teachers were generally positive about the effectiveness and feasibility of the intervention, they were unlikely to alter their whole-group instruction strategies. Therefore, although teachers may have a desire to implement a new strategy that would positively impact child outcomes, there may be barriers that prevent them from accommodating the needs of the individual student with special needs. This was echoed in the response of one teacher when asked how she was able to alter her teaching to help include the child with ASD in her classroom. “The standards are really what dictates what we teach. I do have guidelines that I have to follow. I have curriculum which is my responsibility to make sure all the children are learning it. As far as, you know, specific techniques I use, it’s personal to me. . . We do reading workshop every day and we do writing workshop which is a little bit more rigid with what we are allowed to do, what practices follow the very specific schedule. And we kind of do the same thing every day.” While there is room for some flexibility, for many of the core subjects that are being addressed every day in class, many teachers are required to follow strict guidelines for implementation of the material. Not only can there be a strict way to teach much of the material, there may also be little flexibility with how the material is presented leaving little room for differentiated teaching needed to address the specific needs of the child with ASD in the classroom. In addition, fidelity and sustainability is often an issue that arises when an intervention program is implemented within a school, especially when the teacher is responsible for providing the intervention (Gresham, MacMillan, Beebe-Frankenberger, & Bocian, 2000; Noell, Witt, Gilbertson, Ranier, & Freeland, 1997). Therefore, if an intervention is able to work within the classroom structure that is already in place to help bolster naturally occurring teaching behavior that has an impact on child social functioning, success will be more

likely and issues with fidelity will not arise. Teachers will be more likely to apply any changes from an intervention in their classroom if they are built around what they are typically doing. This can help to increase teacher buy-in, something that has previously been shown to be important for any intervention to be successful in schools (Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). By building upon techniques and behaviors that the teacher is already using in his/her classroom, positive gains could be made in the social lives of all the children in his/her classroom in general, and particularly for children with ASD.

There are several limitations to the current study which should be addressed in future studies. First and foremost, difficulty with recruitment led to a small sample size, limiting the ability to detect true associations and differences among the key study variables. Due to the small sample size, additional analyses could not be conducted to determine if differences were seen in child social functioning and teacher behavior and attitudes between different types of schools (i.e. private, public, and charter). Because the current study did not have enough participants in each group to conduct meaningful analyses, we were unable to determine how the broader school context influenced child and teacher characteristics. Future researchers should look to form relationships with schools and school districts in order to aide in their recruitment of participants in their study.

Another limitation of the current study was the lack of IQ scores for children. Previous studies have shown that child IQ for children with intellectual disabilities is not related to STR quality (Blacher et al., 2014), however it remains unknown whether IQ would differentially impact STR quality for children with ASD. Finally, due to school policy regarding visitors in classrooms, the number of visits required to gather data varied across participants. Future studies

should look to try to standardize their observations to eliminate some variability due to differences in data collection.

Additionally, the current study collected playground behaviors during only one school visit. With only one observation period, it is difficult to state whether the child's recorded was typical for that child. It stands to reason that there may have been outside factors influencing the child's behavior that day, and the child's behavior during that one observation period may not be indicative of their typical functioning on the playground. Other observation studies have previously used coding from at least two different days in order to increase the chance of capturing the child's typical playground behavior (Kasari et al., 2011; Wood et al., 2014). Due to the limited resources of the current study and school policies about observations, multiple playground observations were not feasible. Therefore, future studies should work to ensure that observations are done for a minimum of two separate days for each participant.

Another limitation was that the current study did not examine the effect of paraprofessionals on the social functioning of children. There were 10 children who had one-on-one aides in the classroom, however only 4 were present during the observations due to varying lengths of time each child received this service. Previous research has shown that children are more likely to be engaged on the playground if they do not have an aide (Kasari et al., 2011). However, even if children do not have their aide with them on the playground, the fact that the child has an aide may be enough to mark him or her as different from his or her peers, negatively impacting his/her social standing. Therefore future studies should make sure to take this into consideration and include measures of the aide's behavior with the child to determine if that has an effect on child social functioning.

Finally, measures of the larger school climate that directly influence classroom interactions were not examined. Some schools place an emphasis on diversity, with lessons highlighting the differences in various cultures and ethnicities conducted in class. Disability status is one form of diversity within a classroom setting, comparable in some ways to racial and ethnic diversity, a greater amount of which has previously been found to have a positive effect on student outcomes (e.g., Graham, 2006). Schools that place a greater emphasis on diversity and acceptance of all children may foster a more positive and inclusive environment, allowing children with ASD to avoid being labeled as different compared with their peers. Future studies should look to examine whether a larger school culture of acceptance of diversity that is emphasized within the classroom influences the social functioning of a child with ASD in that classroom.

CHAPTER 5: TABLES

Table 1

Totals and Percentages of Demographics for Children and Families by Location (N = 22)

	Los Angeles (<i>n</i> = 19)	Oahu (<i>n</i> = 3)
Child sex – male	15 (78.9)	3 (100)
Mean child age (<i>SD</i>)	7.53 (1.12)	5.33 (.58)
Child ethnicity		
White	10 (52.6)	0
Asian	0	1 (33.3)
African American	0	0
Latino	5 (26.3)	0
Other/Mixed	4 (21.1)	2 (66.7)
Maternal education		
High school graduate	1 (5.3)	0
Junior/Community college graduate	1 (5.3)	1 (33.3)
College graduate	9 (47.3)	2 (66.7)
Graduate degree	3 (15.8)	0
Professional degree	5 (26.3)	0
Marital status – Married	14 (73.7)	2 (66.7)
Gross family income		
< \$30,000	1 (5.3)	1 (33.3)
\$30,000-50,000	1 (5.3)	0
\$50,001-70,000	3 (15.8)	1 (33.3)
\$70,001-90,000	1 (5.3)	0
>\$90,001	13 (68.3)	1 (33.3)
Child autism diagnosis		
Autism	15 (78.9)	3 (100)
Asperger's	3 (15.8)	0
PDD-NOS	1 (5.3)	0

Table 2

*Summary of Demographics for Teachers, Observed Classrooms, and Schools by Location**(Totals with Percentages in Parentheses)*

Characteristics	Los Angeles (<i>n</i> = 19)	Oahu (<i>n</i> = 3)
Teachers		
Sex – Female	16 (84.2)	3 (100)
Age		
20-35	11 (57.9)	3 (100)
36-45	6 (31.6)	0
46-55	2 (10.5)	0
Years of experience		
0-4 years	5 (26.3)	1 (33.3)
5-9 years	9 (47.4)	2 (66.7)
10-14 years	0	0
15-19 years	3 (15.8)	0
20+ years	2 (10.5)	0
Highest degree		
Bachelor's	6 (31.6)	2 (66.7)
Master's	13 (68.4)	1 (33.3)
Observed classrooms		
Grade level		
Kindergarten	3 (15.8)	3 (100)
1 st grade	4 (21.05)	0
2 nd grade	4 (21.05)	0
3 rd grade	8 (42.1)	0
Average class size (<i>SD</i>)	23.74 (6.45)	25 (8.66)
Average number of students per teacher (<i>SD</i>)	18.1 (9.4)	16.1 (16.4)
Schools		
Average % of economically disadvantaged students (<i>SD</i>) ^a	30.5 (31.6)	50.7 (16.2)
Mean number of students (<i>SD</i>)	526.9 (156.9)	446.3 (166.9)

Note. Number of schools in Los Angeles (*n* = 15) and on Oahu (*n* = 2) are different the number of teachers and classrooms due to multiple participants within a few of the schools.

^aEligible for free or reduced-price lunch program.

Table 3

Summary of Teacher Characteristics and Child Social Functioning Measures

	<i>M</i>	<i>SD</i>	Range
Student-teacher relationship			
Closeness	23.37	6.02	13-34
Conflict	16.00	5.61	8-29
Attitude toward teaching all children			
Total score	24.45	7.63	13-33
Cognitive	10.91	3.58	5-17
Affective	7.55	3.02	3-12
Behavioral	6.0	2.18	3-9
Teacher behaviors			
Emotional support	5.56	.67	4.50-6.50
Classroom organization	4.73	1.11	2.25-6.08
Instructional support	3.77	1.02	2.42-5.25
Playground observation ratings			
Solitary	16.09	10.48	2-32
Any peer interaction	20.77	12.37	1-36
Positive/appropriate peer response	20.70	10.38	1-31
Negative peer response	4.28	3.51	1-12
Negative target child behavior	1.93	.92	1-4
Social skills (SSIS) – parent	80.32	14.13	58-109
Social skills (SSIS) – teacher	89.64	12.84	72-113
Behavior problems (SSIS) – parent	117.91	18.22	92-155
Behavior problems (SSIS) – teacher	109.73	14.45	88-138

Note. Playground observation ratings are number of intervals out of 40 that the particular behavior was observed.

Table 4

Correlations of Behavior Problems and Observer-Rated Measures of Child Social Functioning with Parent- and Teacher-Rated Social Skills

Observer-rated playground behavior	Social skills – parent	Social skills – teacher	Behavior problems – parent	Behavior problems – teacher
Solitary	.085	-.356	-.040	.389
Peer interaction	-.095	.394 [†]	.040	-.433*
Pos. peer response	-.138	.366 [†]	.053	-.403
Neg. peer response	.202	.234	-.149	.126

[†] $p < .10$, * $p < .05$, ** $p < .01$

Table 5

*Correlations Between Child Social Behaviors on the Playground and Teacher-Rated SSIS**Subscales*

SSIS teacher subscales	Child playground behaviors		
	Solitary	Peer interaction	Pos. peer response
Cooperation	-.494*	.518*	.521*
Responsibility	-.494*	.520*	.505*
Engagement	-.459*	.475*	.504*
Behavior problems	.428*	-.465*	-.489*
Hyperactive/Inattentive	.562**	-.588**	-.601**

* $p < .05$, ** $p < .01$

Table 6

Summary of Playground Behavior Patterns for Different Categories of Peer Connectedness

	Adult focused <i>N</i> = 4		Missed-connect <i>N</i> = 6		Unstable-connect <i>N</i> = 8		Stable-connect <i>N</i> = 4	
Playground behaviors	<i>M</i> (<i>SD</i>)	<i>Range</i>	<i>M</i> (<i>SD</i>)	<i>Range</i>	<i>M</i> (<i>SD</i>)	<i>Range</i>	<i>M</i> (<i>SD</i>)	<i>Range</i>
Missed peer interaction	1.50 (.58)	1-2	4.33 (.52)	4-5	2.13 (2.48)	0-7	1.75 (1.50)	1-4
New solitary intervals	4.50 (1.29)	3-6	6.67 (1.21)	5-8	5.00 (1.77)	2-8	4.00 (1.71)	2-5
Average length of solitary sequence	5.39 (.78)	4.5-6.4	3.10 (1.27)	1.4-4.5	2.04 (.85)	1-3.6	1.5 (.58)	1-2
Longest sustained solitary behavior	14.00 (1.15)	13-15	6.00 (2.45)	3-9	4.00 (2.39)	2-9	.25 (.50)	0-1
New peer interactions	1.25 (.50)	1-2	6.50 (1.38)	5-8	5.63 (2.13)	3-8	4.25 (.96)	3-5
Average length of peer interaction sequence	1.50 (.58)	1-2	2.41 (.99)	1.6-4.3	4.95 (1.78)	2.9-7.3	7.05 (.10)	7-7.2
Longest sustained peer interaction	1.50 (.58)	1-2	6.00 (4.10)	3-14	11.88 (3.76)	7-18	14.25 (2.50)	13-18
Number of adult interactions	6.50 (.58)	6-7	2.50 (2.17)	0-5	3.13 (1.81)	0-5	.50 (1.00)	0-2

Table 7

Correlations of Child Behavior Problems and Child Social Functioning with Student-Teacher Relationship Quality

	STRS scores	
	Closeness	Conflict
Social skills – parent	.137	-.125
Social skills – teacher	.155	-.237
Behavior problems – parent	-.250	.225
Behavior problems – teacher	.107	.586**
Solitary ^a	.355	.388 [†]
Peer interaction ^a	-.329	-.428*
Positive peer response ^a	-.337	-.396 [†]
Negative peer response ^a	.281	-.306

[†] $p < .10$, * $p < .05$, ** $p < .01$

^a Social functioning based on behavioral observation ratings of child behavior on the playground.

Table 8

Correlations Between Playground Behavior Patterns and Student-Teacher Relationship Quality

Child behavior patterns	Teacher characteristics	
	STRS closeness	STRS conflict
Missed peer interaction	.259	-.170
New solitary intervals	.382 [†]	-.104
Average length of solitary sequence	.267	.500*
Longest sustained solitary behavior	.278	.474*
New peer interactions	.038	-.171
Average length of peer interaction sequence	-.340	-.327
Longest sustained peer interaction	-.399 [†]	-.382 [†]
Adult interactions	.127	.444*

[†] $p < .10$, * $p < .05$, ** $p < .01$

Table 9

Correlations of Child Social Functioning and Behavior Problems with Teacher Attitude Towards Inclusion

	ATTAS scores			
	Total	Cognitive	Affective	Behavioral
Parent SSIS social skills standard score	.359	.381 [†]	.240	.298
Parent SSIS behavior problems standard score	-.500*	-.401 [†]	-.437*	-.486*
Teacher SSIS social skills standard score	.066	.206	-.079	.002
Teacher SSIS behavior problems standard score	.253	.130	.318	.231
Child solitary ^a	.026	-.044	.044	.103
Child peer interactions ^a	-.064	.001	-.064	-.138
Positive peer responses ^a	-.004	.013	.022	-.066
Negative peer responses ^a	-.042	-.028	-.020	-.075

[†] $p < .10$, * $p < .05$, ** $p < .01$

^a Social functioning based on behavioral observation ratings of child behavior on the playground

Table 10

Correlations of Child Behavior Problems and Child Social Functioning with CLASS Domains

	CLASS dimensions		
	Emotional support	Classroom organization	Instructional support
Parent SSIS social skills standard score	.317	.374 [†]	.521*
Parent SSIS behavior problems standard score	-.095	-.367 [†]	-.266
Teacher SSIS social skills standard score	-.065	.374 [†]	-.065
Teacher SSIS behavior problems standard score	.055	.099	.265
Child solitary ^a	-.307	-.070	-.026
Child peer interactions ^a	.264	.071	-.009
Positive peer responses ^a	.224	.017	-.050
Negative peer responses ^a	.315	.408 [†]	.356

[†] $p < .10$, * $p < .05$, ** $p < .01$

^a Social functioning based on behavioral observation ratings of child behavior on the playground

CHAPTER 6: FIGURES

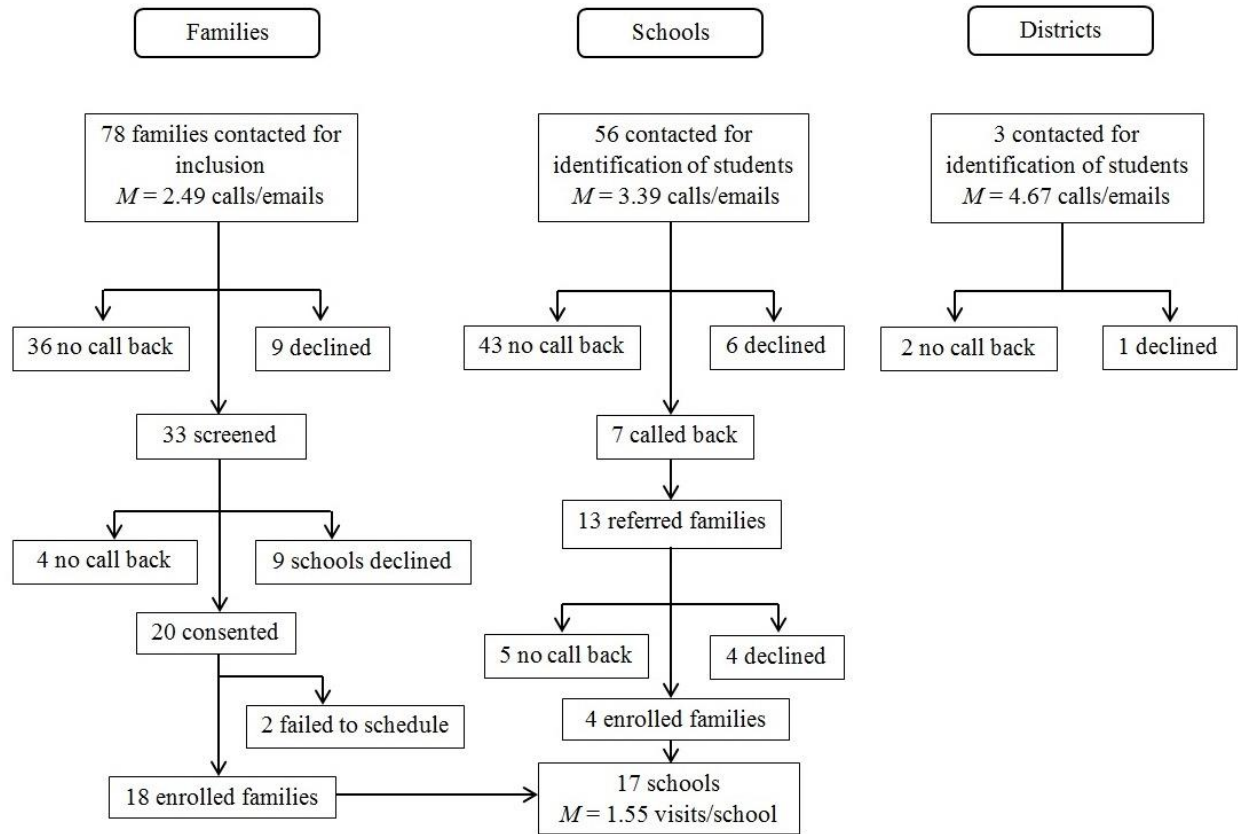


Figure 1. Response rate through the recruitment and enrollment process. Averages are per family, school, or district. All districts contacted were in the greater Los Angeles area.

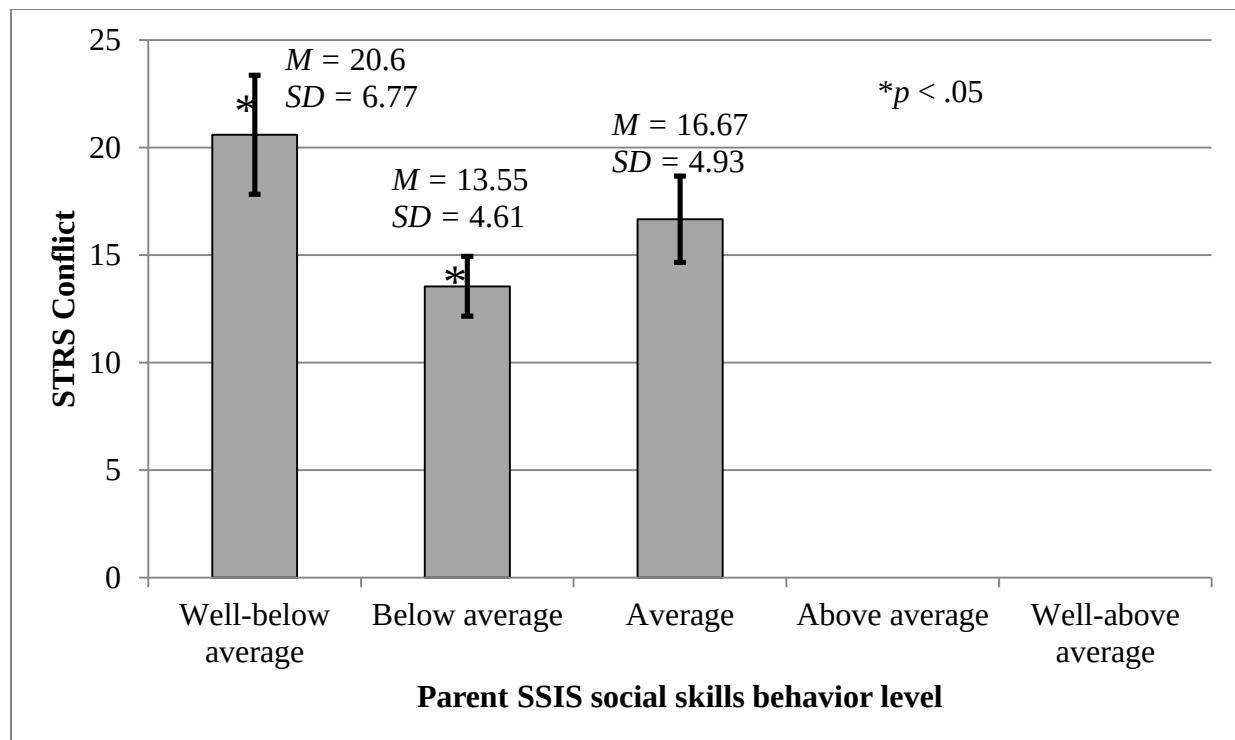


Figure 2. Mean values (with standard error bars) of STRS conflict scores separated by groups based on parent SSIS social skills behavior level. One-way ANOVA analysis for group differences on STRS conflict ($F(2,19) = 3.407, p = .054$). Tukey HSD post-hoc tests revealed significant difference between “well-below” average group and “below-average” group.

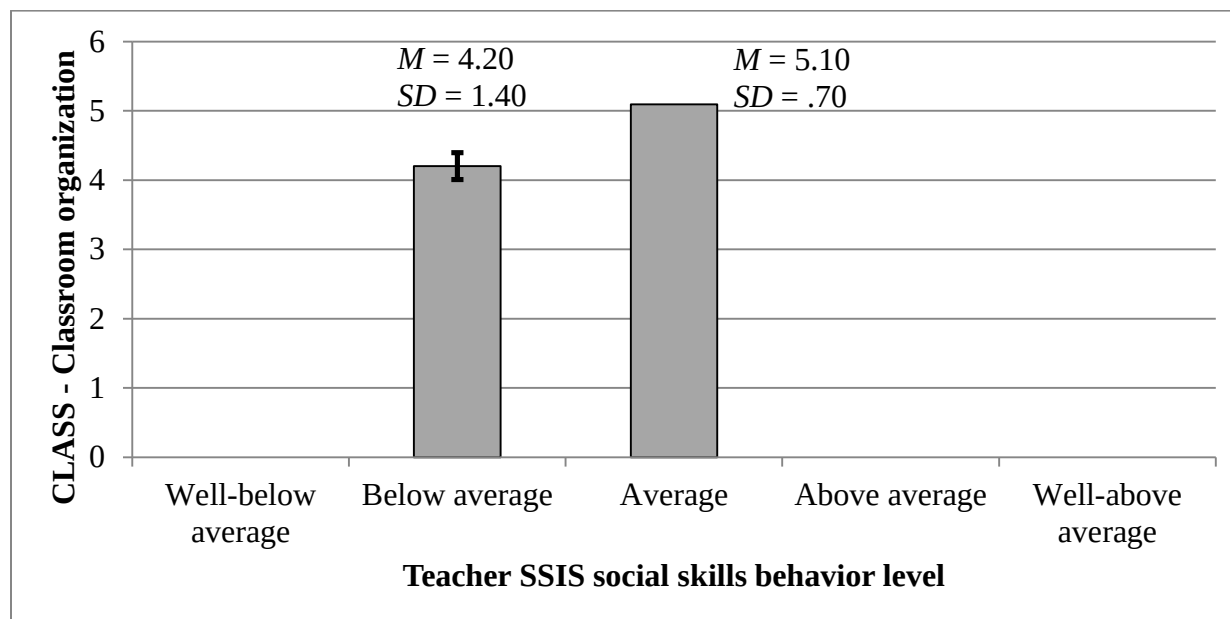


Figure 3. Mean values (with standard error bars) of CLASS classroom organization ratings separated by groups based on teacher SSIS social skills behavior level. Independent samples t-test for group differences on classroom organization domain of the CLASS ($t(20) = 1.975, p = .062$).

CHAPTER 7: APPENDIX

Appendix A. *Playground Observations of Child Social Engagement (POCSE) Coding Scheme and Definitions*

Playground Observations of Child Social Engagement (POCSE) Coding

Adapted from N. Bauminger (2002)

To capture the social behaviors that the children display during playground periods, we will utilize a time-sampling procedure that emphasizes brief observation intervals and quick recording of behavior. In time sampling, children are observed for fixed lengths of time, and the type of behavior that they display during the observation interval is then noted on a coding sheet. Our system will be “quick” in that each observation interval will be brief- 20 seconds.

In sequence, and with the aid of audiotaped set of cues or through the aide of a dual timer, each observer will locate the child, spend the 20 seconds observing the child, and then take 10 seconds to record all pertinent social behaviors that the child displayed during the observation interval. To record the behavior, all that needs to be done is to indicate 1) the type of behavior the Child engages in (Solitary, Initiation, Response, or Interaction) all of which will be explained later; 2) the person the behavior is target too (Peer versus Addult); 3) number and gender of peer; 4) and place a + or – for the peer response to each type of behavior exhibited by the target child among the list of various behaviors listed.

This manual describes how to use the behavior observation data sheets (see attached) and defines the categories that will be marked. It is extremely important that you read this manual several times, in order to obtain a thorough knowledge of the definitions. Remember, you will have to decide almost instantaneously which category of behavior you are observing, so that complete familiarity with the manual is critical. Only if all observers maintain consistent knowledge of the categories will we have any chance of obtaining satisfactory agreement of “reliability”.

One more initial point: This system attempts to gather an all-encompassing view of the child during unstructured playtime. Not only does this system code for the individual behaviors of the target child, it records the response of the peer giving a comprehensive view of the interactive nature of peer social exchanges. This means that you are to record all behaviors of the child as well as the peer response for each observation interval.

Coding Procedures

The coder should be prepared with a timing device set to 20 second followed by 10 second intervals for a total of 20 minutes. Once the target child has been located, observations

should be started. Observations can be started and continued through recess, lunch, as well as transitions (lining up, travel to another location, cleaning up, etc.). Coders should take care to make ALL behaviors exhibited by the target child.

Target Child Behaviors

Behavior Type. Behavior type of the target child can be classified into four different categories. An “S” should be placed in the appropriate box if the child is solitary, *throughout the entire observation period*, and does not interact with any individual. “Ini” should be marked down if the target child’s behavior directed at another person is to initiate a social interaction, however it does not reach the level of an interaction by the end of the 20 second observation interval. An “R” should be placed if the child’s behavior is a response to the other individual and it does not reach the level of an interaction by the end of the 20 second observation interval. When deciding between “Ini” and “R”, the coder should use the initial contact between the target child and the other party as the deciding factor in how to code the period. For example, if the exchange between the target child and the peer is started by the target child, a code of “Ini” should be used. However, if the exchange is started by the peer, then a code of “R” should be given. “Int” should be coded only when 3 turns (ex. target child says something, peer responds, target child responds back) are conclusively seen and strung together. Children do not need to be verbally communicating in order to get an “Int” code. Once an “Int” code is established, it should be continued unless there is clear evidence that the interaction has ended.

Target of Behavior. The person to whom the target child is interacting with should be coded as either “P” for a peer or “A” for adult. If the target child interacts with both a peer and adult during one observation period, a “P” should be coded along with corresponding peer responses to the target child’s behavior.

Number and Gender of Peers. If a “P” is coded for the target of behavior, then the number and gender should be marked. For example, if the target child is interacting with one boy and two girls, the coder should write, “1B 2G” in the corresponding box.

Target Child Behaviors. All target child behaviors during a given observation period should be marked with either a + or a -, depending on the reaction of the peer to the target child’s behavior. If the peer responds in a positive or neutral manner to the target child’s specific behavior (i.e. smiles, laughs, responds, continues interaction), then a “+” should be marked in the corresponding box. If the peer reacts in a negative manner to the target child’s behavior (i.e. walks away, yells, teases, rejects), the a “-“ should be marked in the corresponding box. If there is evidence that the interaction between the target child and peer continues but there is no clear evidence of negativity, a “+” should be marked. The presence of a “-“ does not necessarily mean that the interaction has ended, just that there was an obviously negative response from the peer directed toward the target child. These behaviors may or may not serve to end the interaction. “Rough housing,” or playful teasing should be given a “+” only if the peer does not seem to be

intentionally harming the target child and the target child is not in distress or upset over the peer's action.

Facing Others. A child should be coded as facing others if his face is in the direction of his/her peer. Child does not need to have eye contact or have his/her body facing the other kid.

Affection. This code should be used only if there is clear evidence that the child is expressing affection towards another person through either verbal or physical means. Target child's behavior should clearly be sympathetic and tender in nature, with the intent of the behavior is obviously to show warmth toward another individual. Examples are holding hands, hugging, and saying, "I like you."

Sharing Objects. Sharing objects should be coded when the target child is engaged in an activity with a peer that centers around their joint use of an object or idea. Sharing objects can include games that use toys or objects (i.e. handball, boardgame, computer game), a mutual game or area (i.e. tag, pretend play games), or other activities (i.e. coloring together, reading the same book). The key to the sharing objects code is that the target is obviously an active member in the group and is engaged in the same activity and/or idea as the rest of the group. Child may be engaging in his/her own part (i.e. drawing) but may be coded as sharing objects if what he/she is doing is part of a collective activity with a common goal (i.e. putting drawings together to make a collage). The nature of the sharing objects category is to capture the target child's ability to participate with peers in a mutual activity, conforming to the goals of the group.

Communication. Communication should be coded when any form of verbal (i.e. comments, questions) or nonverbal (i.e. gestures) communication is used by the target child and directed at a peer. This should be coded only if there is clear evidence that the communication is directed at a peer and not an autistic behavior.

Negative Behavior. Negative behavior should be coded when the target child engages in any type of behavior (verbal and nonverbal) that has a negative quality to it. Physical and verbal aggression should be coded here as well as controlling behavior, teasing, or any inappropriate comments. All behaviors that could be considered as off-putting to the general public should be coded, regardless of the response of the peer.

Autistic Behavior. Behaviors associated with the autism spectrum should be coded here. This may include repetitive behavior (i.e. hand flapping), idiosyncratic language or behavior (i.e. made up words or phrases, delayed echolalia), and both verbal and nonverbal imitation.

Active Avoidance. Active avoidance should be coded when the target child's behavior shows a clear motive for avoiding a person or situation. This may include both verbal actions (i.e. "go away," or, "why are you here?") and physical actions (i.e. walking away, turning around

when being talked to). Target child's behavior serves to remove them immediately from a social exchange.

Object of Bullying. If there is any instance of bullying of the target child by his/her peers, it should be coded as a "Y" for the presence and "N" for the absence.

Appendix B. POCSE Coding Sheet

Subject ID: _____

Playground Observations of Child Social Engagement (POCSE) Coding Sheet

Date: _____

Circle One: AM Recess / Lunch / PM Recess

Coder Initials: _____

Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Target Child Behaviors																				
Behavior Type (S, Ini, R, Int)																				
Target of Behavior (P, A)																				
# and Gender of Peers																				
Facing Others																				
Affection																				
Sharing Objects																				
Communication																				
Negative Behavior																				
Autistic Behavior																				
Active Avoidance																				
Object of Bullying (Y/N)																				

+ = Positive/neutral peer response

- = Negative peer response

P = Peer; A = Adult

20 minutes total: Observe 20 seconds; code 10 seconds (total number of intervals 40)

S = Solitary

Ini = Initiation

R = Response

Int = Interaction
(at least 3 turns)

CHAPTER 8: REFERENCES

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