Use of Teacher Rating Scales of Socialization to Discriminate Disability Categories in Preschoolers With Disabilities in Inclusion Placements

by

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Abstract

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This study examined how teacher rated social competence and adaptive social performance in preschoolers with disabilities enrolled in integrated educational classes differs depending on the child's disability. After obtaining informed consent, mainstream classroom teachers completed a social competence (SSRS-T) and a social adaptive behavior rating scale (Vineland-II) for 76 preschoolers with disabilities in integrated classroom settings. Disability type was identified based on archival review. Results were analyzed controlling for age, SES, and ethnicity, to determine how the number and type of disabilities that a child had related to his or her social competence and social adaptation. The results of the analyses conducted revealed that the children with externalizing behavior problems had significantly more difficulty with their social competence and adaptation than children with other types of disabilities. In addition, children with motor problems also had significantly more difficulty with socialization, however these results did not reach the threshold for statistical significance once controlling for demographic variables. Finally, when the social skills and social adaptation scores were compared to one another, they were found to be related indicating

that once the children acquired the social skills they also used them so that the social skills performance deficits were not found exclusive of social skills acquisition problems. This relationship was not however, differentially influenced by the type of disability that a child had so that children with all disability types were identified as utilizing their acquired social skills in accordance with their level of social adaptation regardless of the type of disability exhibited. Implications of these results are discussed and interpreted and recommendations for future study to understand the role of intervention, type of therapeutic services, classroom placement, age of intervention, socioeconomic status and other related factors are made. The practical implications of these results indicate that teacher rating scales of socialization should play an important role in the initial assessment and ongoing evaluation of preschoolers with disabilities. Individual item analysis should be conducted in conjunction with aggregate social assessment in order to provide relevant and specific feedback about the individualized social skills characteristics and needs of each child and how these needs change with intervention. In addition, children with behavioral and motor problems should be given appropriate support to promote effective social performance in their mainstream classroom placement.

Dedication

In honor of my wonderful and loving husband,
Yosef Kaplan
Thank you for your tolerance, patience, and support.

In honor of my beloved and delightful children:
Aaron, Leah, Ashe, Dovi, and Yisroel Mayer
Know you can achieve anything that you set your mind to through hard work and perseverance.

In loving memory of my parents,
Myra and Samuel Aaron Wagshall
Thank you for setting high expectations and your belief in me. I know you watch over us and hope that I will continue to make you proud.

Thank you to my in-laws,
Helen and Louis Kaplan
for all your help and acceptance.

Thank you to my family and friends for your understanding and encouragement.

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Chapter 1

Introduction

Having the ability to initiate and sustain social interactions is a crucial skill throughout childhood (Farrenkopf & Sowell, 1995; Gresham, 1986; Gresham & Elliot, 1985; 1990; Michelson & Manmarino, 1986, Smilansky, 1968). Children who fail to participate socially with peers tend to be isolated, play less, have poor academic outcomes, and acquire fewer skills across multiple domains of functioning than children with an age typical repertoire of social participation (Gresham, 1986; Parten, 1932; Smilansky, 1968), and these deficits tend to be stable over time and are associated with later adjustment problems (Campbell & Ewing, 1990; McConnell & Odom, 1986). Interactions between child peers acting as co-equal social contributors are essential for the development of social and communicative competencies (Doyle, Connolly, & Rivest, 1980; Guralnick, 1986; Smilansky, 1968). Socially competent children learn from their social experiences what behaviors and skills are necessary to sustain successful interchanges and by sustaining social interactions are able to practice and develop these social skills to enhance their repertoire to achieve successful socialization. Children without requisite social skills tend to be isolated socially (Michelson & Manmarino, 1986), have fewer social interactions (Guralnick, 1986), and end up lonely and without friends (Wiener, 2004).

The development of an age appropriate repertoire of play skills is essential for socialization because children prefer to interact socially with familiar peers and familiarity between peers develops through social play (Doyle, Connolly, & Rivest, 1980). A child who does not have the requisite play skills to sustain play interactions or

the social competence to participate in social play will not gain familiarity with peers or have the opportunity to expand a social play repertoire necessary to maintain the acquisition of social play skills at a trajectory consistent with peers, exacerbating socialization deficits.

Socialization abilities are not a trait but are dependent on a person's acquired repertoire of learned social skills and behaviors (McFall, 1982; Michelson & Mannarino, 1986). Social skills are learned behaviors that enable a person to interact effectively with others (Gresham & Elliot, 1984), and social competence involves making judgments and developing specific skills necessary for one's behavior to be subjectively appraised as environmentally acceptable (Gresham, 1986; McFall, 1982). Children who are accepted by or popular with peers typically possess contextually valuable social skills and know how and when to use skills in a socially competent manner (Gresham, 1986). Training children to acquire and use social skills that enhance social participation is a worthy intervention enterprise (Rubin, 2000). The social skills and behaviors that children are trained with should be socially valid (Wolf, 1978) and likely to be generalized and sustained under natural environmental consequences and reinforcement (Stokes & Osnes, 1986).

Socialization can be broken down into component aspects. Gresham (1986) determined that social skills relate to interpersonal behaviors (i.e., accepting authority, play behaviors, etc.), self-related behaviors (i.e., expressing feelings), and task-related behaviors (i.e., paying attention, completing a task) and delineates four types of social problems: *Skills deficits* or lacking the necessary social skills to interact with peers; *Performance deficits* or not being able to use social skills in appropriate contexts; and

Self-control /self-control performance deficits or failing to acquire and use social skills not because the child does not know what to do or when to do it but because an emotional arousal response interferes with the acquisition and willingness to use social skills to participate in social situations.

Children with disabilities exhibit deficits in socialization skills relative to children who are typically developing, and this profoundly impacts on their social interactions with peers and behavior (Faught, Balleweg, Crow, & Van Den Pol, 1983). Typically developing children have higher rates of social play than children with disabilities (Guralnick, Hammond, & Connor, 2003), and while both typically developing preschoolers and preschoolers with delays exhibit similar rates of nonsocial play at the outset of school attendance, children with delays fall behind peers in their socialization year to year due to failure to achieve familiarity and develop social relationships because of their relatively deficient social competence and play repertoires. Overall, children with disabilities verbalize less, interact less with peers and participate in fewer positive social interchanges than children who are typically developing (Beckman & Kohl, 1987) and spend less time in social activities and more time uninvolved in any occupation altogether (Bronson, Hauser-Cram, & Warfield, 1995; Lieber, 1993; Parten, 1932; Smilansky, 1968). When they are occupied socially, their social skills (Beckman & Kohl, 1987) and play repertoires (Stockinger-Forys & McCune-Nicholich, 1984) are less sophisticated than those of peers. In addition, children with disabilities are less preferred playmates by both peers who are typically developing and peers with disabilities (Guralnick & Groom, 1987).

Based on the literature reviewed, children with disabilities are lacking requisite verbal, communication, and play skills needed for familiarity and socialization. The difficulty in acquiring requisite social interaction skills can be somewhat attributable to the difficulties that the children with disabilities have in joining and sustaining social interactions. They also fail to learn from experience what social behaviors are likely to elicit a positive response from peers and seem to have difficulty retaining acquired social skills in different contexts and over time. Children with disabilities when compared to typically developing peers seem to lack the skills repertoire and do not innately learn and acquire necessary social skills or have the play abilities to gain acceptance into peer groups in a way that will promote acquisition of social skills via peer exposure through sustained social interaction (Gresham, 1986).

The type of disability a child exhibits seems to have a differential impact on socialization characteristics. Gresham (1982) indicates that children with disabilities in general have lower rates of social interactions than children who are typically developing and that these interactions often tend to be negative in nature. When a child has more delays, there is also more likely to be issues with socialization (Cole, Mills, & Jenkins, 1991; Gresham, 1982). Children with cognitive delays and impairments tend to exhibit less well developed social entry strategies and play skills impairing social participation (Bronson, Hauser-Cram & Upshur, 1993; Guralnick, Hammond, and Connor, 1993) and respond aggressively or in an unfriendly way to social overtures of others, making them unpopular (Ronning & Nabuzoka, 1993). Children with learning issues actually see themselves as having more friends than they really do because children with learning issues do not seem aware of requisite social behaviors associated with friendship

(Wiener, 2004). Deficits in language and communication make it hard for children with disabilities to participate in social interactions (Lieber, 1993) because linguistic competency with the ability to sustain reciprocity is requisite towards maintenance of sustained social play (Guralnick, 1986). Children who speak in longer utterances also seem to have the ability to expand their play in a way that prolongs social exchanges (Youngblade & Dunn, 1995) and receptive language issues compound the communication deficits that already impair social participation (Lombardino, Stein, Kricos, & Wolf, 1986). Motor impairments reduce children's opportunity to participate in active socialization (Gallahue, 1989), as do internalizing behavioral problems that result in social withdrawal or avoidance responses to social engagement (Gresham, 1986). Children with externalizing behavior problems demonstrate poor social problem solving and disruptive or aggressive behaviors that lead others to avoid socializing with them altogether (Gresham, 1986, Wiener, 2004).

Placement in a least restrictive classroom environment is preferred for all children with disabilities whenever possible (Individuals with Disabilities Education Act (IDEA), 2008). Therefore, there has been a trend towards mainstreaming preschoolers with disabilities and providing placement in inclusionary classroom settings (Baker, Wang, & Wahlberg, 1995). However, placement alone is not adequate to address social deficits (Gresham, 1986). While integrated placement in a classroom with peers who are both typically developing and with disabilities confers benefit over placement in a self-contained setting altogether, this has not been demonstrated to adequately address socialization deficits in children with disabilities, so that multiple socialization

intervention programs have been developed and tried in order to facilitate remediation of deficient social skills acquisition and performance (Gresham, 1982).

Adult completed third party rating scales have been found to be the most effective method of assessing social behavior in preschoolers. This is the case more so than direct behavior ratings, observations, or self-reports (Campbell & James, 2007). Hinshaw, Morrison, Carte and Cornsweet (1987) found that when teacher ratings were compared with parent ratings, teacher ratings were more consistent in their identification of problems in preschool children and their results were more strongly related to other important measures of achievement and adjustment in children of this age. Because of the domain specificity of the relationship between informant ratings and behavior observations, lack of agreement across different types of informants should be expected because teachers and parents see children in different settings and this difference makes it impossible to have identical ratings. Achenbach, McConaughy and Howell (1987) found that behavior and emotional problem reports often correlated highly between similar informants (e.g., two parents, two teachers, etc.), but data collected from different types of informants did not correlate as highly (e.g., correlation between teachers and parents), and they attributed this to the differences in experience that informants have with children in different contexts. Thus, teachers may be seen as uniquely qualified to act as informants to complete rating scales that look at a child's social competency and behavioral functioning in the school setting.

Research has demonstrated how crucial socialization is to development in young children. However, it has also been demonstrated that children with disabilities exhibit different socialization characteristics than typically developing children and that these

characteristics bear differential impact on their social participation, especially within their preschool classroom placements. Understanding how differing disability characteristics impact on a child's social involvement would likely significantly impact the development of appropriate intervention strategies to promote successful social adaptation and integration in children with disabilities enrolled in mainstream classrooms.

This study examined how teacher rated social competence and adaptive social performance in preschoolers with disabilities enrolled in mainstream classes differs depending on the child's disability. After obtaining informed consent, mainstream classroom teachers completed a social skills and a social adaptive behavior rating scale for each participant and disability type was identified based on archival review. Results were analyzed controlling for age, Socio-economic Status (SES), and ethnicity, to determine how the number and type of disabilities that a child had related to his or her social skills and social adaptation. Study participants were identified as having either one or more of the following disabilities: externalizing behavior problems, language/communication problems, internalizing behavior problems, learning disability/cognitive problems, and/or motor problems. The results of the analyses conducted revealed that the children with externalizing behavior problems had significantly more difficulty with their social skills and adaptation than children with other types of disabilities. In addition, children with motor problems also had significantly more difficulty with socialization, however these results did not reach the threshold for statistical significance once controlling for demographic variables. Finally, when the social skills and social adaptation scores were compared to one another, they were found to be related indicating that once the children acquired the social skills they

also used them so that the social skills performance deficits were not found exclusive of social skills acquisition problems. This relationship was not however, differentially influenced by the type of disability that a child had so that children with all disability types were identified as utilizing their acquired social skills in accordance with their level of social adaptation regardless of the type of disability exhibited.

These results reflect that for children with disabilities enrolled in mainstream classrooms, children with externalizing behavior problems are more at risk for social problems compared to children without these problems. While the number of disabilities that a child had was positively correlated with the child's social skills and adaptation, this relationship was influenced by whether or not the children had externalizing behavior problems. Children with externalizing behavior problems tended to have more disabilities than children with other disability types which seemed to have accounted for the tendency for social skills and social adaptation to become weaker as the number of disabilities increased.

It is noteworthy to mention before discussing the details of the results of this study that the actual average social skills and social adaptation scores for all the disability types fell within the average range for expectations within the general population. It may be that children with disabilities who are doing well enough to be placed in a mainstream class also exhibit strong aggregate social functioning, especially relative to children who are in segregated placements. Previous research also examines specific social skills rather than looking at social skills or adaptation in aggregate so that perhaps while there are specific social difficulties that are found in children with disabilities relative to typically developing peers, aggregate socialization may still not be significantly lower than that

which would be expected for children overall. This might reflect that item analysis is in order when working with children with disabilities in mainstream classes to identify where specific social challenges lie and address these within the context of intervention in order to provide social performance supports. Additionally, all the children were already enrolled in mainstream classroom placements and receiving supportive services so that scores may reflect the results of placement or intervention, something that cannot be examined as pre-intervention social performance scores are not available for comparison.

In examining the research results, when looking at the demographic variables that were controlled for, age was a significant factor as it was found that as children got older, their social skills increased, a finding that is consistent with previous research (Parten, 1932; Westby, 2000). In contrast, social adaptation was not affected by age. This difference may have been related to the variation in the scoring characteristics of the two measures or may be reflective of the difference between the two constructs being measured. Social adaptation is a construct that is measured in a context valid manner and is compared relative to same age peers, whereas social skills are expected to be influenced by developmental progression and experience so that children's skills are expected to strengthen as they get older. In addition, social familiarity may play a role in the scores increasing as the child gets older. Because older children have spent more time in school than younger children, they should have more social experience, especially within the same peer group. Being in the same peer group for an extended period of time increases the likelihood that a child will have better social skills as children prefer to play with peers they know. The longer a child is in an educational environment, the more

likely that peers will recognize the child and provide him or her with the opportunities to participate in social play and thereby acquire and hone social skills through experience.

An unanticipated finding of this research was that children who were of lower SES and non-white ethnicity had higher scores than children who were of higher SES or white. It may be that parents of children with disabilities who are of higher SES have better resources to maintain their children in mainstream classes than children who are from a lower SES background. Conversely, it is also possible that the additional resources available within the educational settings for children who are of a lower socioeconomic status increased the likelihood that children with milder disabilities will be identified and referred for services as compared to children who are of a higher SES background and attended private preschools where additional support resources to enhance identification of children with more mild disabilities were not available.

The main outcome that emerged out of the current research indicates that the presence of externalizing behavior problems most strongly influences the development of play and social skills in children with disabilities in mainstream classes. Previous research suggests that children with externalizing behavior problems are often rejected and excluded by peers thereby limiting their social participation and thus their opportunity to learn and practice social skills via experience. It may be that for children with disabilities, those with externalizing behavior problems exhibit a social initiation and response repertoire that is undesirable to peers relative to children with other disability types thus limiting the likelihood that these children will engage in social interactive play and preventing them from honing their social skills through experience, especially compared to children with other types of disabilities. It is also possible that

because the children with externalizing behavior problems in this sample had more complicated disability sets, they lacked compensatory skills to make up for their deficits in social contexts which also limited their opportunities for social experience.

What may be gleaned from this research overall is that social experience seems to play an important role in the development of socialization skills and in social adaptation. Children with disabilities whose functioning is strong enough to allow mainstream classroom placement seem not to exhibit aggregate social deficits relative to normative age expectation but may demonstrate specific social skills difficulties or variations in their social performance in such a way so as to differentially impact social skills and adaptation. These differences are mediated depending on disability type with children with externalizing behavior problems, whom previous research has identified as being more likely to be rejected socially and to exhibit a constellation of social behavior likely to lead to peer rejection and exclusion, less likely to have social experiences necessary to allow them to participate socially and hone social skills through familiarity and practice.

Future research should examine the social skills and adaptation of children with disabilities enrolled in mainstream classes before beginning intervention or, where possible, before placement in a mainstream context to determine the effects of intervention and placement on social performance. Comparison to typically developing peers and peers in segregated placements is also indicated so that a clear picture of social characteristics of children across the developmental skills spectrum is obtained to provide a clear indication of what socialization abilities and skills look like progressively across the continuum.

Chapter 2

Literature Review

This chapter begins with an overview of the research findings that demonstrate the importance of socialization to development in preschool children. This is followed by a discussion of the meaning of the construct of socialization and definitions of different elements of this construct. A comparison between the socialization characteristics of children with disabilities and those who are typically developing follows with an investigation into the impact of specific disability characteristics and socialization. How these characteristics impact on social performance depending on the classroom setting is explored. Finally, an investigation is proposed that looks at disability type and its impact on social competence and adaptive social performance on children with disabilities enrolled in mainstream classrooms.

The importance of socialization to development in preschool children

The ability to engage in extended, appropriate social exchanges with other children is an essential skill for preschool children to acquire. Children who fail to participate socially with peers tend to be isolated, play less, have poor academic outcomes, and acquire fewer skills across multiple domains of functioning than children with an age typical repertoire of social participation (Gresham, 1986; Parten, 1932; Smilansky, 1968). Socialization deficits in early childhood tend to be stable over time and may be predictive of social adjustment problems in later years (Campbell & Ewing, 1990; McConnell & Odom, 1986). Preschoolers who exhibited deficits in their social and behavioral functioning without intervention demonstrated that these deficits remained problematic into elementary school and later childhood (Campbell & Ewing, 1990).

Child-adult interactions used to be viewed as more central to a child's development than peer interactions (Guralnick, 1986, McFall, 1982). However, child-child interactions that rely on peers as co-equal contributors to social interactions have been identified as providing a major contribution to the development of social and communicative competencies in preschool children (Guralnick, 1986). In addition, being able to interact with peers successfully is an important component of functioning that is key to success in day-to-day situations as children get older (Campbell & James, 2007). Longitudinal research has suggested that childhood social abilities have significant implications for long-term adjustment (Michelson & Manmarino, 1986). Children with age appropriate social competence learn specifically from their social experiences how peers are likely to respond to different social skills. They identify behaviors likely to elicit positive responses from other children and engage in them thereby increasing their social participation and the likelihood of successful social interactions (Guralnick, 1986). Children who are socially withdrawn and lack social confidence specifically lack the ability to maintain reciprocal peer interactions, and decreased peer interactions lead to decreased popularity with other children (Michelson & Mannarino, 1986).

Developing age appropriate play skills is important to socialization because children prefer to play with familiar peers and familiarity with peers has been identified as an important contributor to the development of social skills (Doyle, Connolly, & Rivest, 1980). Doyle, Connolly, and Rivest looked at play interactions of children who were acquainted and compared their socialization during those interactions to social play of children who did not previously know each other. The children preferred to socialize with familiar rather than unfamiliar peers. More frequent and intense social free play

interactions occurred when the children knew each other better. Stockinger-Forys and McCune-Nicholich (1984) arranged dyads of unfamiliar children and found that children who were able to overcome unfamiliarity and engage in interactive play with another child had higher rates of socialization and demonstrated better social competency than those children who were unable to play and achieve social interaction with an unfamiliar peer. Familiarity develops through social experience and children become familiar with peers who they can engage with in social play. A child who does not have the social competence to engage other children and participate in social play will not gain familiarity or have the opportunity to acquire skills acquired via social interactions.

Definition of socialization and identification of social deficits

Gresham (1986) discusses social skills and social competence, indicating that these constructs relate to a person's ability to exhibit behaviors that allow competent performance in social situations. Social skills are socially acceptable learned behaviors that enable a person to interact effectively with others and to avoid socially unacceptable responses (Gresham & Elliot, 1984). Social competence is a global judgment about a person's repertoire of social skills based on behavioral performance. Social competence requires the presence of specific skills necessary for a person to be accepted in a given context (McFall, 1982). Socialization abilities are not a personal trait but are dependent on a person's acquired repertoire of learned social skills and behaviors (McFall, 1982; Michelson & Mannarino, 1986). Gresham explains the construct of social competence in the context of social validity, where social competence is considered a criterion-related construct. Social validity refers to behaviors subjectively appraised as being acceptable/valuable or unacceptable in a given context (Wolf, 1978). Social competence

involves making judgments and developing specific skills necessary for one's behavior to be subjectively appraised as environmentally acceptable (Gresham, 1986; McFall, 1982). Children who are accepted by or popular with peers can be considered socially competent and can be assumed to possess and exhibit a repertoire of skills considered context valuable.

Throughout the research literature there is a lack of uniformity in the definition of socialization (Gresham, 1982; Parten, 1932; Rubin, 2000). This may be because the acceptability of social behaviors is criterion related and defined in a contextually subjective manner (Gresham, 1986). For example, observation and categorization of how children play and interact with others tends to be subjective. Despite the expectations that behaviors that are defined as relating to play and socialization are empirically valid and the result of a consensus opinion, these definitions are often just preconceptions about behaviors considered social or playful and are not typically empirically validated (Brown, 1988; Smith, Tahavar, Gore & Vollstedt, 1985). Social behaviors that are contextually valuable should be identified in a situation specific manner, especially when designing socially valid social skills intervention programs to train social skills in a way that will allow skills to be generalized and sustained under natural environmental consequences and reinforcement (Stokes & Osnes, 1986).

In the early years of researching the phenomenon of socialization, Parten (1932) recognized the need for using a uniform definition criterion set and sought to identify empirically valid criterion for social participation. Parten studied and identified categories of social participation that continue to be widely utilized in the study of

socialization in preschoolers (Guralnick, 1986; Guralnick & Groom, 1987; Guralnick, Hammond, & Connor, 2003; Jenkins, Odom, & Speltz, 1989; Rubin, 2000).

Parten (1932) looked at extensity and intensity as two aspects of social contact. Extensity is the number of social contacts that an individual makes as a function of the number of different groups of one or more peers that the child has interacted with. Intensity discriminates whether the child is an active participant in a group. Intensity assesses the extent of group participation by looking at the kinds of groups participated in, the role of the individual in those groups and the individual's leadership status. She combined these constructs to develop categories of social participation. Unoccupied behavior is defined as not playing or occupying oneself with purpose or actively observing others but instead occupation involves walking around, standing, or sitting. Onlooker behavior involves the child actively watching other children at play but not overtly entering into a group. Solitary play refers to play that is centered on a child's own interest with no reference to what proximal peers are doing or a child who played with toys that were different than peers in close proximity. Parallel play refers to play that brings a child along others while using similar materials but without reference to the proximal peers. Associative play is group play where there is overt recognition by the group members of their common activity, interests, and personal associations with cooperative object use but without group members subjugating their interests to efforts of the group. Organized supplementary play is the most complex form of organized group activity in which there is division of labor, group censorship of activities and ideas of member players, specific centralized leadership roles assumed by members, a goal, and

group members supplementing efforts of others. Parten (1932) identified that lack of group social participation is just as significant as its presence.

Rubin (2000) builds on Parten's definitions. He explains that solitary v. social play is based on a child's frame of reference or focus when engaged in play occupation. Solitary play depends on the child's relative attentiveness to others in his or her social milieu. Parallel play involves playing alongside in the company of others but not with companions. Parallel play typically involves children playing with the same play materials but without social reference. Rubin does not discriminate different forms of group play but identifies that children playing with other children with a common goal or purpose in activity should be considered participating in social play.

There are, however, other aspects of socialization to look at than how a child participates with others and engages in interactive play in a social milieu. Others have looked at not only the manner in which children participate socially but they also have identified component aspects of the task of socialization. Socialization problems can be attributable to specific deficits that affect the execution of social participation. Depending on the type of deficit a child exhibits, the approach to addressing their socialization problems differs.

Gresham (1986), in a review of the literature on socialization, found that conceptualizations of social skills and social competence vary. Overall, social skills are defined in a way where they relate to either interpersonal behaviors (e.g., accepting authority, play behaviors, etc.), self-related behaviors (e.g., expressing feelings), and task-related behaviors (e.g., paying attention, completing a task). Gresham (1986) delineates four types of social problems that reflect deficient social skills and therefore

deficient social competence and adaptive performance. Skills deficits relate to a child lacking the necessary social skills to interact with peers and can be remediated via instruction, modeling, rehearsal, and coaching. Performance deficits relate to a child who has the social skills within his or her repertoire but does not use these skills in appropriate contexts. Self-control deficits relate to a child who has not acquired specific social skills because an emotional arousal response has interfered with this acquisition and self-control performance deficits refer to a child who has the skills but does not use them due to emotional arousal responses. Emotional arousal responses that can interfere with a child's acquisition and performance of context valid social skills can either relate to behavioral inhibition (e.g., anxiety) or excess (e.g., impulsivity). Social skills performance deficits are often seen in children with both externalizing and internalizing behavioral disturbance. Michelson and Mannarino (1986) indicate that social problems can be distinguished as either being related to withdrawal or aggression and acting out, both of which result in poor outcomes.

Young children participate in play within a social milieu with varying degrees of involvement with others (Parten, 1932). The degree to which a child is considered to be participating socially and interacting with peers is relevant based on the child's social reference and relative attentiveness to others (Rubin, 2000). Socialization problems should be identified in a socially valid manner as judgments of social competence vary and are subjectively identified based on context (Gresham, 1986). Social competence and the degree to which the child participates and thereby achieves successful socialization depend on the ability to acquire and use socially valuable skills in a context relevant manner. In addition, the presence of emotional arousal responses that interfere with

demonstration and use of social skills are identified as behavior problems and are discriminated through situation specific subjective value judgments.

Comparing socialization of preschoolers with disabilities and preschoolers who are typically developing

The ability to participate adaptively in social contexts has been established as important in facilitating a child's adjustment in preschool and overall development. However, children with disabilities exhibit deficits in socialization skills relative to children who are typically developing, and this profoundly impacts on their social interactions with peers and behavior (Faught, Balleweg, Crow, & Van Den Pol, 1983). The research indicates that children with disabilities should be compared to children who are typically developing in order to gain a normative reference group to understand the nature of the social delays of the children with disabilities relative to age typical expectations (Guralnick, 1986). In addition to providing a more accurate perspective of the children's delays, this should facilitate implementation of more appropriate intervention approaches.

Overall, children with disabilities interact less with peers and participate in fewer positive social interchanges than children who are typically developing (Beckman & Kohl, 1987). They spend less time in social activities and more time uninvolved in any occupation altogether (Bronson, Hauser-Cram, & Warfield, 1995; Lieber, 1993; Parten, 1932; Smilansky, 1968). When they are occupied socially, their social skills repertoire (Beckman & Kohl, 1987) is less sophisticated than that of peers, and they incorporate fewer imaginary play themes (Lieber, 1993), verbalize less while socializing (Bronson, Hauser-Cram, & Warfield, 1995; Lieber, 1993), and exhibit inability to play within a play

script (Nelson & Seidman, 1984) the consequence of which is a shorter social play interchange (Stockinger-Forys & McCune-Nicholich, 1984) and reduced peer familiarity (Doyle et al., 1980).

Nonsocial play is identified as such when a child plays alone even though he or she is in the presence of available peers (Guralnick, Hammond, & Connor, 2003; Parten, 1932; Rubin, 1982). Nonsocial play is of concern because children who exhibit high levels of nonsocial play during free play periods in preschool settings are reported as being at risk for later problems (Rubin, 1982; Smilansky, 1968; Wiener, 2004). Guralnick, Hammond, and Connor (2003) tried to determine if distinct nonsocial play types were apparent for children with and without developmental delays. They compared playgroup play of three-year old boys with and without developmental delay (N = 72). For the study, Guralnick, et al. set up 12 separate playgroups consisting of six children in each group. Six of the groups were integrated so that they each consisted of four typically developing children and two children with disabilities. The other half of the groups were segregated so that three contained only children with developmental delays and three contained only typically developing children.

Guralnick, et al. (2003) found that children who were typically developing had higher rates of social play than children with disabilities. However, a percentage of children who were typically developing engaged in a preponderance of nonsocial play. When these typically developing children engaged in non-social play, they tended to use a solitary passive style play where they played alone but engaged constructively, similar to children with mild developmental delays who exhibited a preponderance of nonsocial play. The children who engaged in more solitary–reticent play where they watched peers

without joining, while remaining unengaged with play materials, were found to be more socially rejected and to have more difficulty with social bids than children with disabilities or those who were typically developing who engaged purposefully in nonsocial play. Solitary active play was the third subtype looked at and involved engagement in functional or dramatic play alone despite having access to peers. Children who engaged in more solitary-active play than solitary passive play were found to have more maladaptive behaviors, particularly externalizing behavior problems and impulsivity, and also demonstrated an inability to make successful social bids where they were rejected by peers more than children with other types of social play when they tried to join other social groups. Guralnick et al. found that the children who engaged in solitary reticent and solitary active play had the greatest number of unsuccessful attempts at entering socialization and higher teacher ratings of behavior problems. This was the case for both typically developing preschoolers and children with disabilities, though the children with disabilities had higher rates of difficulties.

Guralnick et al.'s study (2003) demonstrated that children with deficits in their ability to join and be accepted into peer groups were more likely to play alone or not play at all and also demonstrated higher teacher ratings of disruptive behavior. Children who exhibited a preponderance of non-social occupation or non-occupation during play situations where they had access to peers, demonstrated deficits in their ability to successfully join peers and maintain social interactions. The children who remained unengaged or engaged in imaginative play alone during periods where they had access to peers tended to be rejected more often than children who were typically developing or with disabilities who engaged in reticent non-social play.

Preschoolers with disabilities have consistently been identified within the research literature as having difficulty with purposeful play engagement (Bretherton, 1984; Federlein, Lessen-Firestone, & Elliot, 1982; Guralnick, 1986; Lieber, 1993; Smilansky, 1968). Guralnick et al. found that difficulty engaging and playing appropriately in a social context is a concern in relation to nonsocial play more so than the presence of a disability.

In order to socialize successfully, there are a host of skills that children need to acquire (Guralnick, 1986) such as being able to share meaning with a peer while engaged in a conversation (Garvey & Kramer, 1989) or while at play (Giffin, 1984), being able to sustain a play interaction with relevant contributions (Dunn & Dale, 1984), or being able to learn from experience what social behaviors are likely to elicit a positive response from peers and yield a successful social entry and interaction (Doyle, Connolly & Rivest, 1980). Children with disabilities, however, do not seem to develop a repertoire of skills consistent with successful social interactions as completely as do typically developing children. Because they lack many requisite social skills necessary to successfully enter social interactions and maintain them (Lieber, 1993), they fail to acquire familiarity with peers that results in the playing and social experiences that promote the acquisition of social competency (Doyle et al., 1980). Both children who are typically developing and children with delays demonstrate a preponderance of solitary, nonsocial play at the outset of a school year before class peers become well acquainted. However, children with delays do not transition to engagement in social forms of play at a rate comparable to typical peers over the course of the school year when children come to know each other better (Parten, 1932).

In particular, children with disabilities have been identified as often producing inappropriate responses to social initiations of peers that lead them to be less preferred play partners for other children (Celiberti & Harris, 1993; Gresham, 1986; Guralnick & Groom, 1987; Kohler & Fowler, 1985; Ronning & Nabozaka, 1993; Stockinger-Forys & McCune-Nicholich, 1984). When Stockinger-Forys and McCune-Nicholich placed dyads of previously unacquainted children into free-play situations, the children who responded inappropriately to the social initiations of their peers failed to achieve social play, while the children who were able to respond appropriately achieved reciprocity in their interchanges and engaged in sociodramatic play. When trained to respond nonaggressively to social initiations of peers, children with cognitive delays were able to achieve social reciprocity and sustain play interchanges with peers during free play where they had previously been unable to join the other children successfully (Ronning & Nabozaka, 1993). Celiberti and Harris (1993) found that when non-disabled siblings attempted to engage their autistic siblings, the autistic children reacted in an unfriendly way that decreased the likelihood that the typically developing siblings would engage them again in the future. Lack of reciprocity decreases socialization because when children fail to respond appropriately to the social initiations of others, they are less likely to be engaged or included again in the future.

Measurable differences in the social competence and social desirability of children with disabilities as playmates have been demonstrated where these differences cannot be attributed to unresponsive peers, to inadequate matching to typically developing peers, to preexisting group interaction patterns, or to situational factors (Guralnick & Groom, 1987). Guralnick and Groom established eight, month-long

analogue playgroups each consisting of six developmentally typical three and four year olds and two four-year olds with developmental delays (matched developmentally to the typical three-year olds) who had not yet started school and were previously unacquainted. Overall, older, typically developing children demonstrated more competent social interactions than younger, typically developing children or children with delays. The older, typically developing children exhibited more interactive play and used significantly more social strategies resulting in more successful socialization. The typically developing three-year olds had significantly more successful social entry bids than the children with delays who were matched to them developmentally. The children with disabilities exhibited significantly more solitary play and less observable interest in and interaction with any peers than either group. Most significantly, the children with disabilities demonstrated less effective social bids over time, particularly poor social entry strategies. Both the three- and four- year olds preferred to interact with children who were the same age as they were and the children with disabilities were the least preferred children for all groups based on observation of time spent in play, rate at which they served as role models for peers and sociometric ratings. These results suggest that children with disabilities are perceived as less competent and less desirable play partners than typically developing peers.

Expectations can alter how children who are typically developing interact with children with disabilities (Miller & Clark, 1991). While deficits in social skills can partially account for the paucity of the social relationships between children with disabilities and typically developing peers (Gresham, 1982), the expectations that typically developing children have for peers with delays influences the degree to which

children with delays integrate socially. Miller and Clark found that children with disabilities ages eight through 11 were perceived as undesirable by typically developing peers who were told that they would be verbally interacting with children with disabilities and that these negative perceptions could be somewhat attributable to peer expectations before the interactions, though they were somewhat bolstered by true interaction and communication difficulties. Miller and Clark found that children who were typically developing described children identified as having special needs (cognitively impaired and learning disabled) in a more socially negative manner than children who were identified as being typically developing prior to verbal interactions with each ($N = 40$, $F = 11.07$, $p<.01$). Children were told that they would have one conversation each with a child with disabilities and with a child who was typically developing. When the respondents thought the child they would be speaking to was not typically developing, most reported that they expected him or her to behave in a stigmatizing manner during the conversation. The perceivers then reported that the peers they believed were not typically developing had behaved in a stigmatizing manner in accordance with their expectations, while the children the perceivers believed were developing typically were not reported as exhibiting negative behaviors. The perceivers maintained their stereotyped beliefs when they believed the child who they were interacting with was not typically developing, and this affected the way that they reacted to the social behavior of the other child. This suggests that children who are typically developing might harbor negative or stigmatizing expectations of peers who are not typically developing leading to decreased quality of their social interactions and poor responses to such peers that lead to those peers being socially isolated.

Bronson, Hauser-Cram, and Warfield (1995) found that children with disabilities differed from typically developing children in relation to social initiation bids and occupation during free play in mainstream preschool classes. They observed two- and three- year old children with disabilities (N = 82; n = 49 with Down Syndrome and n = 33 with mild to moderate mental retardation) and children who were typically developing (n = 88) in their mainstream preschool classes towards the beginning of the school year to determine how the children with disabilities and the children who were typically developing differed in rate of peer initiations, success of their social initiations, use of effective, appropriate strategies to maintain social interactions, and how often other children initiated social interactions with the target child. Results indicate that children with disabilities a) spent less time in social activities than typically developing two and three year olds, and b) spent significantly more time uninvolved in any activities altogether. Children with disabilities were found to initiate peer interactions nonverbally at a rate similar to three-year olds who were typically developing, but initiated interactions verbally less than did typically developing two- and three- year olds. The rate of success of social initiations and use of effective social strategies in the children with disabilities were comparable to those of the typically developing two year olds but significantly less successful than the three-year olds (Bronson et al., 1995).

Beckman and Kohl (1987) identified differences in social repertoires and acquisition of social skills over time and found that these differences impacted on the rate of positive peer interactions. They compared children with varying disabilities (mild to moderate mental retardation and severe language impairments) and typically developing peers in integrated and in segregated placements (N = 11: n = 5 with handicaps and n = 6

without handicaps). They found that typically developing children exhibited significantly more positive interactions than children with disabilities and progressed in their development of social repertoire at a more rapid rate acquiring more sophisticated play and social skills over a year than did children with disabilities over the same period of time. Further, the skills of the typically developing children improved over time to a greater degree than did the skills of the children with disabilities. Thus, the children with disabilities not only exhibited initial differences in social repertoire, but they also acquired fewer skills over time and the skills they acquired were gained more slowly than the skills acquired by typically developing peers. The difference in social skills between the two groups increased over time with a greater disparity in the rate of positive social interactions and the sophistication of the social skills repertoire between the two groups over time.

In addition to deficits in the ability to acquire social skills, children with disabilities have demonstrated difficulty relative to typically developing peers in their ability to sustain skills acquired over time and in their generalization of acquired skills to contexts other than those in which they were learned. Guralnick and Weinhouse (1984) observed children with varying developmental delays (N = 111) during school-based free play periods at the beginning and at the end of the school year. While the children with developmental delays exhibited some developmental changes similar to those found in typically developing children (increased associative play with decreased unoccupied play, increased vocal and verbal interactions supplanting motor and gestural forms of social communication, and increased reciprocity and positive experiences related to social interactions), they still exhibited solitary and parallel play as their primary forms of social

participation and were unable to turn simple two unit response/exchange social interactions into extended, longer, more elaborate exchanges. In addition, peer related social development did not occur with advancing age as children who were three exhibited the same skills as children who were five at the outset of the school year. This indicates that not only did the children lag behind typically developing peers at the outset of each school year, but they also increasingly lagged in their repertoire of social skills over time. This suggests that for children with disabilities, skills acquired over a previous school year were not necessarily maintained and tended to be highly context dependent, with limited generalization to social contexts outside the specific classroom environment where they had been initially acquired.

As they develop, children increasingly rely on verbalization to initiate and sustain social interactions (Garvey & Kramer, 1989; Guralnick, 1986). Requisite language skills for initiating and sustaining socialization verbally include communicating clearly with a listener, attending to a listener and making sure the listener is attending to you, and maintaining a conversational topic appropriately. In addition to having a limited speech repertoire children with language delays do not acquire communication skills, particularly learning rules that relate to pragmatics, following a developmentally typical progression and may therefore lack the requisite communicative repertoire to socialize (Garvey & Kramer, 1989; Goldstein & Strain, 1988). Garvey and Kramer found that language used when children engage in social pretend play is different than that used in non-pretend activity. In order to accomplish socially successful verbal interchanges, children must be able to use more complex language with more complex grammatical elements and verb conjugations. They must also render accurate judgments about the

characteristics of the listener to enable them to engage the listener and to be understandable (Garvey & Kramer, 1989; Goldstein & Strain, 1988). Typically developing children use increasingly complex language features to initiate, organize, and pragmatically conduct interpersonal communications (Garvey & Kramer, 1989; Kuczaj, 1985) and when pretending socially (Garvey & Kramer). If the one who is communicating is unable to achieve shared meaning with a listener, this impairs the children's ability to interact (Garvey & Kramer, 1989; Goldstein & Strain, 1988). Children who are typically developing tend to be more effective at making themselves understood by peers and adjusting their communications to fit a listener and context rendering their social communications more effective (Goldstein & Strain, 1988; Guralnick, 1986). Children who cannot achieve shared meaning with peers end up having difficulty achieving social interchanges (Giffin, 1984; Guralnick, 1986).

Being able to use imagination while at play is also critical to the development of social skills (Connolly & Doyle, 1984; Nelson & Seidman, 1984; 0Smilansky, 1968). Social pretend play is play that involves the use of non-stimulus bound imaginative schema in the context of a group of one or more peers (Nelson & Seidman, 1984; Smilansky, 1968). Social pretend play is considered more sophisticated than social play, and children who are able to sustain social pretend play participate in social interactions for longer durations than do children who do not pretend while engaged in social play (Stockinger – Forys & McCune-Nicholich, 1984). Participation in social interactions for longer periods of time results in increased development and sophistication in a child's social skills (Smilansky, 1968).

Ability to apply learned social strategies, skills, and pragmatic social language also differs in children with disabilities to an extent that has an impact on their social initiations and sustained interactions. Lieber (1993) looked at children with disabilities (n = 15) and children who were typically developing (n = 15) who were in segregated classes for half the day and in integrated classes for half the day and compared the children's abilities to use appropriate strategies in social play situations. Lieber looked at the efficacy of the children's social entry (ability to non-disruptively enter play in a way that resulted in successfully joining social play with positive peer response), efficacy of the children's play initiations in a way that resulted in a social play episode, and ability to maintain the social play over a period of time. Results of the study indicate that children with disabilities exhibited significantly lower rates of effective social entry and tended to enter social play situations in a significantly more disruptive manner than did typically developing peers. Children with disabilities also failed to initiate social play more than typically developing peers and received higher rates of negative responses or no responses to their social initiations. Both groups of children initiated play engagement in a manner that produced social interaction at an equal rate, but the children with disabilities lacked the requisite skills to maintain the interactions as they had less elaborate and imaginative play schema and did not have verbal skills to maintain play at a rate comparable to the typically developing children.

Based on the literature reviewed, children with disabilities are lacking requisite verbal, communication, and play skills needed for familiarity and socialization. The difficulty in acquiring requisite social interaction skills can be somewhat attributable to the difficulties that the children with disabilities have in joining and sustaining social

interactions. They also fail to learn from experience what social behaviors are likely to elicit a positive response from peers and seem to have difficulty retaining acquired social skills in different contexts and over time. Children with disabilities when compared to typically developing peers seem to lack the skills repertoire and do not innately learn and acquire necessary social skills or have the play abilities to gain acceptance into peer groups in a way that will promote acquisition of social skills via peer exposure through sustained social interaction.

Differential impact of a child's disability on his or her socialization and behavior

In a review of the literature on socialization, Gresham (1982) reports that children who are learning disabled, cognitively impaired, with behavior problems and who are emotionally disturbed have lower rates of social interactions with typically developing children and that these interactions are comparably negative in nature. Specifically, children with behavioral disturbance have lower social status, interact less with peers, and have poor quality social interactions with other children. In relation to children with developmental delay, the magnitude of a child's delay was seen as corresponding to the degree to which typically developing children interacted with him or her. The greater the severity of a child's delay, the more difficult the child is to interact with and the less peers choose to interact with him or her (Gresham, 1982).

Intellectual functioning and socialization. The strength of a child's intellectual functioning has been demonstrated as having an impact on his or her socialization (Bronson, Hauser-Cram & Upshur, 1993; Guralnick, Hammond, & Connor, 1993; Sparrow, Cicchetti, & Balla, 2006). In general, children with all forms of mental

retardation typically demonstrate impaired adaptive socialization relative to typically developing peers (Sparrow, Cicchetti, & Balla, 2006).

Overall, a child's initial developmental level impacts on skills acquisition in children with disabilities. Cole, Mills, Dale, and Jenkins (1991) compared children in integrated and segregated classes ($N = 124$) to determine differential effectiveness of classroom integration based on student aptitude. They found that children with higher intellectual and language functioning make more gains in integrated classrooms while lower functioning students gain more in segregated classes. Thus, the degree of impairment that a child with disabilities exhibits in relation to his intellectual functioning and language capacity has a direct impact on how well that child will acquire skills and adapt in a classroom relative to the degree of integration with typically developing peers.

Bronson, Hauser-Cram & Upshur (1993) looked at the extent to which cognitive performance and type of disability influenced a child's social behavior in the classroom setting. Two and three year olds with typical cognitive development ($n = 88$) were compared to two and three year olds with cognitive impairments ($n = 82$). The cognitively typically developing children spent more time engaged in social interactions with peers ($p<.001$) and their social time was spent in higher levels of interaction with more sophisticated interactive play engagement (associative play: $p<.001$ for two year olds and $p<.01$ for three year olds). When the functioning of the children with disabilities was compared to one another, the cognitively more advanced children with disabilities engaged ($p<.001$) and were engaged by ($p<.001$) peers more often, and more successfully sustained social interactions than did peers with disabilities with lower cognitive functioning.

Bronson, Hauser-Cram & Upshur (1993) also sought to determine if children with Down Syndrome differed in their socialization characteristics relative to children with other forms of cognitive impairment. When the children with cognitive impairments were compared to each other (n = 49 with Down Syndrome and n = 33 with mild to moderate mental retardation) they found that children with Down syndrome were more successful at initiating social interactions ($p<.05$). Children with cognitive impairments demonstrate weaker adaptive functioning relative to children who are typically developing in all adaptive functioning domains of the Vineland-II Adaptive Behavior Scales (Sparrow, Cicchetti, & Balla, 2006). However, children with nonspecific mental retardation demonstrate stronger communication, self-help, socialization, and motor functioning while children with Down Syndrome are rated by teachers as exhibiting stronger socialization (Sparrow, et al. 2006). This may be because Down syndrome presents with a more consistent symptom phenotype and etiology than other forms of nonspecific mental retardation, thus there may be less variety in how functioning is impaired in children with Down Syndrome when the two types of mental retardation are compared as groups (Sparrow, et al. 2006).

Guralnick, Hammond, and Connor (1993) also found differential effects on social entry and interaction strategies for children according to their cognitive level. Children with mild cognitive delays exhibited more nonsocial reticent play (unoccupied play without socializing $p = <.001$) and nonsocial active play (engagement with toys but high rates of peer rejection and difficulty sustaining social play, $p = <.01$) than typically developing peers of similar chronological age.

Ronning and Nabozaka (1993) found that children with mental retardation tended to respond aggressively to social initiations of peers. They found that children who were mentally retarded were engaged less than typically developing peers and were perceived by typically developing classmates as unfriendly. When the children with mental retardation were trained to react in a prosocial manner to peer social initiations, and when they were trained to sustain play with the games that their typically developing peers engaged in, then the children with cognitive impairments increased their rate and duration of social interchanges and overall social participation.

Learning disabilities and socialization. In a meta-analysis that looked at socialization of children with learning disabilities, Wiener (2004) found that children with learning issues tend to have lower social status than children without learning deficits and are therefore disliked, rejected, or neglected by peers at a higher rate than children who are typically developing. The children with learning issues often start out at the beginning of their school experience with peer sociometric ratings that are similar to those of children with typical learning attributes. However, as the school year progresses, social status diminishes and the low status is maintained over the long term as the children with learning issues are perceived negatively by peers, have more difficulty with relationship repair and resolving conflicts with other children, and tend to have limited understanding of requisite attributes to forming and maintaining friendships such as reciprocity. However, children with learning disabilities are not typically aware of their difficulties as they equate acquaintanceship with being friendly and seem unaware of the importance of reciprocity. When corroborating social nominations are used to measure social relationships, children with learning issues identify themselves as having more

friends than they actually do as peers who they identify as being friendly with often do not report being friendly with them.

Communication delays and socialization. As children with disabilities are increasingly placed into inclusive educational settings with typically developing peers, deficient communication is of concern because interpersonal communication skills are essential for socialization (Goldstein & Strain, 1988). Children with delays that affect their language functioning appear disadvantaged when trying to maintain social play with same age peers (Lieber, 1993). An effective pragmatic repertoire for the purpose of social communication is essential in order to sustain successful socialization (Garvey & Kramer, 1989).

Children with more sophisticated language tended to maintain interactive social play for longer intervals than did children with delays with communication deficits (Lieber, 1993). Linguistic competency with the ability to sustain reciprocity is requisite towards maintenance of sustained social play (Guralnick, 1986). Mean length of utterance contributes to a child's ability to engage in social perspective taking, exhibit empathy towards a play partner, and expand on play themes and role enactment while at play so that children who speak in longer utterances also seem to have the ability to expand their play in a way that prolongs social exchanges (Youngblade & Dunn, 1995). Children with receptive language delays in addition to expressive delays exhibit even more deficits in their repertoire of language and play skills likely to enhance social play participation (Lombardino, Stein, Kricos, & Wolf, 1986).

When children with disabilities are directly trained to use language likely to improve social interaction, they have increased their rate of participation in sociodramatic

play (Goldstein & Strain, 1988; Smilansky, 1968), their ability to play within a script (Goldstein & Strain 1988; Nelson & Seidman, 1984), and their ability to use language and appropriately maintain a topic relevant to a context in order to sustain social interaction (Goldstein & Strain, 1988). In the absence of direct training to increase social communication, children with disabilities demonstrate significantly less social interaction with both typically developing peers and peers with disabilities trained to improve their context relevance, topic maintenance, vocabulary and pragmatic language use in social play contexts (Garvey & Kramer, 1989).

Autistic Spectrum Disorders and socialization. Children with Autistic Spectrum Disorders characteristically demonstrate deficits in their ability to use nonsocial behaviors to regulate their social interactions, play, exhibit social reciprocity, and to develop peer relationships appropriate to their developmental level (DSM IV TR, 2000). In particular, teacher ratings of adaptive behavior for children with autism typically demonstrate significantly deficient socialization functioning relative to the children's functioning in other adaptive domains such as communication, daily living skills, and motor skills (Sparrow, Cicchetti, & Balla, 2006).

El-Ghourory and Romancyk (1990) found that interactions between children who were typically developing and their siblings with autism were limited by the children with autism's limitations in sustaining reciprocal interchanges. Belchik and Harris (1994) found that children with autism generally exhibit inappropriate responses to social initiations of others that result in decreased social participation due to other children decreasing their social initiations once they are rebuffed. Celiberti and Harris (1993) studied three sibling dyads from intact families where the older sibling was typically

developing and the younger sibling had been diagnosed with autistic disorder. They found that non-disabled siblings attempts to initiate interactions with siblings with autism decreased when the sibling with autism reacted aggressively, in a manner that was not prosocial or was non-responsive. When direct training is conducted to initiate and sustain reciprocity during interactions and to respond appropriately to interactions of others with children with autism, the children with autism have been seen to improve their social interactions with typically developing classroom peers, siblings, and unfamiliar peers in other settings (Belchik & Harris, 1994; Celiberti & Harris, 1993).

Visual impairment and socialization. To become socially adept, children must learn via environmental experience to discriminate behaviors considered desirable or undesirable. Children with visual impairments cannot make the requisite observations to judge by the responses of others whether behavior that they exhibit is appropriate to their social context (Farrenkopf, Howze, & Sowell, 1995). The absence of visual stimulation decreases the incidence of environmental exploration and experiences likely to lead to spontaneous interactions with others or socialization (Fazzi, Kirk, Pearce, Pogrund, & Wolf, 1992) in the absence of verbal mediation to prompt understanding of the surroundings and reciprocity with peers (Retting, 1994). Retting found that young children with visual impairments engaged primarily in solitary play when they were in social contexts with the proportion of time engaged in solitary play increasing in proportion to the magnitude of the child's visual impairment. In addition, peers without visual impairments view the environmental exploratory behaviors and mannerisms of children with visual impairments as odd and stereotypical leading to rejection by peers and decreased opportunity for social participation. Consequentially, children with visual

impairments lack the opportunity to observe the subtle peer responses and social cues of other children that would lead the children with visual impairments to recognize which behaviors their peers consider socially desirable and which behaviors they consider stigmatizing. This makes it difficult for them to learn and apply a repertoire of behavior likely to lead to successful socialization.

Motor Impairments. Children with motor coordination problems are known to have social, emotional, and academic deficits as well as low self-esteem because of their difficulty sustaining participation in social play activities that require motor coordination such as running and playing ball (Missiuna, Gaines, & Soucie, 2006). Gallahue (1989) found that children with poor gross motor coordination participated in motor play less than children with typically developing motor skills because the children with poor motor skills were not as able to execute necessary motor tasks and keep up with peers during active play. This was purported to lead to social rejection as children with poor motor skills are chosen less often than peers for participation in active play. The lack of participation by the children with the motor impairments led to less opportunity to learn and practice motor skills and lack of opportunity to learn social skills acquired via participation in active group play. Children with motor and social deficits also often have poor self-concepts.

Cummins, Piek, and Dyck (2005) looked at 78 children between the ages of 6 years, 8 months and 12 years, 11 months, 39 who were typically developing and 39 with motor difficulties and compared them according to their abilities to make appropriate social judgments based on the verbal and physical cues of another person. Children with motor impairments were found to have significant difficulty picking up on social cues of other

people and making appropriate social judgments. Kristenson and Torgersen (2008) found that 11 and 12 year old children diagnosed with social anxiety disorder (n = 29) had higher rates of motor problems than children with other diagnosed psychiatric disorders (ADHD, n = 29 and other disorders n = 44) or no disorders at all, (n = 48).

While the research on the influence of motor problems focuses on children in elementary school, it can be expected that preschool children with motor deficits experience similar peer rejection and limitations in their acquisition and development of social skills as a result of their lack of participation or opportunity for participation in active social motor play.

Internalizing and externalizing behavioral problems. According to Achenbach and Rescorla (2000), emotional and behavioral problems in preschool children can be categorized according to whether these have internalizing or externalizing manifestations. Affective behaviors such as anxious depressed, somatization and social withdrawal issues relate to internalizing problems while disruptive behavior such as aggressive, inattentive, and oppositional defiant problems qualify as externalizing problems as demonstrated via factor analytic study. Both internalizing and externalizing types of behavioral problems have a significant negative impact on the social participation of preschool children (Achenbach and Rescorla, 2000).

In a discussion of the conceptual issues in social competence assessment, Gresham (1986) delineates social skill problems into four types: Skill deficits, performance deficits, self-control skill deficits and self-control performance deficits. These definitions relate not only to whether a child knows how to perform the social skills in question, but whether emotional arousal responses exist that impair the child's ability to use social

skills. While children with skill deficits lack knowledge of how to interact appropriately with peers, children with performance deficits possess requisite skills for socialization but do not perform them at necessary levels for social competence. Social performance deficits can be associated with internalizing behavioral problems such as withdrawal because when children withdraw from social participation their opportunities to exhibit social skills are limited.

Children with self-control skill deficits exhibit emotional arousal responses that prevent them from acquiring social skills (Gresham, 1986). For example, children with anxiety (an internalizing problem according to Achenbach and Rescorla, 2000) may not participate socially because of an arousal response to social situations resulting in avoidance of social interactions that prevent the child from acquiring a social skills repertoire. Conversely, children with externalizing problems may exhibit impulsive behaviors or behaviors that are socially undesirable that result in rejection and avoidance by peers. Because the child with externalizing behavior problems is excluded from socialization with children who do not exhibit behavioral problems, their opportunity to acquire an appropriate social skills repertoire is limited. Thus, self-control skills deficits associated with externalizing problems inhibit the acquisition of appropriate social skills. However, some children do know how to perform the behaviors necessary to participate socially but because of inhibition, anxiety, or fear (internalizing problems) or anger, impulsivity, or aggression (externalizing problems), they do not have the opportunity to demonstrate their social skills because their behavioral problems impede their ability to participate socially (Gresham, 1986). Social skills performance deficits are often seen in children with both externalizing and internalizing behavioral disturbance. Michelson and

Mannarino (1986) indicate that social problems can be distinguished as either being related to withdrawal or aggression and acting out, both of which result in poor outcomes.

Children who are socially rejected tend to have a higher preponderance of internalizing behavioral issues and exhibit higher rates of loneliness and victimization by peers as they get older (Wiener, 2004). In particular, peers of socially unpopular children with learning issues often describe the children with learning issues as “shy” and “withdrawn,” behaviors associated with internalizing problems. These children described as “shy” and withdrawn” are more often picked on or bullied than children with externalizing problems or children without behavior problems at all. The “shy” or “withdrawn” children are also more likely to be neglected by peers and both types of peer interaction difficulties tend to exacerbate internalizing behavioral symptoms resulting in a feedback loop that maintains the social withdrawal, peer rejection, and neglect but also results in the emergence and exacerbation of internalizing emotional behaviors and problems. Children with internalizing problems overall experience greater difficulty and are more often picked on by peers (Sassu, Elinoff, Bray, & Kehle, 2004).

Margalit and Al Yagon (1994) looked at children with learning disabilities who were lonely and found that that 29% demonstrated externalizing behavioral problems while 31% exhibited internalizing behavioral problems. The children with learning disabilities and externalizing problems were found to be aggressive and have difficulty with self-control, and these were associated with rejection by peers. Children with learning disabilities who exhibited internalizing problems were found to be withdrawn and to be neglected by peers altogether rather than rejected. The children with externalizing problems tended to respond with aggressive and disruptive behaviors when they

encountered peer rejection and loneliness, while the children with internalizing and learning issues tended to react with introversion and “sad passivity” or failed to try to make social initiations altogether (Margalit & Al Yagon, 1994).

Hinshaw, Han, Erhardt and Huber (1992) sought to examine the convergence of teacher, parent, and observer behavior ratings of preschoolers in mainstream playgroups. They compared ratings of the above types of informants for children ($N = 45$) with internalizing behavior problems, externalizing behavior problems and children without developmental concerns. The children with internalizing behavior problems were found to have more observed and parent reported social isolation and withdrawal than children with externalizing behavior problems and children without behavioral deficits. Children with externalizing behavior problems were found to have higher rates of examiner observed and teacher rated non-compliance and aggression that affected observed playgroup interactions with other children. Thus, the presence of internalizing and externalizing behavioral problems both negatively impact on the social interactions of children with disabilities. Indeed, Kohler and Fowler (1985) trained three children, one with internalizing behavior problems and two with externalizing problems, to develop a prosocial reciprocity repertoire when interacting with classroom peers. They found that the presence of internalizing and externalizing symptoms was associated with lack of an appropriate peer response repertoire, failure to use amenities, and the children with externalizing symptoms exhibiting negative behaviors (i.e., name-calling, derogatory, rejecting statements) in social play contexts so that they reciprocal interactions with peers were limited.

McKown, Gumbiner, Russo, and Lipton (2009) looked at typically developing children ages 4-14 years old (*N*=158) and 126 clinic referred children ages 5-17 years old (*N*=126). They assessed the children's SEL or Social-Emotional Learning and the children's self-regulation and related these to the children's social competence. They found that children who were better able to perceive and pick up on social cues from the environment and with better self regulatory abilities had higher teacher and parent ratings of social competence. Self-regulation was defined as ability to modulate attention and behavior in response to a situation. It was related to a child's ability to sustain attention, impulse control, and delay gratification. This study focused on behavioral inhibition and control because these characteristics were previously found to be associated with social competence, with children who lacked these characteristics more likely to be regarded poorly and excluded by peers. McKown, et al., using the SSRS to measure social competence, found that being able to self-regulate one's behavior was highly related to social competence and social outcomes. Children with high levels of impulsivity and inattention had poorer measured self-regulatory skills and weaker ratings of social competence.

Impact of classroom placement on the socialization and behavior of children with disabilities

Children with disabilities are considered more vulnerable to deficits in peer interactions as compared to typically developing children in part because of an historical trend towards placement in segregated classrooms with other children with disabilities with fewer age appropriate social or play models and fewer peers with requisite skills to initiate and sustain play exchanges (Beckman & Kohl, 1987; Guralnick, 1986). When

longitudinal research demonstrated that segregated classroom placement did not automatically produce superior educational and developmental outcomes for children with disabilities over integrated classroom placement, legislation was passed mandating placement of children with disabilities in a least restrictive environment and a shift in the trend towards inclusive, integrated classroom placement emerged (Baker, Wang, Walberg, 1994).

Professionals who work with young children with developmental challenges consider addressing social and behavioral deficits a therapeutic priority (Campbell & James, 2007). Mainstreaming and integration or placing a child with disabilities into a classroom with typically developing peers has been widely asserted as a means by which to help children with disabilities improve their socialization (Gresham, 1982) and overall development (Rafferty, Piscitelli, Boetcher, 2003) although differential impact has been noted for the effects of integration depending on the child's developmental level (Cole, Mills, Dale, & Jenkins, 1991). Guralnick and Groom (1987) found that even though children with disabilities exhibited less effective social bids, ineffective social entry strategies, and less interactive play than peers who were typically developing, the children with disabilities preferred to be with peers who were the same age as they were rather than peers who were developmentally equivalent. Playing with same age peers rather than peers of similar developmental level conferred benefits in the form of increased social interaction and more sophisticated play during those social interactions (Guralnick & Groom, 1987). Inclusive placement consistent with a child's chronological age rather than developmental level has been demonstrated to result in improved social outcomes (Beckman & Kohl, 1987; Guralnick & Groom, 1987).

Integrated placement of children with developmental delays with typically developing peers can be valuable because a growing body of research indicates that when children with disabilities are enrolled in mainstream classrooms with typically developing same age peers, they increase their overall rate of and sustained participation in social interactions more than when in segregated classes (Beckman & Kohl, 1987; Faught, et al., 1983; Guralnick & Weinhouse, 1984; Lieber, 1993). Placement in a class with typically developing peers has also demonstrated benefit because typically developing peers can serve as models to increase sophistication of play (Guralnick & Groom, 1987) and act as agents of change (Kohler, & Fowler, 1985).

Beckman and Kohl (1987) looked at 11 children (six children with disabilities, five typically developing) who were in segregated classes for half a day and integrated classes for the other half of the day. They found that both the children with disabilities and typically developing peers interacted more in integrated classrooms than in segregated classes and exhibited a significantly greater increase in positive social interactions over time in an integrated setting. While the children who were typically developing exhibited a more expansive social and play repertoire at the outset of the study and acquired more social skills than the children with disabilities over the course of the study, the children with disabilities still exhibited more social interaction, sophisticated application of social skills and a better play repertoire when they were in an integrated setting than when they were in a segregated one. They also acquired and applied a more expansive repertoire of social skills over time in the integrated setting, although they gained fewer social skills than typically developing peers.

When looking at progression in the acquisition of social repertoires, older and higher functioning preschoolers with disabilities (N = 111) were found to acquire social skills following a developmental sequence similar to children who were typically developing when they were enrolled in mainstream classes rather than in segregated ones (Guralnick & Weinhouse, 1984). However, their rate of progression was significantly less accelerated than that of typically developing peers of similar age and they engaged in more solitary, unoccupied play and less cooperative, social play with more limited play repertoires. Thus, they gained fewer skills and looked more delayed over time when viewed relative to typical peers but were stronger than peers with delays in segregated placements.

Rafferty, Piscitelli, and Boetcher (2003) examined the developmental progress of preschoolers with disabilities in inclusive and segregated settings and receiving services through community based preschools in terms of language ability and social competence (N=96) in order to understand the ongoing effects of inclusion placement and intervention on developmental progress and social competence. They found that children who were higher functioning on measures of language and cognitive development were more likely to be placed in inclusion placements than segregated placements in the first place. In addition, when pre and post placement scores were compared, children who were lower functioning in the first place showed the most dramatic impact on their developmental progress and social functioning than the children who were higher functioning at the time of placement. Actually, children without severe disabilities did not show a significant impact on their developmental progress over the eight month study period from the start to the end of the research study.

Lieber (1993) looked at children with disabilities and typically developing who were enrolled in segregated classes for half a day and in mainstream classes for the other half of the day, and also found that when both groups of children were in segregated placements they had lower rates of social play than in the integrated settings. While children with disabilities had higher rates of social interactions when they were in integrated settings than when they were in segregated situations, the children with disabilities still had lower rates of social interactions than typically developing peers.

The efficacy of inclusive classroom placement as an intervention to address social deficits is tempered by multiple factors. The extent of the delays exhibited by the child with developmental disabilities influences how well the child gains in an integrated classroom placement (Cole, Mills, Dale, & Jenkins, 1991). When social interaction rates are compared for integrated and segregated classroom settings, children with disabilities interact less frequently with peers than do classmates who are typically developing so while children with disabilities interact more in inclusive educational settings than in segregated ones, they still do not interact as much as do typically developing peers (Guralnick &Weinhouse, 1984). In addition, in integrated classrooms, children who are typically developing tend to interact more frequently with each other than with classmates who are disabled (Peterson & Haralick, 1977). Children also naturally form socially segregated subgroups based on peer characteristics and tend to prefer peers who are most like them, resulting in exclusion of children with disabilities from interactions with typically developing children (Gresham, 1982). Both the degree to which a classroom environment facilitates social interaction between all children and initial differences in developmental levels of children with disabilities and their typically

developing classroom peers contribute to the success of the social adaptation of the children with disabilities (Cole et. al., 1991; Gresham, 1982). The goal of integrated placement promoting social interaction is difficult to achieve in the absence of facilitative supportive intervention (Gresham, 1982).

In an exhaustive review of studies about the effects of inclusion on socialization, Gresham (1982) contends that the inclusion model as an independent primary intervention to address socialization deficits in children with disabilities is typically unsuccessful because it is based on three faulty assumptions: that children with disabilities will a) increase their social interaction with typically developing peers by being in the same class, b) be more accepted by typically developing peers if they are in the same class, and c) spontaneously acquire deficient social skills through imitation and modeling via exposure through close physical proximity to typically developing peers. The literature demonstrates that these expectations are erroneous and that mainstreaming has not had this effect without direct social skills training. Gresham attributes this to children with disabilities' lack of requisite social skills to attain peer acceptance and deficient capacity to identify and attend to relevant cues in other children's social behavior in order to improve social competency via observational learning.

Jenkins, Speltz and Odom (1985) randomly assigned matched groups of children into integrated and nonintegrated special educational placements and provided both with similar curricular experiences. They then compared the rates of sustained social interactions over time for the children with disabilities in integrated and segregated placements and did not find differential placement effects. Essentially, the children appeared to be integrated physically but not socially. This was especially the case as the

typically developing children consistently interacted more with typically developing peers than with peers with disabilities.

Jenkins, Odom, & Speltz (1989) then looked at the differential impact of physical and social integration of three- and four- year olds with disabilities in segregated v. integrated classroom placements (N = 72) on rates of play interactions, types of interactions engaged in, the quality of the interactions and on the children's language. Physical integration refers to children with disabilities being placed in integrated classrooms with typically developing peers and social integration refers to children being placed in integrated placements with supportive socialization interventions. Children with handicaps (n = 56) were randomly assigned to integrated and nonintegrated classes that were otherwise equivalent and a program was implemented for promoting social interaction between advanced and less socially competent peers in half of the integrated and segregated classes. The children in social integration conditions received direct play training to increase their social play and decrease their isolate, unoccupied play (based on Parten's categories of social participation while at play) and scripted social skills intervention using trained peer initiated and adult mediated socialization training with reinforcement designs to promote positive social interactions. They found that children in both classes receiving direct play training engaged in less isolate/unoccupied play, more interactive play and had fewer negative social interactions than children in either class without the training but that the children in the segregated classes exhibited more negative social interactions. The effects of social integration interventions on language were that the children who increased their social interactions exhibited more significant gains in their language development than peers who did not have social training.

Teachers only rated children in integrated placements who received play training as exhibiting improved social competence.

Odom, Hoyson, Jamieson, & Strain (1985) sought to increase the rate of peer interactions of preschoolers with disabilities by identifying and training disabled preschoolers to acquire social behaviors that peers considered socially valuable. Odom et al. anticipated that highly valued social behaviors could be acquired and sustained, as they would more easily fall under the influence of natural social reinforcement since peers considered these skills important in the context of social play. Nondisabled peers identified and rated social play behaviors they considered important when interacting with other children. The peers identified play organization, sharing, and responding to initiations by others. Three children with disabilities enrolled in a mainstream classroom played with peer confederates and were reinforced with teacher supervision to increase the rate with which they executed social behaviors that peers reported as finding socially important and desirable. The children with disabilities increased the rate with which they participated in social interactions in a way that was identified as socially desirable by typically developing peers. The intervention thus moved the children with disabilities closer to participating socially in a manner considered more socially desirable by their typically developing peers (Odom, et al., 1985).

When designing and implementing intervention programs to address social deficits, instructed social skills should be those that are valuable in the environment and likely to become entrapped or achieved, generalized and maintained via natural environmental reinforcement (McConnell, 1987).

Kohler and Fowler (1985) trained children with disabilities to increase their use of social amenities and to use developmentally appropriate language to initiate play interaction with peers. Use of improved social language was maintained after intervention reinforcement was withdrawn because the children's improved social language repertoire resulted in increased positive social experiences that were naturally reinforcing. Children in integrated settings who did not receive this training did not improve their social participation.

Reciprocity with peers or how children react to each other's social behaviors has been identified as influencing a child's acquisition and use of social skills (Faught, Ballewag, Crow, & Van Den Pol, 1983). Children tend to prefer peers with like play and social competencies (Faught, et al.; Gresham, 1982; Guralnick, 1986). It is possible that children with disabilities engage in less social interaction with typically developing peers because of their differing personal characteristics and that these differing characteristics result in failure to achieve comparable social integration when children with disabilities are enrolled in settings with typically developing peers (Faught, et al.; Guralnick, 1986). The magnitude of a child's delay was seen as corresponding to the degree to which typically developing children interacted with him or her (Faught, et al.).

Individual characteristics of children with disabilities also influence the degree of integration (Hauser-Cram, Bronson, Upshur, 1993). More integrated classrooms have lower proportions of students with individualized educational plans whereas less integrated classrooms have higher numbers of children with disabilities enrolled and a smaller teacher to student ratio. Cognitively more advanced children are more likely to be in more integrated classrooms with higher proportions of typically developing children

and lower adult-child ratios. In classrooms with higher teacher to child ratios, children are less likely to engage in social interactions (Hauser-Cram, Bronson, Upshur, 1993).

Placement of children with disabilities in an integrated classroom with typically developing peers also seems to result in what Jenkins, Speltz, and Odom (1985) termed a "social familiarity effect." When children with disabilities who attended integrated school programs (N = 43) were placed in an analog play setting with an unfamiliar typically developing peer, they exhibited more effective social entry strategies and achieved successful social initiations and sustained social interactions to a greater degree than did peers with disabilities who were in segregated placements. Jenkins, et al., hypothesized that the children with disabilities who were in the integrated classes harbored less inhibition and had more comfort and skill initiating typically developing peers than did the children with disabilities who did not have experience with typically developing classmates. This is important as being able to initiate and play with an unfamiliar peer is essential towards developing familiarity with other children, which leads to increased socialization (Doyle, Connolly & Rivest, 1980). Children with disabilities have demonstrated great difficulty achieving social interactions with unfamiliar peers, and children who are unable to attain familiarity with peers with whom they are not previously acquainted demonstrate deficient social play (McCune-Nicholich & Stockinger-Forys, 1984).

Overall, research demonstrates that children with disabilities modestly increase their rates of social interactions when they are in groups mixed with typically developing children and children with disabilities than when they are in segregated playgroups (Guralnick, 1986), and the amount of time spent in an integrated setting is positively

correlated with positive social and performance benefits (Guralnick, 1990). Historically, segregated classroom placement has not demonstrated significant benefits over inclusion placement for children with disabilities. Children with disabilities prefer being placed in classes with children who are the same age rather than children who are of typical developmental level. While children with disabilities exhibit less effective social bids, social entry strategies, and less overall interactive play than children who are typically developing, and acquire fewer social and play skills over time than typically developing peers, integrated placement has still demonstrated significant benefits for the children with disabilities. Children with disabilities demonstrate increased social interaction overall, acquire and utilize more sophisticated social and play skills during social interactions when with typically developing peers, and increase their overall rate of sustained social participation. The goal of integrated placement promoting social interaction is difficult to achieve in the absence of facilitative supportive intervention as existing differences in social and play skills and developmental level and peer preference impact on the socialization of the children with disabilities. However, integrated placement with socialization support has been demonstrated to facilitate positive outcomes of integration.

Assessment of behavior and socialization

In recent years, there has been increased call for professionals to evaluate the social and emotional development of very young children in order to identify children with disabilities at earlier ages and to provide them with needed support as early as possible (Campbell & James, 2007; Mesh & Loeb, 2003). Children are entering into childcare at earlier ages, which provides opportunity for their comparison with same age

peers as a reference group. Relative to parents, teachers have a wider frame of reference to identify age and context appropriateness of a child's functioning in multiple domains potentially leading to early identification of concerns and issues (Martin, 1991). When concerns are identified, full assessment with indication of delay is required in order to receive support to address areas of deficit through government-mandated services (US Department of Education, 1997). Determining the presence of true social and behavioral concerns and identifying ways to address them is a primary goal in assessment of young children (Mesh & Loeb, 2003).

Evaluation of social and behavioral characteristics is a crucial component of this assessment. Such assessment is done via direct observation, or completion of direct behavior ratings, parent ratings, or teacher rating forms and questionnaires. Identification and diagnosis of social and behavioral problems allows for development of intervention strategies to address identified problems so that social and behavioral functioning are more competent and context acceptable (Campbell & James, 2007; Gresham, 1986). Assessment of socialization and behavior is done in order to either identify the existence of social problems or in order to provide a functional analysis of behavior to identify antecedents and consequences of behavioral deficits for the purpose of developing intervention strategies. Despite the importance of behavior and socialization as domains of functioning, conceptualization, definition and development of valid assessment techniques for these constructs has limitations (Gresham, 1986).

Mesh and Loeb (2003) define specific domains that impact on social and behavioral competence and functioning. They identified that a child's activity level (active, overactive, or slow to respond), outward expression of emotion or affect, level of

aggressive behavior, degree of sustained and joint attention, cooperation, eye contact, awareness of the social and contextual appropriateness of behaviors and interaction repertoire should be judged relative to same age peers and context in order to determine if the child is socially and behaviorally competent.

Social, emotional and behavioral assessment is more difficult to reliably assess than other constructs and functional domains such as perceptual motor skills, cognitive functioning and academic achievement because social, emotional, and behavioral constructs are not as easily quantifiable and operationally defined for the purpose of assessing their presence, amount of presence or absence in a child being assessed (Martin, 1991). There is lack of uniformity in the definition of these constructs (Smith, et al., 1985) and competence is often context dependent (Gresham, 1986). Especially for preschoolers, there are limitations in the available standardized instruments and assessment methods (Campbell & James, 2007). In addition, assessment of socialization and behavior will differ depending on the assessment purpose, whether looking to make a diagnosis, identify specific social or behavioral deficits, or to conduct an assessment or functional behavior analysis that will lead to the development and implementation of intervention methods to address specific behavioral or social problems. (Gresham, 1986; McConnell & Odom, 1986; Stokes & Osnes, 1986).

Direct behavior ratings have demonstrated promising psychometric properties and usefulness in assessing specific positive and negative behaviors over short periods of time in specific domains and settings and are useful in providing daily behavior report cards or in implementing and assessing efficacy of ongoing interventions but are not an efficient method of identifying overall patterns of behavior and socialization (Chafouleas, Christ,

Riley-Tillman, Breisch, & Chanese, 2007). Naturalistic observations also allow for functional analysis of behaviors that identify specific social skills or behavioral deficits and excesses that lead to effective interventions that raise children's social status and acceptance by peers (Gresham, 1986; McConnell & Odom, 1986).

The developmental characteristics typical of preschool children make it especially difficult to collect information and data via traditional self-report and interview forms of evaluation (Campbell & James, 2007). Preschoolers typically lack the pragmatic skills to fill out traditional self-report measures and verbal expressive skills to describe thoughts, feelings, and relationships. Their limitations in understanding of social and emotional constructs render interview techniques unreliable. McConnell and Odom (1986) define sociometric ratings and rankings as "tests in which children make preferential responses to statements about peers in their social group." These are also difficult to use with preschoolers due to developmental constraints (Campbell & James, 2007) and better suited for measuring a child's popularity rather than identifying if that child has social and behavioral deficits (Gresham, 1986; McConnell & Odom, 1986). Sociometric measures are typically best suited for assessment of the social validity of a social skills intervention program.

Adult completed third party rating scales are seen as the primary evaluation tool for assessing social and behavioral functioning of preschoolers (Gresham, 1982; 1986). However, using adults as informants can also be challenging because different adults see children in varying contexts resulting in inconsistent behavioral norms and perceptions of behavior (Campbell & James, 2007). Despite these limitations, teachers often serve as informants in the collection of primary data with respect to children's social, behavioral

and emotional problems (Martin, 1986). Teachers often initiate evaluation referrals, constitute part of the child's natural environment, and have known and observed the child being evaluated for a long time providing an invaluable perspective on the child's functioning. Teacher rating forms are the most widely used method of collecting evaluation information from teachers because rating forms are inexpensive, simple, and quick to administer, complete, and score (Campbell & James, 2007).

In a meta-analysis Achenbach, McConaughy and Howell (1987) looked at the correlation between behavior ratings of different informants (parents, teachers, mental health workers, observers, peers, and self) for children ages one and a half to 19 years of age. Achenbach, McConaughy and Howell (1987) found that behavior and emotional problem reports often correlated highly ($r = .60$) between similar informants (e.g., two parents, two teachers, etc.) but data collected from different types of informants did not correlate as highly (e.g., correlation between teachers and parents, $r = .27$). Achenbach et al. attributed this difference to the diversity in experience that different informants have with children and variety in perspective on children's behaviors that different informants might provide. They interpreted these findings as reflecting that when assessing children's behavior and emotional concerns, data should be collected from multiple sources in order to obtain a diverse perspective of a child's functioning across multiple settings.

Loeber, Green, Lahey, and Stouthamer-Loeber (1991) sought to determine the differences and similarities between mothers and teachers as informants and self-report in ratings of disruptive behavior in boys ($N = 177$) ages 7-12. The boys consistently demonstrated lower self-reports on the prevalence of attention or oppositional problems

than did teachers and parents leading to the impression that the children tended to underestimate their externalizing behavioral problems. However, teachers also demonstrated significant differences in their ratings of disruptive behaviors and attention problems relative to parents with teachers indicating higher rates of disruptive behavior and attention problems than parents did. These results reflect that differences in ratings across multiple respondents are due to factors relevant to both the informant and the demands and nature of context in which the informant knows the individual being rated.

Accurate assessment of behavior and emotional problems in preschoolers has also become an important focus within a preschool assessment battery because behavior problems in preschoolers tend to remain stable during the preschool years and continue to present into middle childhood (Campbell & Ewing, 1990) and even later (Stokes & Osnes, 1986). Hinshaw, Morrison, Carte and Cornsweet (1987) found that when teacher ratings were compared with parent ratings, teacher ratings were more consistent in their identification of problems in preschool children and their results were more strongly related to other important measures of achievement and adjustment in children of this age. Because of the domain specificity of the relationship between informant ratings and behavior observations, lack of agreement across different types of informants should be expected because teachers and parents see children in different settings and this difference makes it impossible to have identical ratings. In addition, item content for informants who see children in different settings and contexts cannot be identical since the different informants are rating different behaviors (Hinshaw, et al. 1992). Thus, teachers may be seen as uniquely qualified to act as informants to complete rating scales that look at a child's social competency and behavioral functioning in the school setting.

Hinshaw, Han, Erhardt, and Huber (1992) looked at the convergence between parent, teacher, and observer ratings of preschooler peer directed playgroup behavior (N = 45). They found that correspondence between adult raters and objective observations regarding problem behavior in preschoolers varied depending on the type of disturbance being exhibited. When scores on behavior ratings scales completed by parents, teachers, and objective observers were compared for children with externalizing behavior problems (high activity level, defiance, aggression), internalizing behavior problems (withdrawn, inhibited, dysphoric), and those without behavioral or emotional problems, different patterns of association emerged. For internalizing problems, parent and observer ratings were correlated ($r = .28$, $p<.10$) with each other but neither was associated with teacher ratings ($r = .13$ and $-.12$ respectively). Teacher ratings of externalizing problems showed modest negative correlation with observer ratings of internalizing behavior ($r = -.43$, $p<.01$, two tailed) and moderate correlation with observer ratings of externalizing problems ($r = .52$, $p<.001$, two-tailed). Parent and teacher ratings of externalizing behaviors were moderately correlated as well ($r = .32$, $p<.05$). Parent-observer correlations were not significant for externalizing problems. Thus, parent ratings independently predicted internalizing playgroup behavior while teacher ratings independently predicted externalizing playgroup behavior and converged greatly with objective observer's perceptions of the social/peer behavior of preschoolers reflecting the efficacy of teachers as informants regarding children's behavior and social competency in preschool.

Assessments of socialization and behavior have emerged as important components in the evaluation of preschoolers with disabilities. As children are

increasingly enrolled in daycare and school at younger ages, identification of children with issues increases, and evaluation to determine eligibility for government mandated supportive services requires evaluation of children's social, emotional and behavioral characteristics. Use of preschool children and their peers as informants about socialization, emotions and behavior are constrained by developmental limitations in pragmatic skills, particularly communication, and in their ability to answer questions about their emotions, affective states, and social functioning. Parents also seem to function as more accurate informants about children's internalizing states but demonstrate low rates of correlation with teachers and objective observers regarding their children's behavioral and social functioning in school and socialization and externalizing issues. As such, teachers have been demonstrated to function as preferred informants regarding children's social and behavioral characteristics in school.

Problem Statement

Developing age appropriate socialization skills and maintaining social participation is essential for a child's development in multiple domains of functioning. As children are enrolled in preschool and day care at increasingly young ages, the opportunity for identification of children with disabilities and those at risk for delays increases, especially as teachers are able to make judgments about the children's functional characteristics relative to a wider peer reference group. Identification of children with social, emotional, and behavioral deficits is an important goal when conducting preschool assessment because socialization and behavioral problems have been demonstrated to persist into later years in childhood and have a significant impact on functioning as children with disabilities become older. Also, a child's individual

disability characteristics have been demonstrated as having differential impact on his or her social and behavioral functioning. Understanding the social characteristics of children with disabilities is important because interaction difficulties lead to rejection by peers, social isolation, and reduced access to opportunities to benefit from social interaction with typically developing peers (McConnell, 1987).

A trend towards inclusion placement in mainstream educational settings has emerged as a means by which to provide children with disabilities better opportunities for more successful outcomes. In particular, children with disabilities often exhibit social and behavioral problems and inclusion placement is seen as a primary intervention to address them. However, social and behavioral problems do not self-correct merely as a result of inclusion placement. Support to facilitate improved social and behavioral functioning is needed in order to achieve these goals in mainstreaming. Teachers have been identified as preferred informants regarding children's social and behavioral functioning in school.

It has been demonstrated that different disabilities differentially impact on a child's socialization and behavior. Understanding of a child's disability and how that disability specifically impacts on a child's social functioning is crucial in order to develop and implement appropriate strategies to facilitate intervention to address behavioral and socialization deficits. However, it is important to know whether rating scales that assess social and behavioral characteristics that utilize teachers as informants differentially discriminate children with disabilities enrolled in mainstream classrooms according to disability. Investigation into whether teacher ratings can be used to differentially categorize children according to their disability should be helpful since disability differentially impacts on socialization and behavior. Identifying the way in

which teachers see these differences can facilitate development of improved evaluation and intervention practices and lead to better social and behavioral outcomes for children with disabilities enrolled in mainstream settings.

Hypotheses

This study investigated how specific disability characteristics in preschoolers related to socialization in mainstream classroom settings. This study asked the following research questions: a) Do teacher ratings of socialization discriminate according to disability groups, and b) What social competencies relate to each type of disability?

Using two measures of socialization, the Vineland–II Adaptive Behavior Scales Teacher Rating Form (Vineland) and the Social Skills Rating System Social Skills Questionnaire (SSRS), the relationship between disabilities and socialization was investigated. Teachers completed these measures on preschoolers with disabilities in inclusion classrooms to determine if the teachers' ratings of the children's socialization discriminated according to type of disability.

H0 1 and 2:

Research demonstrates that children with disabilities experience socialization deficits, especially relative to children who are typically developing who are of similar chronological age. Research also suggests that the greater the magnitude of the developmental delays, the more significant is the impact on the child's social functioning. Based on that, it is reasonable to expect that children with more disabilities have weaker social functioning.

H0 1: Vineland Adaptive Behavior Scales, Second Edition, Socialization Domain scores will be negatively correlated with number of disabilities. As the number of disabilities a child exhibits increases, scores for adaptive socialization on the Vineland will decrease.

H0 2: As the number of disabilities a child exhibits increases, scores for social

competence on The Social Skills Rating System Social Skills Questionnaire, Preschool Level will decrease.

HO3 and 4:

While social competency and adaptive socialization are different constructs, they are related. Social competency is a global judgment about a person's repertoire of social skills based on behavioral performance and requires not just the presence of skills but the ability to make accurate judgments about the use and application of these skills in an environmentally acceptable way so that a person will gain acceptance in a given context (Gresham, 1986). Sparrow, Cicchetti, and Balla (2006) define adaptive behavior as the demonstration of behaviors required for personal and social sufficiency relative to a person's age and expectations of the person's environment in situations where the behavior is required. Thus the SSRS measures whether a child has social skills and knows how to use them and the Vineland measures whether the child demonstrates the necessary social behaviors through performance, to be independently socially sufficient in an age appropriate manner in accordance with the expectations for the child's contextual milieu. Thus, the SSRS may be seen as measuring a child's social potential while the Vineland measures actual social performance.

The research has demonstrated that disability impacts on socialization and different disabilities bear differential social impacts. Based on the literature reviewed, behavioral deficits appeared to have a stronger impact on social functioning than did other types of deficits. It seems that exhibiting behavioral concerns impacts on socialization in a manner that more significantly impacts on socialization than other types of disabilities, specifically language problems. In addition, social performance deficits,

where children have the requisite social skills but do not use them when needed to promote socialization in real contexts, were often mentioned in association with internalizing behavior issues, particularly anxiety. In contrast, social skill deficits and difficulty with modulating social performance due to externalizing behavioral manifestations were noted to impact on children's ability to learn appropriate skills to promote successful social interaction but not necessarily social participation. Based on the research review and archival information obtained at the time of the file review that took place prior to the implementation of the study and whose purpose was to identify appropriate disability categories for this study, it is the expectation of the investigator that children with language impairments will exhibit stronger scores on measures of social ability (SSRS) and social adaptive performance (Vineland-II) than children with behavioral problems. In addition, it is expected that children with internalizing problems (e.g., anxiety, affective disturbance, etc.) will have more difficulty with social performance than children with externalizing problems (e.g., aggression, impulsivity) but stronger actual social skills.

> *H0 3:* Vineland II, Socialization Domain scores will be related to scores on the Social Skills Rating System Teacher Rating Form for preschool indicating that teacher ratings of student adaptive socialization will be related to teacher ratings of student social competency. However, the relationship between the two measures might differ depending on the type of disability that a child exhibits. It is expected that social competency will be positively correlated with social adaptive behavior where, as social competency increases, social adaptive behavior should increase as well. However, the strength and nature of that relationship

might vary depending on the type of disability.

H0 4: Scores on the Social Skills Rating System Social Skills Questionnaire, Preschool Level and on The Vineland Adaptive Behavior Scales, Second Edition, Socialization Domain will differ significantly according to disability category:

H0 4A: Language/Communication impaired preschoolers will have higher scores of social competence on The Social Skills Rating System Social Skills Questionnaire, Preschool Level than children with Internalizing Behavior Problems.

H0 4B: Language/Communication impaired preschoolers will have higher scores of social competence on The Social Skills Rating System Social Skills Questionnaire, Preschool Level than children with Externalizing Behavior Problems.

H0 4C: Preschoolers with Internalizing Behavior Problems will have higher scores of social competence on the Social Skills Rating System Social Skills Questionnaire, Preschool Level than preschoolers with Externalizing Behavior Problems.

H0 4D: Language/Communication impaired preschoolers will have higher scores of adaptive socialization on the Vineland Adaptive Behavior Scales, Second Edition, Socialization Domain than children with Internalizing Behavior Problems.

H0 4E: Language/Communication impaired preschoolers will have higher scores of adaptive socialization on the Vineland Adaptive Behavior Scales, Second

Edition, Socialization Domain than children with Externalizing Behavior Problems.

H0 4F: Preschoolers with Externalizing Behavior Problems will have higher scores of adaptive socialization on the Vineland Adaptive Behavior Scales, Second Edition, Socialization Domain than preschoolers with Internalizing Behavior Problems.

Chapter III

Method

Participants

The participants were preschoolers with disabilities between the ages of 3 years, 0 months and 4 years, 11 months. All attended mainstream preschool programs in the New York City area and were classified as preschoolers with disabilities receiving one or more of the following related services to address developmental concerns: speech therapy, occupational therapy, physical therapy, counseling/play therapy, and/or special education itinerant teaching services. Children receiving hearing or vision services due to hearing or vision impairment were excluded from the eligible participant pool because visual and hearing impairments significantly impact on socialization in a manner that is singular relative to other disabilities, and children with such impairments are not typically serviced in mainstream preschool classes in a manner comparable to children with other disability types. Evidence of a Centralized Auditory Processing Disorder (CAPD) treated via auditory amplification did not meet exclusionary criteria as CAPD is considered a language disorder, not a hearing impairment. However, none of the participants were identified as having that disability.

Appendix A describes the process by which children are identified as having delays consistent with eligibility for classification for support services and become classified as preschoolers with disabilities. The sample from which the participants eligible for this current study were drawn included only preschoolers who had already gone through the evaluation process to meet eligibility for classification for related services and were receiving such services while attending mainstream preschool classes.

Two special education preschool service delivery agencies that service preschoolers with disabilities by providing related therapeutic services and six mainstream preschool programs in New York City agreed to allow the primary investigator to solicit participants through their programs. The mainstream preschool programs included Universal Pre-Kindergarten classes, subsidized day care, private preschools, private preschools that receive supplementary private donor and grant funding and private preschools that receive supplementary Universal Pre-K support to promote integration of children from differing socioeconomic situations in an educational setting. All the programs provided mainstream integrated classroom settings where children who were typically developing shared classes with preschoolers with disabilities. Participation was solicited from all children serviced through these programs who were known to be classified as preschoolers with disabilities, who were known to be receiving related services, and who were enrolled in mainstream/integrated classes. Of these six programs, all had students enrolled who were classified as preschoolers with disabilities and were receiving some related services. The participants in the study came from households that spoke English, Spanish, and Hebrew. The bilingual preschoolers with disabilities who were part of the participant group were enrolled in classes where there were a significant number of peers who shared their language characteristics so that language dominance was not likely to have a significant impact on those participants' opportunities for socialization within their actual classroom contexts.

The total number of participants evaluated in this study was 86. Of these, six were excluded because they were above the study age limits (36-59 months). Four more were excluded because they did not fit into the diagnostic criteria: two had been

diagnosed with an autistic spectrum disorder; one had a visual impairment, and one had a hearing impairment. There remained 76 participants in the study who met both the age and diagnostic criteria.

The mean participant age was 51.4 months (SD = 7.0 months). Forty-seven participants (61.8%) were male and 29 (38.2%) were female. Fifty-two (68.4%) were white, 24 (28.9%) were Hispanic and two (2.6%) were African American. For the purposes of the analysis, the Hispanics and African Americans were combined into a single non-white ethnicity category. The participants had an average Hollingshead SES score of 41.7 (SD = 15.8).

A total of thirty teachers completed rating forms about the study participants. All teachers were asked to complete a questionnaire detailing their demographic and professional characteristics (Appendix I). All teachers had adequate English written communication skills to complete the requisite teacher forms for study purposes. All teachers signed a consent form agreeing to participate in the study. All of the rating teachers were female. Their mean age was 39.00 years old, with a range of 21 to 70 years. The teachers had an average of 13.87 years of work experience. Just over half (53.3%) had masters degrees (see Table 1); the rest had a Bachelor's degree (16.7%), some college or post high school training (20.0%), or only a high school diploma (10.0%). Each teacher rated between one and eight children, with the mean being 2.53 children per teacher. All classrooms had one lead teacher and two classroom teaching assistants.

Table 1: Educational Level of the Teachers in the Study

	Frequency	Percent
High school diploma	3	10.0
Some college (including teachers' training seminary)	6	20.0
Bachelors degree	5	16.7
Masters degree	16	53.3
Total	30	100.0

Measures

Parent Demographic Questionnaire (Appendix G). Parents or legal guardians of each study participant were asked to complete a brief questionnaire to obtain demographic information detailing the participant's gender, ethnicity, language exposure, and socioeconomic status or, when possible, this information was obtained during archival review. This questionnaire was developed by the primary investigator via adaptation of the Hollingshead Four Factor Index of Social Status (1984). According to Hollingshead, social status is a multidimensional concept. Based on the assumption that there is an undifferentiated, unequal status structure in society, socioeconomic status can be reliably calculated based on a combination of an individual's occupation, the number of years of school completed, gender, and marital status. Using these factors identified as being associated with societal and economic status, a questionnaire was developed by the primary investigator. This parent demographic questionnaire was distributed, along with the consent form, to be completed by the parent or guardian of each participant in order to determine the socioeconomic status of each participant in the study.

Teacher Demographic Questionnaire (Appendix H). The teacher demographic questionnaire is an informational questionnaire designed to obtain information about the gender, age, education and experience of each teacher informant. The primary investigator developed this form as a means by which to collect teacher demographic information that might be pertinent or influential in considering the results of the proposed study.

The Vineland Adaptive Behavior Scales – II, Teacher Rating Form (TRF), (2006) *(Vineland-II).* The Vineland-II is a teacher rating form that was utilized in the proposed study to assess each participant's adaptive social functioning in his or her day-to-day school environment. The Vineland-II is a rating form used to assess adaptive behavior for individuals who are ages 3-0 – 18-11 years. The Vineland-II assesses four domains of adaptive functioning: Communication (expressive, receptive, written), Daily Living Skills (personal, academic, school community), Socialization (interpersonal relationships, play and leisure time, coping skills), and Motor Skills (fine and gross). Using a 3-point Likert Scale (2 = usually, 1 = sometimes or partially and 0 = never), an independent rater reads items and then circles the corresponding score to indicate the frequency with which the listed behaviors are observed in the child being rated. The total score for each sub-domain is summed to obtain a domain standard score. The TRF yields v-scale scores with a mean of 15 and a standard deviation of three for all subdomain scores. The Communication, Daily Living Skills, and Socialization domains each yield scores that cover three subdomains of functioning which are summed to produce a total domain standard score. The Motor Skills domain consists of only two domains that are summed to yield a domain standard score. All four domain standard scores are summed to yield an

Adaptive Behavior Composite Standard Score (also with a mean of 100 and a standard deviation of 15 points). The standard score is a Z score of 100 with a standard deviation of +/- 15. The four domain standard scores are then totaled in order to obtain a total score, an Adaptive Behavior Composite.

For the purpose of this study, teachers were asked to complete only items on the Socialization Scale in order to determine if teacher rated adaptive socialization skill ratings for each participant correlated with teacher ratings of social competency. The scores on each of the three Socialization sub-domains (interpersonal relationships, play and leisure time, and coping skills) were summed and yielded a Socialization standard score. The Socialization standard score was used as a measure of adaptive social functioning for the study participants. The possible Socialization composite score range for the Vineland is 20-160 with higher scores indicating better developed adaptive socialization.

The Vineland manual indicates that only a maximum of two missing items (teacher failed to complete the item) per subdomain is allowed and encourages examiners to contact the teacher to obtain missing responses by reading back items and asking the teacher to verbally indicate a response. In addition, each item has a box next to it to indicate if the teacher guessed or estimated (est.) his or her response to that item. A total of 40 “guesses” or responses marked as “est.” are allowed for the total composite when items are completed for children between the ages of 3-0 – 6-11 years. If the teacher marked more than 40 items on the test as a whole as “est.,” then scores for that form should not be calculated. The manual does not specify a distribution of where the “est.”

markings may be indicated and suggests that “est.” scores may by located anywhere on the test as long as they do not exceed 40 in total.

According to the Vineland II manual, internal consistency reliability calculated using coefficient alpha for ages 3, 4, 5, and 6 years were .97 for the socialization domain (Interpersonal Relationships, *r* = .93 -.94 for ages 3, 4, 5, and 6, Play and Leisure Time, *r* = .91-.92 for ages 3, 4, 5, and 6, and Coping Skills, *r* = .93 for ages 3, 4, 5, and 6) and .98 for the Total Adaptive Behavior Composite. Mean internal consistency reliability for each subdomain was as follows: Interpersonal Relationships .94; Play and Leisure Time, .92; and Coping Skills, .93.

Test-Retest Reliability was calculated by having 135 students in three age groups rated twice by the same teacher with an average interval between ratings of about three weeks. The test retest reliability for the total adaptive behavior composite was *r* = .89. The test retest reliability for the socialization domain for children ages 3-6 was *r* = .74 (Interpersonal Relationships, *r* = .70, Play and Leisure Time, *r* = .67, and Coping Skills, *r* = .65).

The inter-rater reliability for the Total Adaptive Behavior Composite for all ages was *r* = .51. The inter-rater reliability for the socialization domain for ages 3-6 was *r* = .43 (Interpersonal Relationships, *r* = .55, Play and Leisure Time, *r* = .43, and Coping Skills, *r* = .28). Inter-rater reliability correlations overall tended to be higher for the domains than for the subdomains as the domains consist of more total items. While the reported inter-rater reliability correlations are moderate to low, such results are not unusual when comparing results across informants. According to the Vineland manual, these modest levels of inter-rater reliability suggest that different teachers often perceive

or interpret a students' adaptive behavior differently or that students may behave differently in the presence of different teachers. In particular, the Vineland manual explains that at the preschool level, inter-rater reliability was calculated comparing scores of lead teachers and classroom assistants as only one lead teacher was typically available for each child at the preschool level. The only other classroom teacher available at the preschool age level was typically a classroom teaching assistant. As a result, the relationships across these ratings may have been more modest due to the variation in how lead teachers v. classroom assistants perceive children's behavior. Indeed inter-rater reliability correlations are stronger for the socialization domain when children being rated are at the high school level, ages 13-19, and two classroom teachers rated each participant (typically a homeroom teacher and an academic subject teacher) instead of a teacher and an assistant. Achenbach, McConaughy, and Howell (1987) when conducting a meta-analysis of cross informant correlations found modest correlations across similar types (e.g., teacher to teacher) and different types (e.g., teacher to parent) of informants. They ascertained that the modest correlations between informants reflect the variability in how individual informants perceive problems and behaviors and similar types of informants might see children in different situations that might lead to variability in how those individual informants perceive the behavior of the child being rated. Thus, the modest to low inter-rater reliability correlations found on the Vineland are not atypical for inter-rater reliability correlations of rating scales.

The Social Skills Rating System Social Skills Teacher Questionnaire, Preschool Level (1990). Social Skills Rating System is a multi-rater assessment system that looks at student social behaviors that can affect teacher-student relations, peer acceptance, and

academic performance. The SSRS for preschool includes parent and teacher rating forms that may be used separately or in combination. The Teacher Rating Form consists of 40 items. Items 1-30 relate to social competence and items 31-40 relate to problem behaviors. Teachers are asked to complete a 3-point Likert scale scored from 0-2 twice for each social skill and problem behavior listed. Teachers are asked to indicate how often each behavior is observed and how important each behavior is in the child's classroom setting. The purpose of the "How Important?" item is to determine the social validity of the items listed. However, only frequency ratings are used to obtain raw scores for scales and subscales. The SSRS yields a Standard Score that is based on a Z score where the mean is 100 with a standard deviation of 15.

For the purpose of this study, teachers were asked to complete items 1-30 on the "How Often?" scale. For scoring, item scores for each Social Skills item fall into one of three sub-domain categories: Cooperation, Assertion, and Self-Control. Derivation of subscale items was achieved via factor analysis. Items for each subscale are then summed to obtain a total raw score and then yield a Social Skills Scale raw score, which is then converted to a standard score where the mean is 100 with a standard deviation of +/- 15. Separate standard scores are provided for boys and girls. There are no composite standard scores for subdomains. Higher scores are indicative of better social competence. The social skills standard scores were used to test the hypothesis.

The reliability of the SSRS was calculated based on the internal consistency (coefficient alpha) and test-retest reliability. The internal consistency alpha coefficients for the Social Skills Total Scale score for the Preschool Teacher Form is .94. The test retest reliability for the Social Skills, Teacher Form was r = .85. Inter-rater reliability is

discussed in the SSRS manual under the heading of convergent validity. Where convergent validity is the relationship between two or more measures of the same trait using different measurement methods, different methods are defined in the SSRS manual as different sources or raters. For teacher ratings at the preschool level, a convergent validity coefficient of $r = .25$ for the Total Scale was achieved and this score was significant at the $p = .0001$ level. (Total Scale comprised of: Cooperation Subscale $r = .17$, $p = .02$; Assertion subscale $r = .16$, $p = .02$; and self-control subscale $r = .20$, $p = .005$).

Carpenter, Shepherd, and Nangle (2008) conducted an external validation study to determine if the SSRS would exhibit convergent validity with other established factor structures for the assessment of social functioning. Eighty-two preschool children were rated using the SSRS, the Caregiver Teacher Report Form Aggressive Behavior Subscale (Achenbach & Rescorla, 2000), and a relational aggression rating as well as peer sociometric ratings and ratings based on personal interviews by independent trained observers. The SSRS was found to correlate meaningfully and in theoretically expected directions with other measures of social behavior, rendering the SSRS scores to appear a valid measure of social skills, including a significant inverse relationship between aggressive behavior problems and lower ratings of social competence. Overall, the SSRS-T, Preschool Level was objectively viewed a valid and valuable method of assessing both positive and negative aspects of social behavior which can be used to effectively assess social functioning in preschoolers.

Disability Group Assignment Checklist (Appendix D). A checklist identifying each participant's disability characteristics was completed with information obtained via

accessing of archival data. The purpose of the checklist was to identify appropriate disability group assignment at the time of each participant's file review. The Disability Group Assignment Checklist is a checklist that was developed by the primary investigator for the purpose of identifying the disability characteristics of study participants and recording them correctly. The information needed to complete this checklist is obtained from student archival data via an individual review of records for each study participant. Development of this checklist is detailed in the procedures section.

Home Language Survey (Appendix H). Student language dominance was also ascertained through a review of archival data. According to IDEA, ascertaining a students' language dominance at the time of the initial evaluation is required. This is in order to determine what language (s) a child is exposed to and to identify that child's competency to communicate in English or other languages. IDEA requires that children be evaluated in the language in which are most competent or in their dominant language. Language dominance is typically assessed via completion of a *Home Language Survey* form administered at the time when the parent initially signs consent for his or her child to be evaluated. This form will indicate what language or languages the child is exposed to during daily experiences with family, peers and caregivers. During the record review, the Home Language Survey (Appendix H) was consulted in order to determine the language dominance established for each participant. There were no incidences of dominant language differing from the language used in the child's classroom by peers, so language was not considered a factor when analyzing study data. When a home language survey was not available, this information was obtained via archival review.

Procedure

When a child between the ages of three through five is identified as eligible to receive related services through the Committee on Preschool Special Education, he or she is automatically identified as a preschooler with a disability. However, the purpose of this study is to look at how preschoolers with disabilities' specific disability characteristics impact on social adjustment in a mainstream classroom setting. Utilizing this "catch all" preschooler with disabilities classification category typically applied to identify children with disabilities between the ages of three and five is not adequate to allow discrimination of how a specific disability impacts on socialization. Therefore, more specific disability definitions were established in order to better discriminate the characteristics of each study participant so that the impact of disability type on socialization would be more easily differentiated.

In order to distinguish the study participants according to disability type, the original Individuals with Disabilities Education Act (IDEA) was reviewed and criteria for classification into one of the 13 IDEA disability categories were identified (Appendix B). These criteria were adapted so that six possible classification groups were isolated (Appendix C). These groups were considered most likely to be representative of the preschoolers with disabilities who were expected to be part of the subject pool for the current study.

After the possible classification categories were identified, a review of 50 recent evaluation cases was conducted through one of the two preschools that agreed to participate in this study and from which study participation was solicited. This was done in order to determine if the disability categories isolated and defined for this study based

on the original IDEA classification categories were practically appropriate and relevant to the participant population that is the subject of the current investigation. Of the 50 evaluations reviewed, all were conducted between January–December 2007 because these evaluations were most likely to represent the characteristics of the children receiving services during the study period. Only evaluations that resulted in recommendation for inclusion placement with supportive related services (speech therapy, counseling/play therapy, occupational therapy, physical therapy, special education itinerant teaching services/SEIT, adaptive equipment, etc.) were reviewed for the purpose of identifying disability categories. Evaluations that did not result in a recommendation of services or evaluations where the recommendations resulted in placement in a non-inclusionary or self-contained educational placement were excluded.

A checklist specifying the criteria for classification using one of the six new disability classification categories was developed for the purpose of identifying participant disability characteristics during file review. For each disability category established, criteria for assignment were identified using IDEA definitions, referencing to DSM IV TR criteria for disorders first identified in childhood, and the Caregiver/Teacher Report Form (2001) items that were found on item analysis to discriminate internalizing, externalizing, and pervasive developmental problems. Appendix D contains a copy of the checklist that was used when the 50 files were reviewed. A list of the disabilities that were identified during the review process is available in Appendix F. The disability categories identified were adequate to identify the types of problems found in the preschoolers whose evaluation and classification files had been reviewed. Based on the classification categories and assignment criteria for the identified disability categories,

each child reviewed was easily placed into one of the disability classification groups that were developed for the study reflecting the validity of the criteria established for these groups.

Based on the disabilities identified, the following disability categories were established for this study:

I. *Language/Communication problems*

II. *Externalizing behavior problems*

III. *Internalizing behavior problems*

IV. *Motor Problems*

V. *Learning Disability/Cognitive problems*

When actually reviewing files for the purpose of assigning participants to an appropriate study disability category, multiple factors should be looked at because, when a child is classified as a preschooler with a disability and is determined to be in need of one or more related services, the child's standardized test scores are not the only factors considered in the decision making process. As such, reviewing standardized test scores as a sole means by which to categorize impairment for study purposes may not accurately portray a child's impairment or the factors considered when the placement decision was made and could lead to inaccurate disability category assignment for this study. To avoid this, when reviewing records to determine an appropriate disability category for the study participants, a review procedure that considered all possible information was utilized. Available evaluation reports, standardized test scores, and especially the child's Individualized Educational Plan, as well as other supplementary information including teacher reports were reviewed to determine what areas of significant deficit were

identified at the time of classification. That information was then used to assign each study participant to the disability category most appropriate based on his or her individual disability characteristics. All disability characteristics were considered as factors when conducting data analysis. Identification of a child with a hearing or vision issue or identification of a child as demonstrating problems consistent with an autistic spectrum disorder served as exclusionary criteria as a study participant.

In order to carry out the proposed study, each of the participating programs agreed to send a consent form inviting participation (Appendix L) to the parents/guardians of enrolled students who were known to the preschools to be receiving related services while attending the mainstream or integrated preschool program. The letter informed the parents/guardians that a research study was being conducted to determine the relationship between a child's disability characteristics and his or her socialization and that each of their children have the opportunity to participate as preschoolers with disabilities enrolled in mainstream classes. The study participation consent and parent demographic questionnaire was sent to the parents of all eligible participants known to the schools and they were asked to return the consent form signed with the completed demographic form completed if interested in having their children participate. A flier was also posted describing the study and inviting participation at each site. The flier provided the primary investigator's email address and phone number to enable prospective participants to contact her in the event that they were interested in participating. The purpose of this flier was to notify parents of children who may have been receiving related services about whom the school was unaware, about the study to enable them to participate if they so chose. The letter with the consent and demographic questionnaire was sent home twice

with the students. One classroom toy was donated per participant to each participant's class to thank the teacher for her involvement. It is believed that parents read this consent form and volunteered participation without a sense of coercion. It is also believed that completion of the two questionnaires for each student did not place an undo burden on the classroom teachers who were being asked to complete them.

Once written consent to participate was obtained, archival review was conducted and the participant disabilities checklist was completed and each participant's teacher was notified of her student's participation and given a packet containing the two student socialization questionnaires to be completed, The Vineland-II Socialization Domain Questionnaire and The Social Skills Rating System Questionnaire. Each teacher completed each questionnaire rating each student's socialization characteristics on his or her own to minimize a possible social desirability effect for the informant's responses. In addition, each classroom teacher completed a questionnaire about his or her own demographic characteristics. Teachers also signed a consent form indicating that they agreed to participate as informants in the study. A self-addressed, stamped envelope was provided for each informant to return the two socialization questionnaires and the teacher demographic questionnaire to the primary investigator. The review of records occurred independently of the completion of the teacher rating forms though the two were conducted during the same chronological period of the study.

Chapter IV

Results

Disability Types

There were five disability categories used for classification of the study participants: Externalizing Behavior Problems, Internalizing Behavior Problems, Motor Problems, Learning Disability/Cognitive Problems, and Language/Communication Problems. Table 2 shows the distribution of the number of disabilities that were exhibited by the study participants. The average number of disabilities per participant was 2.17 (SD = 0.93).

Table 2: Number of Disabilities

Type of Disability	Frequency	Percent
One	23	30.3
Two	21	27.6
Three	28	36.8
Four	04	05.3
Total	76	100.0

The tables that follow describe the participants in various ways according to the type of disability. Table 3 describes the participants according to the individual types of diagnosed disabilities. Table 4 describes the participants by the combination of types of disability. Table 5, Table 6, Table 7, and Table 8, each describe the participants according to the number of disabilities they have, one, two, three and four disabilities, respectively.

Table 3: Type of Disability

Type of Disability	Frequency	Percent
Externalizing behavior	32	42.1
Internalizing behavior	16	21.1
Motor problems	36	47.4
Learning disability/cognitive problems	22	28.9
Language/communication problems	59	77.6
Total Sample Size*	76	100.0

*Because the disability categories are not mutually exclusive and most participants had multiple disabilities, the total frequency of disability types adds up to more than 76.

Table 4: Participants by Distribution of Disability Types

Externalizing Behavior	Internalizing Behavior	Motor	Learning/ Cognitive	Language/ Communication	Frequency	Percent
Yes	No	No	No	No	3	3.9
No	Yes	No	No	No	2	2.6
Yes	No	Yes	No	No	5	6.6
No	No	No	Yes	No	0*	0.0
No	No	No	No	Yes	13	17.1
Yes	Yes	No	No	No	1	1.3
Yes	No	Yes	No	No	4	5.3
Yes	No	No	Yes	No	0*	0.0
Yes	No	No	No	Yes	4	5.3
No	Yes	Yes	No	No	1	1.3
No	Yes	No	Yes	No	0*	0.0
No	Yes	No	No	Yes	2	2.6
No	No	Yes	Yes	No	0*	0.0
No	No	Yes	No	Yes	6	7.9
No	No	No	Yes	Yes	3	3.9
Yes	Yes	Yes	No	No	1	1.3
Yes	Yes	No	Yes	No	0*	0.0
Yes	Yes	No	No	Yes	1	1.3
Yes	No	Yes	Yes	No	0*	0.0
Yes	No	Yes	No	Yes	9	11.9
Yes	No	No	Yes	Yes	6	7.9
No	Yes	Yes	Yes	No	0*	0.0
No	Yes	Yes	No	Yes	2	3.9
No	Yes	No	Yes	Yes	4	5.3
No	No	Yes	Yes	Yes	5	6.6
Yes	Yes	Yes	Yes	No	0*	0.0
Yes	Yes	Yes	No	Yes	1	1.3
Yes	Yes	No	Yes	Yes	0	0.0
Yes	No	Yes	Yes	Yes	3	3.9
No	Yes	Yes	Yes	Yes	0	0.0
					76	100.0

*All participants with learning disability/cognitive problems also had language/communication problems.

Table 5: Participants with One Disability

Type of Disability	Frequency	Percent
Externalizing behavior	3	3.9
Internalizing behavior	2	2.6
Motor problems	5	6.6
Learning disability/cognitive problems*	0	0.0
Language/communication problems	13	17.1
Total	23	30.3

*All participants with learning disability/cognitive problems also had language/communication problems.

Table 6: Participants with Two Disabilities

Types of Disability	Frequency	Percent
Externalizing behavior and internalizing behavior	1	1.3
Externalizing behavior and motor problems	4	5.3
Externalizing behavior and learning disability/cognitive problems*	0	0.0
Externalizing behavior and language/communication problems	4	5.3
Internalizing behavior and motor problems	1	1.3
Internalizing behavior and learning disability/cognitive problems*	0	0.0
Internalizing behavior and language/communication problems	2	2.6
Motor and learning disability/cognitive problems*	0	0.0
Motor and language/communication problems	6	7.9
Learning disability/cognitive and language/communication problems	3	3.9
Total	21	27.6

*All participants with learning disability/cognitive problems also had language/communication problems.

Table 7: Participants with Three Disabilities

Types of Disability	Frequency	Percent
Externalizing behavior, internalizing behavior and motor problems	1	1.3
Externalizing behavior, internalizing behavior and learning disability/cognitive problems*	0	0.0
Externalizing behavior, internalizing behavior and language problems	1	1.3
Externalizing behavior, motor and learning disability/cognitive problems*	0	0.0
Externalizing behavior, motor and language problems	9	11.8
Externalizing behavior, learning/cognitive and language problems	6	7.9
Internalizing behavior, motor and learning disability/cognitive problems*	0	0.0
Internalizing behavior, motor and language problems	2	3.9
Internalizing behavior, learning disability, and language problems	4	5.3
Motor, learning disability/cognitive and language/communication problems	5	6.6
Total	28	36.8

*All participants with learning disability/cognitive problems also had language/ communication problems.

Table 8: Participants with Four Disabilities

Type of Disability	Frequency	Percent
Externalizing behavior, internalizing behavior, motor and language/ communication problems (all but learning disability/cognitive)	1	1.3
Externalizing behavior, motor, learning disability/cognitive and language/ communication problems (all but internalizing behavior)	3	3.9
Total	4	5.3

Finally, to give a greater sense of the relationship among these disabilities,

Table 9 provides the correlations among the different types of disabilities.

Table 9: Correlations among Types of Disabilities

	Externalizing	Internalizing	Motor	Learning Disability	Language
Externalizing	1.000	-0.179	-0.098	-0.015	-0.118
Internalizing		1.000	-0.167	0.026	-0.110
Motor			1.000	-0.141	-0.186
Learning disability/cognitive				1.000	0.343 (p = 0.002)
Language/ communication					1.000

*P-values less than 0.05 are indicated in parenthesis.

The correlations among the disability types are overall quite small, except for between learning disability and language, which is explained by the fact that every child with a learning disability also had language problems.

Hypotheses

Hypotheses 1 and 2 proposed that as the number of disabilities a child has increases, the child is likely (on average) to have worse social adaptive functioning as measured by the Vineland Socialization Domain on the and social skills as measured by the total score on the SSRS. Hypothesis 3 proposed that there would be a relationship between the measures of the children's social adaptive functioning and their social skills but that this relationship would differ according to disability. Hypotheses 4a and 4b proposed that the type of disability a child exhibits influences his or her social functioning and social skills in a differential manner.

All analyses used a 0.05 level (2-tailed) of significance. A Bonferroni correction for multiple tests means that, since six hypotheses were being tested – H1, H2, H4a, H4b, and H3a and H3b – only results with a p-value that was less than 0.0083 were considered statistically significant.

Control Variables Included in the Analyses

Before conducting data analysis to test the relationship between the number of disabilities a participant exhibited and the participant's Vineland (H1) and SSRS (H2) scores, two other sets of correlations with the Vineland and SSRS scores were calculated. First, the correlations between the participant's chronological age, gender, ethnicity and SES were calculated in order to determine if there were significant relationships between these factors, and the scores on the SSRS and the Vineland. These results are displayed in Table 10. Based on this analysis, it was decided to control for age in months, ethnicity and SES in the other analyses.

Table 10: Correlations between Vineland Scores, SSRS Scores, and Various Sociodemographic Variables for Child Participants*

Test	Age in Months	Gender[1]	Ethnicity (White)[2]	SES
Vineland	0.116	-0.012	-0.356 (p = 0.002)	-0.293 (p = 0.010)
SSRS	0.267 (p = 0.020)	-0.129	-0.346 (p = 0.002)	-0.267 (p = 0.019)

*P-values less than 0.05 are indicated in parenthesis. As this analysis was not a study hypothesis but was used to decide which variables to include, a Bonferroni correction was not utilized.

[1]0 = Male, 1 = Female

[2]0 = Non-White (mainly Hispanic), 1 = White

Second, the correlations between the Vineland and SSRS scores and the teacher rater's age, experience, and education level were calculated in order to determine if there were significant relationships between these factors, and the scores on the SSRS and the Vineland (Table 11). None of these correlations were significant.

Table 11: Correlations between Vineland Scores, SSRS Scores, and Various Rating Teacher Characteristics*

Test	Age	Experience	Education Level[1]
Vineland	.014	-.014	.128
SSRS	-.100	-.085	.106

*P-values less than 0.05 are indicated in parenthesis. As this analysis was not a study hypothesis but was used to decide which variables to include, a Bonferroni correction was not utilized.

[1]1 = High school, 2 = Some college (including teachers training seminary), 3 = Bachelors degree, 4 = Masters degree

Hypotheses 1 and 2

To test H1 and H2, the mean Vineland and SSRS scores were calculated according to the number of disabilities that a child exhibits. All five disability types were included in this analysis. In looking at the distribution of the mean Vineland and SSRS scores, the mean score decreases with the number of disabilities that a child exhibits. Table 12 shows the means for the Vineland and SSRS scores according to the number of disabilities a child exhibited.

Table 12: Mean Vineland and SSRS Scores* by Number of Disabilities

Number of Disabilities	Vineland	SSRS
One (N = 23)	106.17 (3.479)	105.70 (3.657)
Two (N = 21)	100.52 (3.337)	96.33 (3.606)
Three or more (N = 32)	100.00 (3.799)	97.28 (4.007)
Total (N = 76)	102.01 (2.123)	99.57 (2.271)

*Standard error of the mean is listed in parentheses.

Because so many of the participants (77.6%) had language/communication problems, it was suspected that in this study, this disability might not be related to the Vineland and SSRS scores independent of the other disability categories. (However, see also Table 9 and Table 16 and the related elaboration in the discussion section, which suggest that this issue is more complex.) Thus, the analysis was redone using disabilities other than language. The results are presented in Table 13. These results indicate that there are some participants (N = 13) who only exhibit language/communication problems. When language/communication problems were removed from the analysis, the differences between the mean Vineland scores were much more sharply defined. Thus, it was decided to use this variable in further analysis.

Table 13: Mean Vineland and SSRS Scores* by Number of Disabilities Other than Language

Number of Disabilities Other than Language	Vineland	SSRS
None (N = 13)	111.92 (5.013)	110.23 (5.023)
One (N = 25)	102.76 (2.792)	98.96 (3.406)
Two or more (N = 38)	98.13 (3.292)	96.32 (3.438)
Total (N = 76)	102.01 (2.123)	99.57 (2.271)

*Standard error of the mean is listed in parentheses.

In this analysis, the decrease in the mean Vineland and SSRS scores was not linear. The difference in mean Vineland and mean SSRS scores between participants with zero (only Language Communication Problems) and one non-language disabilities were noticeably bigger than the difference in mean Vineland and mean SSRS scores between children with one and two or more disabilities. As the relationship between the mean Vineland and SSRS scores and the number of disabilities was not linear, an attempt was made to resolve this by adding a quadratic term into the analysis.

Hypothesis 1

Before conducting a regression analysis, a simple bivariate correlation between the Vineland and the modified (excluding language/communication problems) number of disabilities (linear term) was conducted and yielded a correlation of -0.268 ($p = 0.019$), indicating a significant relationship between the Vineland scores and the number of disabilities.

Based on the analysis of the correlations between Vineland scores and related sociodemographic variables (Table 7), two regression analyses were conducted. One

analysis was of Vineland score on age in months, ethnicity, SES and number of disabilities. The other analysis was with the same terms but also a quadratic term (number of disabilities squared). The results of the first analysis are presented in Table 14.

Table 14: Regression of Vineland Score on Age in Months, Ethnicity, SES and Number of Disabilities

Variable	B	Beta	t	Significance
Age in months	0.461	0.175	1.608	0.112
Ethnicity (White)	-7.283	-0.184	-1.225	0.225
SES	-0.223	-0.191	-1.262	0.211
Number of disabilities	-6.913	-0.317	-2.816	0.006
(Constant)	102.273		6.281	0.000

$R^2 = 0.225$, $F(4, 71) = 5.157$, $p = 0.001$.

The results of the first regression analysis reveal that the number of disabilities is very significantly related to Vineland score ($p = 0.006$), even after age, ethnicity and SES are taken into account. In particular, the significance level increases from 0.019 once the data is analyzed controlling for these three sociodemographic variables. To see if adding a quadratic term would improve the results, an additional analysis was conducted. The results are presented in Table 15.

Table 15: Regression of Vineland Score on Age in Months, Ethnicity Number of Disabilities and Number of Disabilities Squared (Quadratic Term)

Variable	Beta	t	Significance
Age in months	0.180	1.641	0.104
Ethnicity	-0.181	-1.195	0.236
SES	-0.192	-1.262	0.211
Number of disabilities	-0.489	-1.500	0.130
Number of disabilities squared (quadratic term)	0.171	0.544	0.588

$R^2 = 0.228$, $F(5, 70) = 4.144$, $p = 0.002$.

As Table 15 makes clear, a quadratic term increases the R^2 term by a small amount (from 0.225 to 0.228) but the quadratic term itself is not significant ($p = 0.588$). Adding this term reduces the overall F term (from 5.157 to 4.144, p increases slightly from 0.001 to 0.002). Therefore, the quadratic term was not included in the other analyses involving the Vineland score.

At this stage the analyses indicated that H1 was supported and that social adaptive functioning, as measured by mean Vineland scores, decreased depending on the number of disabilities a child exhibited. However, as is found in the later analysis of Hypothesis 4a, some disabilities have a greater influence on the Vineland scores than others.

Hypothesis 2

Before conducting regression analyses, a simple bivariate correlation between the SSRS and the modified (excluding language/communication problems) number of disabilities (linear term) was conducted and yielded a correlation of 0.216 ($p = 0.062$).

Based on the analysis of the correlations between SSRS scores and related sociodemographic variables (Table 10) two regression analyses were then conducted. One analysis was of SSRS score on age in months, ethnicity, and SES, and number of disabilities. The other analysis was with the same terms but also a quadratic term (number of disabilities squared). The results of the first analysis are presented in Table 16.

Table 16: Regression of SSRS Score on Age in Months, Ethnicity and SES, and Number of Disabilities

Variable	B	Beta	T	Significance
Age in months	0.994	0.335	3.170	0.002
Ethnicity	-12.219	-0.289	-1.978	0.052
SES	-0.084	-0.068	-0.459	0.648
Number of disabilities	-6.382	-0.274	-2.503	0.015
(Constant)	71.860		4.249	0.000

$R^2 = 0.269$, $F(4, 71) = 6.176$, $p = 0.000$.

The results of the first regression analysis reveal that the number of disabilities is significantly related to SSRS score ($p = 0.015$), even after age, ethnicity and SES are taken into account. The significance level increases from 0.062 to 0.000 when controlling for these three socio-demographic variables in the analysis of this data.

To see if adding a quadratic term would improve the results, an additional analysis was conducted. The results are presented in Table 17.

Table 17: Regression of SSRS Score on Age in Months, Ethnicity and SES, Number of Disabilities and Number of Disabilities Squared (Quadratic Term)

Variable	Beta	t	Significance
Age in months	0.348	3.310	0.001
Ethnicity	-0.280	-1.932	0.057
SES	-0.70	-0.479	0.634
Number of disabilities	-0.693	-2.258	0.027
Number of disabilities squared (quadratic term)	0.440	1.460	0.149

$R^2 = 0.291$, $F(5, 70) = 5.747$, $p = 0.000$.

Adding a quadratic term increases the R^2 somewhat, from 0.269 to 0.291, but the quadratic term itself is not significant ($p = 0.149$), and adding this term reduces the overall F slightly (from 6.176 to 5.747, though p remains at 0.000). Therefore, the quadratic term was not included in the other analyses involving the SSRS score.

At this stage the analyses indicated that H2 was supported and that mean SSRS scores decreased depending on the number of disabilities a child exhibited. However, later analysis of Hypothesis 4b suggests that this relationship is not linear and that some disabilities have a greater influence on the SSRS scores than others.

To summarize, Hypotheses 1 and 2 proposed that as the number of disabilities that a child exhibits increases, the child's social adaptive functioning and repertoire of social skills would decrease. The analysis was conducted controlling for age, ethnicity and SES, the demographic factors that were found to be most clearly related to participant Vineland and SSRS scores. Since 77.6% of participants exhibited Language/ Communication problems, the analyses were conducted again omitting this variable from

the analysis. The analyses revealed that both social adaptive functioning (as measured by the Vineland) and social skills (as measured by the SSRS), were related to the number of disabilities that a child exhibited. As the number of disabilities went up, the Vineland and SSRS scores went down. However, this decrease was not linear. There was a larger decrease in social adaptive functioning and social skills between participants with only Language Communication problems and participants who only had one non-language disability than between these participants and those who had two or more non-language disabilities.

Hypothesis 4a

In order to determine the overall relationship between type of disability and Vineland score, mean Vineland scores were first calculated for participants with and without each type of disability (see Table 18).

Table 18: Mean Vineland Scores* Based on Type of Disability

Type of Disability	Yes	No	Difference
Externalizing behavior problems	93.78 (3.227)	108.00 (2.478)	-14.22 (p = 0.01)
Internalizing behavior problems	101.38 (4.985)	102.18 (2.360)	-0.80
Motor problems	97.61 (2.318)	105.97 (3.359)	-8.36 (p = 0.048)
Learning disabilities/cognitive problems	107.27 (5.172)	99.87 (2.088)	7.40
Language/communication problems	104.10 (2.576)	94.76 (2.602)	9.34

*Standard error of the mean is listed in parentheses. Mean score for the sample as a whole was 102 .01 (2.123).

[+]P-values less than 0.05 are indicated in parenthesis.

A review of Table 18 demonstrates that children with Externalizing Behavior Problems have significantly lower mean Vineland scores than children without Externalizing Behavior Problems. Significant differences were also found between mean Vineland scores of children with and without motor problems. Children with and without internalizing behavior problems had similar mean Vineland scores. Children with learning disability/cognitive problems and those with language/communication problems actually had higher mean Vineland scores than children without those problems.

After this overall look at the different disabilities, the Vineland score was regressed on age in months, ethnicity and SES, and each of the disability variables as a dummy variable. The results of this analysis appear in Table 19.

Table 19: Regression of Vineland Score on Age in Months, Ethnicity and SES and the Various Disabilities

Model	B	Beta	T	Significance
Age in months	0.573	0.217	2.021	0.047
Ethnicity	-8.073	-0.204	-1.378	0.173
SES	-0.129	-0.11-	-0.707	0.482
Externalizing behavior problems	-14.771	-0.397	-3.763	0.000
Internalizing behavior problems	-9.344	-0.207	-1.921	0.059
Motor problems	-4.732	-0.128	-1.162	0.249
Learning disabilities/cognitive problems	2.811	0.069	0.603	0.549
Language/communication problems	3.502	0.079	0.719	0.475
(Constant)	90.379		5.148	0.000

$R^2 = 0.342$, $F(8, 67) = 4.350$ ($p = 0.000$).

Among the disabilities, Vineland score is related only to externalizing behavior. A secondary two-step analysis was conducted, with age, ethnicity SES, and externalizing behavior entered at the first step and the other variables as the second step (see Table 20).

Table 20: Difference between Models for Vineland Score with and without Four Disability Variables

Model	R^2	R^2 Change	F Change	Sig. F Change
1 (With only age, ethnicity, SES, and externalizing behavior)	0.277	0.277	6.816	0.000
2 (With the other disability variables as well)	0.342	0.064	1.639	0.175

Table 20 shows the results of the step-wise regression analysis. The analysis conducted in model 1, which includes only age, ethnicity, SES, and externalizing behavior, explains a significant portion of the variance ($R^2 = 0.277$, $F(4,71) = 6.816$, $p = 0.000$) in the Vineland scores. In Model 2, when the other four disability variables are included, only 0.064 is added to the R^2, while the F to test the R^2 change is only 1.639 and is not significant ($p = 0.175$).

Comparison of Hypothesis 1 and Hypothesis 4a

Having found that in Hypothesis 1 that Vineland score is related to number of disabilities and in Hypothesis 4a that Vineland score is related to externalizing behavior problems, the question arose as to which of these was a better predictor of the Vineland score. Therefore, an analysis was conducted in which Vineland scores were regressed on both the externalizing behavior problems and number of disabilities, as well as the variables of age, ethnicity and SES which were included in almost all the analyses. The results are reported in Table 21.

Table 21: Regression of Vineland Score on Age in Months, Ethnicity and SES, Externalizing Behavior Problems and Number of Disabilities

Variable	Beta	t	Significance
Age in months	0.153	1.454	0.150
Ethnicity	-0.145	-0.997	0.322
SES	-0.221	-1.509	0.136
Externalizing behavior problems	-0.311	-2.566	0.012
Number of disabilities	-0.150	-1.187	0.239

$R^2 = 0.292$, $F(5, 70) = 5.766$, $p = 0.000$.

The better predictor of Vineland scores is externalizing behavior problems, which continues to be very significant. This suggests that perhaps number of disabilities was significant in Hypothesis 1 at least in part because it is highly correlated with externalizing behavior problems. Children with multiple disabilities were more likely to have externalizing behavior problems.

In summary, these results support hypothesis 4A and demonstrate that the differences in the Vineland scores between the disability groups was significant and that social adaptive functioning can be better predicted by noting the type of disability a child exhibits rather than by simply counting the total number of disabilities, as Hypothesis 1a had suggested. Participants with externalizing behavior problems exhibited the most difficulties with social adaptive functioning, followed by participants with motor problems, and then participants with internalizing behavior with language/communication and learning disability/cognitive problems. For the last three groups, the differences were not significant. In fact, a surprising result, the participants in

this sample with the last two types of disabilities, were found to have higher mean Vineland scores than what is expected in the general population, for whom the mean Vineland score is 100. This will be explored further in the Discussion section.

Hypothesis 4b

In order to determine the overall relationship between type of disability and SSRS score, mean SSRS scores were first calculated for participants with and without each type of disability (see Table 22).

Table 22: Mean SSRS Scores* Based on Type of Disability[+]

Type of Disability	Yes	No	Difference
Externalizing behavior problems	92.31 (3.297)	104.84 (2.882)	-12.53 (p = 0.006)
Internalizing behavior problems	102.94 (4.959)	98.67 (2.564	4.27
Motor problems	97.61 (2.318)	105.97 (3.359	-8.36
Learning disabilities/cognitive problems	101.27 (5.830)	98.87 (2.181	2.40
Language/communication problems	100.25 (2.766)	97.18 (13.920)	3.07

*Standard error of the mean is listed in parentheses. Mean score for sample as a whole was 99.57 (2.271).

[+]P-values less than 0.05 are indicated in parenthesis.

A review of Table 22 shows that the children with Externalizing behavior Problems have much lower SSRS scores than those without Externalizing behavior Problems. The difference between the mean SSRS scores for children with and without motor problems was much smaller and was not significant. The children with

internalizing behavior problems, learning disabilities, and language/communication problems actually have higher mean SSRS scores than children without those problems.

After this overall look at the different disabilities, the SSRS score was regressed on age in months, ethnicity SES, and each of the disability variables as a dummy variable. The results of this analysis appear in Table 23.

Table 23: Regression of SSRS Score on Age in Months, Ethnicity and SES and the Various Disabilities

Model	B	Beta	T	Significance
Age in months	0.955	0.339	3.081	0.003
Ethnicity	-11.022	-0.282	-1.861	0.067
SES	-0.062	-0.050	-0.314	0.755
Externalizing behavior problems	-12.808	-0.322	-2.985	0.004
Internalizing behavior problems	-5.872	-0.122	-1.104	0.273
Motor problems	-4.214	-0.107	-0.947	0.347
Learning disabilities/cognitive problems	-0.770	-0.018	-0.151	0.880
Language/communication problems	0.234	0.005	0.044	0.965
(Constant)	69.945		3.645	0.001

$R^2 = 0.313$, $F(8, 67) = 3.811$ ($p = 0.001$)

These results indicate that SSRS is related only to externalizing behavior and not significantly to any of the other disability variables. A secondary two-step analysis was conducted, with age, ethnicity and SES, and externalizing behavior entered at the first step and the other variables as the second step (see Table 24).

Table 24: Difference between Models for SSRS Score with and without Four Disability Variables

Model	R^2	R^2 Change	F Change	Sig. F Change
1 (With only age, ethnicity, SES and externalizing behavior)	0.293	0.293	7.356	0.000
2 (With the other four disability variables as well)	0.313	0.020	0.481	0.749

Table 24 shows the results of the step-wise regression analysis. The analysis conducted in model 1, which includes only age, ethnicity and SES, and externalizing behavior, explains a significant portion of the variance ($R^2 = 0.293$, $F(4,71) = 7.356$, $p = 0.000$) in the Vineland scores. The analysis conducted in model 2, when the other four disability variables are included, adds only 0.020 to the R^2, while the F to test change in R^2 is only 0.481 and is not significant ($p = 0.749$).

Comparison of Hypothesis 2 and Hypothesis 4b

Having found in Hypothesis 2 that SSRS score is related to number of disabilities and in Hypothesis 4 that SSRS score is related to externalizing behavior problems, the question arose as to which of these was a better predictor of the SSRS score.

Therefore, an analysis was conducted in which SSRS scores were regressed on both the externalizing behavior and number of disabilities, as well as the variables of age, ethnicity and SES which were included in almost all the analyses. The results are reported in Table 25.

Table 25: Regression of SSRS Score on Age in Months, Ethnicity and SES, Externalizing Behavior Problems and Number of Disabilities

Variable	Beta	t	Significance
Age in months	0.318	3.062	0.003
Ethnicity	-0.259	-1.802	0.076
SES	-0.090	-0.620	0.537
Externalizing behavior problems	-0.233	-1.946	0.056
Number of disabilities	-0.149	-1.186	0.240

$R^2 = 0.307$, $F(5, 70) = 6.199$, $p = 0.000$.

Although the results here are not as clear as those for the Vineland score, one can nevertheless see in this analysis (Table 25) that the better predictor of Vineland scores is externalizing behavior problems, which is still close to significant ($p = 0.056$), while number of disabilities is no longer significant at all. This suggests that perhaps number of disabilities was significant in Hypothesis 2 at least in part because it is highly correlated with externalizing behavior problems (Pearson correlation = 0.548). Children with multiple disabilities were more likely to have externalizing behavior problems.

In summary, these results support hypothesis 4B and demonstrate that the differences in the SSRS scores between the disability groups was significant and that social skills can be better predicted by noting the type of disability a child exhibits rather than by simply counting the total number of disabilities, as Hypothesis 1b had suggested. Participants with externalizing behavior problems exhibited the most difficulties with social skills, followed by participants with motor problems, and then participants with internalizing behavior, language/communication, and learning disability/cognitive

problems (see Table 22). In fact, and unexpectedly, the participants in this sample with the last three types of disabilities were found to have higher mean SSRS scores than those without each of those disabilities, a finding that will be addressed further in the discussion section.

Hypotheses 3a and 3b

Hypothesis 3a proposed that teacher ratings of adaptive socialization, as measured by the Vineland, would be related to teacher ratings of social skills, as measured by the SSRS. Hypothesis 3b proposed that the strength and nature of the relationship between the two would vary depending on the type of disability that a child exhibits.

The bivariate correlation between the Vineland and SSRS scores is 0.889. A partial correlation between these scores, controlling for age in months, ethnicity and SES, also indicates that the SSRS score is closely related to the Vineland score. This is supported by a regression of SSRS score on Vineland, age in months, and ethnicity and SES (see Table 26).

Table 26: Regression of SSRS Score on Vineland Score, Age in months, Ethnicity and SES

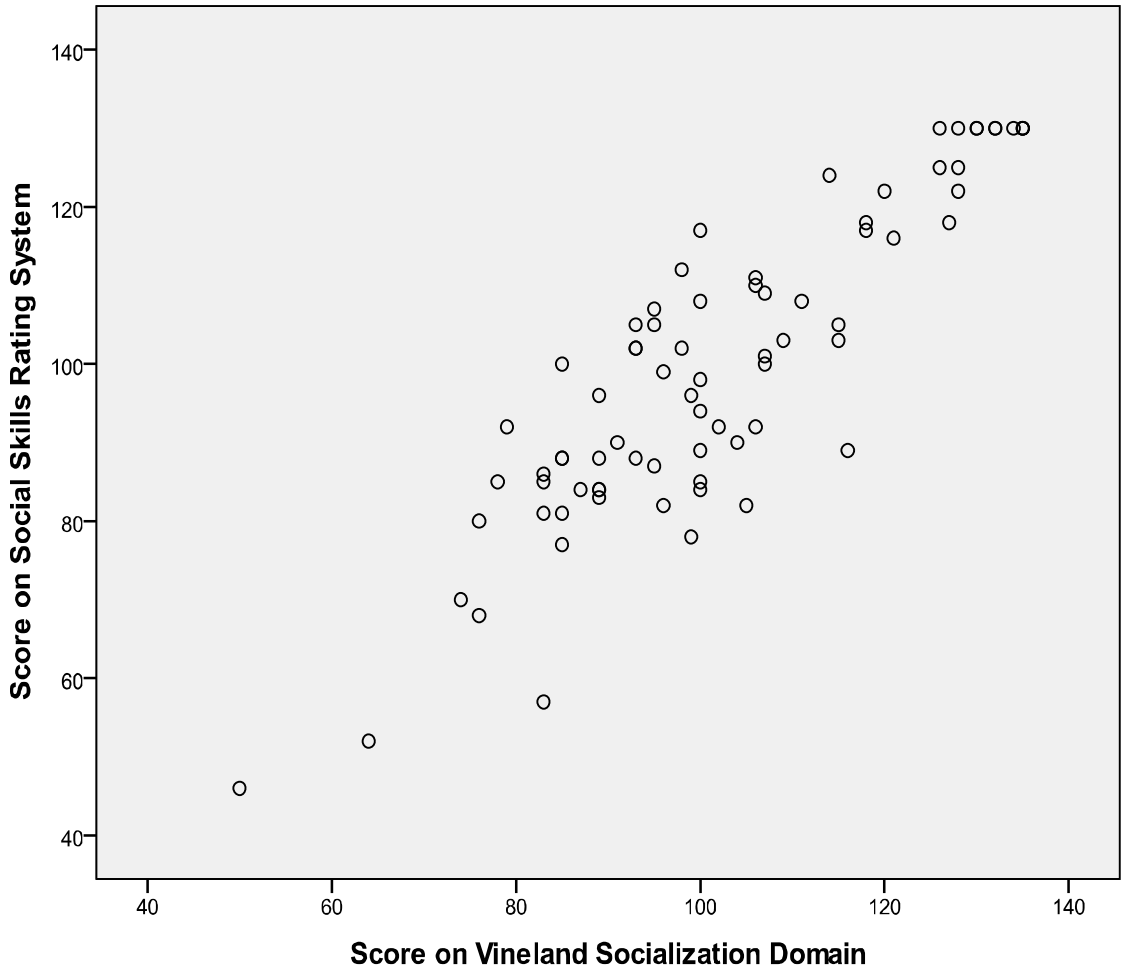
Variable	B	Beta	t	Significance
Vineland	0.969	0.850	15.958	0.000
Age in Months	0.523	0.186	3.648	0.001
Ethnicity	-5.666	-0.134	-1.906	0.061
SES	-.121	0.097	1.397	0.167
(Constant)	-21.141		-21.30	0.037

The model has an R^2 of 0.827, F (4, 71) = 84.658 (p = 0.000).

All of these results indicate a very strong relationship between social adaptive functioning, as measured by the Vineland, and social skills, as measured by the SSRS, for the entire group, suggesting that children with poor social skills are likely to have poor adaptive social functioning. Age is also an important predictor of SSRS score, but ethnicity and SES are not, although ethnicity is somewhat close to being significant.

Figure 1 provides a graphic representation of the relationship between Vineland and SSRS scores for the sample.

Figure 1: Plot of SSRS Score against Vineland Score



In order to test Hypothesis 3b, investigating how the type of disability a child exhibits influences the relationship between the SSRS and Vineland scores, the SSRS score was regressed on the Vineland score, age, ethnicity, SES, and externalizing behavior. The other disability types were omitted both because they were not significant in predicting the SSRS score and because including them would mean too many variables, particularly given the small sample size. The results are shown in Table 27.

Table 27: Regression of SSRS Score on Vineland Score, Age in months, Ethnicity, SES and Externalizing Behavior

	B	Beta	T	Significance
Vineland	0.920	.860	14.708	.000
Age	0.517	.184	3.576	.001
Ethnicity	-5.868	-.139	-1.939	.056
SES	0.131	.104	1.454	.150
Externalizing behavior	0.979	.025	.438	.662
(Constant)	-22.674		-2.144	0.036

$R^2 = 0.827$, $F(5, 70) = 66.994$, $p = (0.000)$.

Table 27 demonstrates that externalizing behavior is not significant in predicting the SSRS score from the Vineland score. The beta values and significance of the other variables remains fairly similar to their values in Table 25. A secondary two-step analysis was conducted, with Vineland, age, and ethnicity and SES entered at the first step and externalizing behavior as the second step (see Table 28).

Table 28: Difference between Models for SSRS Score with and without Externalizing Behavior

Model	R^2	R^2 Change	F Change	Sig. F Change
1 (Only Vineland, age, ethnicity and SES)	0.827	0.827	84.658	0.000
2 (With externalizing behavior)	0.827	0.000	0.192	0.662

Table 28 demonstrates that model 1, which includes only Vineland, age, and ethnicity and SES ($R^2 = 0.827$, $F(4, 71) = 84.658$, $p = 0.000$), provides a significant explanation for the variance in the mean SSRS scores. Model 2, which includes externalizing behavior as well to the analysis adds almost nothing to the R^2, while the change in F is only 0.192 and is not significant ($p = 0.662$). The results are fairly similar if the other disability variables are added to the analysis: the R^2 increases by only 0.016 and the change in F is only 1.362, which is not significant; $p = 0.250$).

Thus, Hypothesis 3a was confirmed, as social skills as measured by the SSRS are highly correlated with social adaptation as measured by the Vineland. However, Hypothesis 3b, which proposed that the relationship between the two scores would be

affected by the type of disability was not supported. The relationship between the SSRS and the Vineland was affected by a child's age but not by his or her disability.

Summary

Table 29 summarizes the analyses in this section. All the hypotheses were supported except for hypothesis 3a, proposing that type of disability affected the relationship between Vineland and SSRS scores. However, the results do suggest that, at least in this sample, the number of disabilities or each of the different types of disabilities that a child might exhibit did not significantly impact on social adaptation or skills. What most significantly impacted on these was the presence or absence of externalizing behavior problems.

Summary of Major Variable Correlations

Different study variables were found to be strongly associated with one another. 182

Appendix M provides a summary table listing all the study variables and the relationship between them. The relationships between the variables that are most significant have already been discussed within the results section or will be addressed further within the discussion section of this study.

Table 29: Summary of Hypotheses

Hypothesis number and Brief Description (all include age, ethnicity and SES as control variables)	Table number	p-value*	Was hypothesis supported?
1 (Vineland and number of disabilities)	Table 14	0.001	Yes[+]
2 (SSRS and number of disabilities)	Table 16	0.000	Yes[+]
4a (Vineland and type of disability)			
	Table 19	0.000	Yes[§]
4b (SSRS and type of disability)	Table 23	0.001	Yes[§]
3 (Vineland and SSRS)	Table 26	0.000	Yes
3a (Vineland and SSRS, with externalizing behavior)	Table 27	0.662	No

*P-value $\leq$ 0.0083 was required for significance. See discussion in the section called "The Hypotheses."

[+]However, analysis in hypotheses 4a and 4b suggests that presence or absence of externalizing behavior problems was more influential than the number of disabilities.

[§] The only disability which was significant was externalizing behavior problems.

In conclusion, the results of this study may be summarized as follows.

The results of analyzing Hypotheses 1 and 2 suggested that as the number of disabilities a child exhibits increases the average SSRS scores decrease. This would imply that children with more disabilities are likely to exhibit weaker social skills than children with fewer disabilities. In particular, children with one disability, or who had a language problem and one other disability, displayed better social skills than children with two or more disabilities or a language disability and two or more other disabilities.

However, the results of analyzing Hypotheses 4a and 4b suggest that the results from Hypotheses 1 and 2 were somewhat misleading. It is disability type rather than number of disabilities that has the major effect on a child's social adaptive functioning and social skills. Children who exhibited externalizing behavior problems had weaker adaptive social functioning and social skills than children with other types of disabilities.

The results of analyzing Hypothesis 3a indicate that there is a relationship between the children's social adaptive functioning and the quality of their social skills. However, the analyses investigating 3b did not find that these scores can be differentially predicted depending on the type of disability that a child exhibits.

Teacher Analyses

There was a significant positive correlation between the number of children each teacher rated and the Vineland score ($r = .382$, $p = 0.037$) and there was a non-significant positive correlation between number of children and SSRS score ($r = .277$, $p = .139$). However, much of this co-relationship was due to a single teacher who rated six children and tended to give them very high scores, scores that were much higher than those of the other children. If the ratings of this teacher were to be eliminated from the analysis, the correlations would remain positive but would be smaller and non-significant ($r = .285$ and Vineland and $r = .173$ for SSRS). Therefore, it appears that the trend for children's scores to increase as the number of forms a teacher rates increases may be related specifically to the ratings of one particular teacher and should not necessarily be viewed as representative of a trend that might influence the outcome of this research.

Discussion

The ability to sustain appropriate social interactions has been identified as a critical skill. The experiences that come as a by-product of socialization have an impact on development in multiple domains of functioning. Children with disabilities have been found to have difficulty with socialization relative to typically developing peers and these limitations have been found to negatively impact development by restricting opportunity to participate in contexts that provide experiential learning and the opportunity to hone such skills.

Much research in the past has looked at the socialization characteristics and impact of socialization deficits on children with disabilities relative to typically developing peers. However, a less-explored topic is how disability types differentially affect children's social functioning. Understanding how the type of disability a child exhibits influences his or her social functioning is important because such differences have treatment implications and may impact on a child's pragmatic functioning and future outcomes. A primary aim in research and investigation relating to children with disabilities is to understand how disability influences functioning so that appropriate and effective intervention strategies can be developed. If the type of disability a child exhibits differentially impacts on socialization, then that information should help practitioners to more precisely define problems and implement appropriately targeted interventions to improve the children's social performance and long-term outcomes.

The Sample

For this investigation, teacher rating scales measuring social adaptation (Vineland Adaptive Behavior Scales; – henceforth, the Vineland; Sparrow, Cicchetti, & Balla

Scales, 2006) and social skills (The Social Skills Rating System – henceforth the SSRS, Gresham & Elliot, 1990) were utilized in order to collect information about adaptive behavior and social skills of preschool children with disabilities in mainstream classrooms between the ages of 36 and 59 months.

A distinguishing characteristic of the sample used in this study is that it includes only children with disabilities and compares their social adaptation and skills only to one another and not to a typically developing peer reference group. This approach was chosen for this study since past research has generally compared children with disabilities to children who are typically developing. The goal in this investigation was to compare children with disabilities to one another in order to isolate how specific types of disabilities differentially impact social functioning. The chosen approach allowed specific disability characteristics to be isolated and compared to one another according to their relationship to social functioning specifically in children with disabilities. This information was collected in the hope that it might be applied practically to development and implementation of appropriate intervention and support programming and lead to improved social outcomes for this population. However, the lack of non-disabled children in the study also had some disadvantages, which will be addressed in the sections that follow as relevant.

General Findings on the Vineland and SSRS

A point worthy of mention prior to considering the research hypotheses relates to the mean Vineland and SSRS scores. Both of the teacher ratings scales used in the study utilize standard scores with a mean of 100 and a standard deviation of 15, indicating that scores ranging between 85 and 115 fall into the "average" range of functioning. In this

sample the mean scores for all the disability types are in the average range of functioning. This indicates that while the consensus in the research literature is that children with disabilities generally tend to have weaker social skills and adaptive functioning than children who are typically developing (Gresham, 1982), the mean score within the group of participants for this investigation fell within the average range for the general population, a result that was unexpected.

A possible explanation for these results may relate to the population characteristics of this group. Participants for this study were recruited from among children with disabilities enrolled in mainstream classes with supportive therapeutic services. Placement in such settings suggests a reasonably high level of pragmatic functioning likely indicating that they may not be so impaired relative to same age peers. Their relatively strong functioning may distinguish them from children with disabilities enrolled in segregated settings. These results imply that children whose impairments are mild enough to allow them to go to school in integrated learning settings with related support services only, may not exhibit aggregate impairment in social adaptive functioning or social skills in comparison to most children their age.

Much previous research also examines specific social skills such as efficacy of social bids (Guralnick & Groom, 1987), quantity of social interactions and play repertoire (Beckman & Kohl, 1987), or rate of social play (Lieber, 1993) rather than looking at social adaptation or skills in aggregate. This study examined composite social adaptation and skills rather than specific or individual social behaviors or social skills. It is possible that these children do have specific social skills that are deficient and that this deficiency is associated with their specific disabilities, however, as a whole, for children with

disabilities in mainstream classes, their total repertoire of social adaptation and skills fell within the range of expectations for peers their age. A suggestion that may be made as a result of this research is for composite assessment of social adaptation and skills to be done for children with disabilities in mainstream classrooms using standardized teacher rating scales and then to conduct item analyses of these scale results in order to determine specific problem areas that might be worthy of addressing in the context of intervention.

These results also may reflect previous research findings that enrollment in learning contexts with typically developing peers has been found to result in better social outcomes when compared to enrollment in segregated learning contexts (e.g., Baker, Wang, & Wahlberg, 1994; Beckman & Kohl, 1987; Gresham, 1986; Guralnick, 1986, Guralnick & Groom, 1987). The results that fall within the average range in this group may reflect a positive impact of mainstream classroom placement on the children's social adaptation and social skills.

A final possibility is that these findings reflect the outcome of therapeutic intervention. All children enrolled in this study were receiving one or more therapeutic services to address their needs based on the individual characteristics of their disability type. The intervention that the children have received may have a positive influence on their social performance such that their social scores are within the average range for children their age.

Explanations as to why the mean scores for each group of children fell into the average range for the general population are speculative though because measures of social adaptation and skills were not specifically collected for the children prior to

receiving intervention or enrolling in their mainstream classrooms. Therefore, it cannot be determined with certainty which of the above explanations is most feasible.

Socio-Demographic Variables

All analyses of study hypotheses were conducted while controlling for several socio-demographic variables: age in months, ethnicity and SES. There was no correction for gender, as it was not significantly correlated with either Vineland score or SSRS score. There was also no correction for teacher's age, experience, and education level as these factors were also not significantly correlated with the SSRS or Vineland scores.

Looking first at the sociodemographic variables, in this study there was a relationship between the children's age and their social skills scores as measured by the SSRS but not with their social adaptation scores, as measured by the Vineland. This result may be explained by the method in which the Vineland scoring norms were developed. On the Vineland, children's raw scores are compared to peers of similar chronological age by three-month intervals and then standardized relative to peers at ages 3.0-3.11 months then again at 4.0-4.11 months, thus correcting for age differences in the calculation of the children's scores. In contrast, the SSRS utilizes a continuous measurement scheme where all children ages 3.0-4.11 years were compared to one another so that as children got older in this group, there was an effect for their age on the mean social skills score.

Previous research has supported the expectation that as children get older, their social and play skills become better developed and more complex (Parten, 1932; Westby, 2000). As such, the increase in social skills scores as the children in the sample got older resulting in a positive correlation between mean scores and age is logical. However, the

mean Vineland score did not increase significantly depending on the children's age, likely related to the fact that social adaptation is typically referenced according to peers of similar age and not a measure of skills as they progress along a developmental continuum.

Another possible explanation for the increase in scores as the children got older relates to the "Social Familiarity Effect" (Jenkins, Speltz & Odom, 1985). Previous research has found that children tend to play more often with peers with familiar characteristics (Jenkins et. al.) and engage in more social play with familiar rather than with unfamiliar peers (Doyle, Connolly, & Rivest, 1980; Stockinger-Forys & McCune-Nicholich, 1984). Additionally, children in integrated classroom placements have stronger social and play skills during interactions with peers and increased overall sustained social participation relative to peers in segregated placements (Baker, Wang & Wahlberg, 1995; Guralnick, 1986). The more time spent in the context of the integrated classroom setting may have resulted in increased comfort engaging both typically developing peers and peers with disabilities and overall provided social experience positively impacting social skills, as measured by the SSRS score. Indeed, in previous research Parten (1932) found that over the course of a school year, children come to know each other better. This increased familiarity results in increased social play over time having a positive impact on play and social skills. Thus, children with more experience in a school setting (i.e., older children) should logically be more comfortable and confident engaging peers in play and have better social skills than children with less experience (i.e., a younger child). Thus, the older children may have received higher SSRS scores since, having been with the same group of children in school in an

integrated placement for a longer time than were the younger children, they had more familiarity and comfort with peers and played with them more increasing their chance to develop social skills via experience. This increased social experience should logically result in increased familiarity with peers, relative to younger children who had less experience in the school setting and therefore less social familiarity. These factors may also help account for the age effect that was noted for the social skills scores in the sample.

Ethnicity and SES were also factors that were significantly correlated to the scores on the Vineland and SSRS. In this group, ethnicity and SES were related to one another in that children who were non-white were more likely to be of lower SES than children who were white. Contrary to expectations, however, non-white and lower-SES children tended to have higher scores on the Vineland and the SSRS than did white and higher-SES children. These results are counterintuitive as children of a lower SES generally are more at risk than children with a higher SES (Gresham & Elliot, 1990; Sparrow, Cicchetti, & Balla, 2006).

In trying to explain these findings, it may be noted that the study participants came from private preschool settings as well as Universal Pre-Kindergarten programs and subsidized day care. The private preschools were generally programs associated with community organizations that provided private academic preschool placement where parents generally pay for their children to attend the school. Generally, these programs did not have additional supportive staff beyond what was necessary for the daily workings of the school. In contrast, the Universal Pre-Kindergarten programs would be programs where the hours or a portion of the hours would be funded by a government

organization with supportive services included within the program to facilitate preschool attendance for children whose families meet specific eligibility guidelines, primarily related to income or SES.

It is possible that the parents of children with disabilities who were of a higher SES possessed the resources to facilitate placement of their children with disabilities in regular education settings with supportive services more so than did the parents of children of lower SES. Notably, children who were white and of higher SES were more likely to be receiving occupational therapy and somewhat more likely to be receiving physical therapy, indicating that they had more complex disability characteristics than children who were non-white and of lower SES. This might help understand the unexpected negative correlation between SES and ethnicity**.**

It is also possible that the Universal Pre-Kindergarten and day care programs which enrolled the students had more resources at their disposal (e.g., screenings, disabilities coordinator, licensed teachers, regular teacher continuing education requirements, etc.) to identify children with disabilities than did the private preschools. The private preschool programs that did participate generally were programs where the school did not have additional resources beyond the classroom teachers, classroom assistants or the preschool directors. In contrast, the schools that were not private did have additional support staff, such as an intake disabilities coordinator who would assist with the referral, evaluation, and approvals of accessing services for children who were referred for evaluation. In addition, the private schools do not require formal screening assessments of each student whereas the non-private placements that receive funding from sources other than parental fees were more likely to have the teachers conduct

individual pupil progress report assessments where it was more likely that difficulties might be identified. Because of these additional resources, children with less severe impairments (e.g. only a speech delay or only a fine motor delay) may have been more likely to be identified and receive intervention in those contexts than were children in the private preschool placements where there were fewer supportive resources for the program (e.g., no disabilities coordinator or screenings available). For example, one of the Universal Pre-Kindergarten programs that participated in the study was associated with a special education preschool that provided the classrooms with support personnel and screenings to identify preschoolers with disabilities as well as regular continuing education courses for the staff. In addition, the related service therapists for the children generally provided therapeutic services on site and had regular opportunity to visit the classroom and interact with the classroom teachers. Perhaps children with milder impairments were more likely to be identified and referred for intervention in settings such as these due to the additional resources and support available to the classroom teachers. These additional supports may have rendered these classroom teachers more savvy and knowledgeable about criterion that render referral for related services appropriate. These additional resources might have facilitated increased teacher awareness that allowed the teachers to identify preschoolers with more subtle difficulties who might otherwise have gone unnoticed. Unfortunately, no data were collected on the specific placement and funding characteristics of the individual program on a per participant basis (Universal Pre-Kindergarten program or subsidized day care), so these explanations cannot be tested in the current research.

Teacher perception may also have influenced the results in a manner that would have caused the children of lower SES to have higher scores than the children who were of higher SES. The manner in which the teachers rated the students may have been influenced by the children's respective classroom peer groups. It is possible that the teachers in classes where the students were of higher SES had higher expectations for social adaptation and competence for their students than did the teachers of the children who were of lower SES. These expectations may have caused the teachers to perceive the children with disabilities of higher SES as having a more problematic set of social characteristics than did the teachers of children who were in a setting where a higher proportion of pupils were from a lower SES background. In a review of the literature between 1991 and 2002 on behavior problems in low income children, Qi and Kaiser (2003) found that behavior problems have been noted in 16-30% of children in Head Start classes. Most children in Head Start classes are generally of lower SES due to income eligibility requirements for enrollment. In a transactional model proposed by the authors, social skills deficits was one of the risk factors associated with behavior problems (Qi & Kaiser, 2003).

It is possible that because there appears to be a higher rate of children with behavioral problems in educational contexts that specifically service children who are of lower SES and because there is a large contingent of children who are of lower SES who exhibit behavior problems which are associated with social skills deficits, teachers of lower SES populations have different normative social skills and competency expectations for their students than do teachers of children in higher SES settings. This may also be a factor that may help to account for the trend of the lower SES students to

have higher scores than the higher SES population. It may be that because there is more likely to be a larger percentage of children with behavioral problems in their classes in the first place that teachers of lower SES children have different expectations from teachers of higher SES students giving them a higher threshold for the characterization of behavior problems and resulting in a likelihood of higher ratings of social competence than teachers who are likely to have smaller cohorts of children in their classes with behavioral problems.

Hypotheses 1, 2, 4a and 4b

Turning now to the hypotheses, the study included six major hypotheses. Two sought to look at how the number of disabilities a child has influences social adaptation (H1) and social skills (H2); two proposed that type of disability influences social adaptation (H4a) and social skills (H4b) differentially; The final two address the relationship between Vineland and SSRS scores, either in general (H3a) or after controlling for type of disability (H3b).

The results of Hypothesis 1, the relationship between the number of disabilities a child had and the child's adaptive social functioning as measured by the Vineland, and Hypothesis 2, the relationship between the number of disabilities a child had and the child's social skills as measured by the SSRS, were both significant and indicate that as the number of disabilities a child exhibited increased, social adaptation and skills were weaker. However, while these results seem to support Hypotheses 1 and 2, they are tempered by the outcome of the two hypotheses investigating the relationship between

the type of disability the child exhibited and the child's social adaptation (H4a) and social skills (H4b).

There were five disabilities identified as present among the participants of this study: externalizing behavior problems, internalizing behavior problems, motor problems, learning disabilities/cognitive problems and language/communication problems (See Appendix C). The analysis investigating H4a found that only externalizing behavior problems were significant in predicting the children's adaptive social functioning. The analysis investigating H4b yielded comparable results finding that children with externalizing behavior problems had weaker social skills than children with other types of disabilities. Thus, while the number of disabilities children exhibited increased, the children's social adaptation and social skills scores went down, this result was influenced by the type of disability the children had, specifically, whether or not the children exhibited externalizing behavior problems, not the number of disabilities that the child exhibited per se. A separate analysis found that after controlling for externalizing behavior problems, number of disabilities was not significant in predicting either Vineland or SSRS scores.

It is possible to understand these results in the context of previous research specifically relevant to the characteristics of children with externalizing behavior problems. Achenbach and Rescorla (2000) used factor analysis to differentiate externalizing behavior problems from other emotional and behavior problems. They indicated that children with disruptive behaviors such as aggressive, inattentive and oppositional defiant problems qualified as having externalizing problems. Children with externalizing behavior problems often exhibit self-control skills deficits that cause peers

to judge them as being socially undesirable resulting in rejection (Gresham, 1986). When children are rejected by peers, the amount of time spent in social play is reduced (Lieber, 1993; Parten, 1932). Participation in social play contexts is recognized as critical towards the development of social skills since children need to have social experience in order to acquire and practice the skills necessary to sustain social interactions (Guralnick, 1986; Michelson & Mannarino, 1986). Previous research has supported the notion that children who are more socially competent tend to have more social experience than children without knowledge of how to interact socially (Gresham, 1986; Guralnick, 1986; McFall, 1982; Michelson & Mannarino, 1982).

The children with externalizing problems in this study may have been more likely to be rejected by their peers thereby reducing their opportunities for social participation. With less social participation, they would have less social experience thus less opportunity to develop social skills or the discrimination requisite for the judgment of social nuances needed to adapt in their relative social context, resulting in weaker social adaptation. Limitations in social experience as a result of peer rejection due to undesirable behavior is a possible explanation for why the children with externalizing behavior problems had weaker social adaptation and skills than children with other disability types in the sample.

Poor self-regulation and deficits in behavioral inhibition and control are often characteristic of children with externalizing problems. In particular, demanding that needs be met with immediacy and impulsivity are specifically associated with externalizing behavior problems in preschoolers (Achenbach & Rescorla, 2000). It is possible that the behaviors associated with externalizing problems are such that they have

a specific differential impact on social competence and therefore social adaptation. McKown, Gumbiner, Russo, and Lipton (2009), also using the SSRS, identified that children with weaker self regulation were rated by parents and teachers as being less socially competent. The self control deficits associated with behavioral problems, including ability to sustain attention, make controlled appropriate judgments and delay gratification, influence social outcomes were associated with weaker social competence across the childhood age spectrum (McKown, et al. 2009). Thus, the identified social competence deficits associated with behavioral problems are consistent with other research findings that relate behavioral self regulation to social outcomes.

Previous research has also demonstrated that children with disruptive behavior problems are also more likely to exhibit deficits in their knowledge of how to join or enter social situations unobtrusively (Guralnick, Hammond, & Connor, 2003). Children with disruptive joining behavior are more likely not just to be rejected but to also be excluded by peers in social play situations (Lieber, 1993) which leaves them more likely to remain unoccupied during social play (Guralnick et al.; Lieber). Lack of occupation during play time would also result in decreased opportunity to develop an understanding via natural experience of behavior subjectively appraised as desirable/undesirable in social contexts (Stokes & Osnes, 1986; Wolf, 1978). Conversely, it has also been found that when children with disabilities respond aggressively to social initiations, peers were less likely to engage them again in the future, also reducing their social participation (Celiberti & Harris, 1993; Ronning & Nabozaka, 1993).

This research can further help to explain the results of this study. The children in this study with externalizing behavior problems may be different from the children with

other disabilities as disruptions in social entry strategies or aggressive responses to social initiations of others may be factors that contribute to the limitations of their social experience impairing their ability to acquire context-valued social behavior. As social adaptation is contingent upon possession of the social competence to apply social skills appropriately, children with externalizing behavior problems may be more likely to be disruptive and aggressive relative to children with other disability types interfering with their ability to enter social situations appropriately. Indeed, Kohler and Fowler (1985) specifically found that externalizing behavior problems were associated with lack of an appropriate peer response repertoire limiting reciprocity with peers. It is logical then that their social adaptive behavior and social skills are weaker than those of peers with other types of disabilities.

It is also possible that the severity of the disability characteristics of the children in this study with externalizing behavior problems contributed to the paucity of their social adaptation and social skills relative to children with other disability types. The children in this study with more complicated disability characteristics tended to have externalizing behavior problems as well, and therefore were more likely to be receiving multiple therapies, including physical therapy and occupational therapy. In order to socialize successfully, children require a repertoire of skills in conglomeration that relate to multiple domains of functioning (Gurlanick, 1986). Examples of such skills include being able to maintain a conversation (Garvey & Kramer, 1989; Griffin, 1984), to sustain play interactions (Dunn & Dale, 1984), and to maintain social and communicative reciprocity when interacting (Celiberti & Harris, 1993; Goldstein & Strain, 1988; Ronning & Nabozaka, 1993). It may be that because children with externalizing behavior

problems were likely to have other disabilities in addition to their externalizing problems that, in conjunction with other problems, left the children with a dearth of essential social interaction tools. As such it may be that because children with externalizing behavior problems in this study were more likely to have other disabilities as well, deficits in multiple domains of functioning render them with fewer socialization skills and fewer personal "backup" resources to allow them to compensate for their deficits so that they can socialize successfully. Children in the study who did not have externalizing behavior problems had less complicated disability characteristics, which may have allowed them to apply other personal skills and resources to assist them in compensating for their difficulties in social situations. It appears then that for children with disabilities in mainstream classrooms, having externalizing behavior problems may be associated with having a more complicated disability set which is thus related to weaker social adaptation and skills whereas children without externalizing problems are less likely to reach a threshold of impairment impacting on their socialization compared to peers with externalizing problems.

It is also important to note that while externalizing behavior problems emerged as the only specific disability among those measured in this study to influence the adaptive social functioning and social skills of the participants in a statistically significant manner, the results of the analysis concerning the other disability types suggest that, pragmatically, motor problems impact social adaptation and skills compared to other types of disabilities as well, although not to the extent that externalizing behavior problems do. This difference was again, as with the Vineland score, not statistically significant after controlling for sociodemographic variables and disabilities. It is

reasonable that one may also take away from this study that further monitoring and support for children with motor problems in addition to those with externalizing behavior problems relative to children with other disability types may be indicated.

Hypotheses 3a and 3b

Hypothesis 3a proposed that teacher ratings of adaptive socialization, as measured by the Vineland, would be related to teacher ratings of social skills, as measured by the SSRS. Hypothesis 3b proposed that the strength and nature of the relationship between the two would vary depending on the type of disability that a child exhibits. Hypothesis 3a was confirmed; social skills were highly correlated with social adaptation. However, Hypothesis 3b was not supported. The relationship between the SSRS and the Vineland was not affected by a child's type of disability (and, in particular, not by whether or not the child had externalizing behavior problems).

These results are interesting as they indicate that there is a relationship between social skills and social adaptation so that children with stronger measured social skills are more likely to have better adaptive social functioning. On one level, this is a logical outcome since it is unlikely that a child with poor social skills will demonstrate well developed adaptive behavior. Likewise, intuitively, we would expect that children with social skills would also use them in context so that they would also display well developed social adaptive functioning.

However, it is not a foregone conclusion that just because one has well developed social skills that one will also exhibit strong social adaptation. Gresham (1986) in a review of the literature on socialization delineates specific types of social problems that interfere with a child's social competence and performance. A child may fail to acquire

social skills or may have deficits in the performance of social skills where the child has the skills but does not apply them appropriately in context. A child may also have self-control deficits where emotional arousal responses interfere with acquisition of social skills and self control performance deficits where an emotional problem interferes with the use of already acquired social skills in a contextually valid manner. Emotional arousal responses can relate to emotional inhibition (i.e., internalizing problems) or excess (i.e., externalizing problems). Social competence, or the ability to render judgments about how to apply one's acquired social skills in a context relevant and environmentally acceptable manner, is essential in order for a person to be well adapted socially (Gresham & Elliot, 1984; McFall, 1982). Thus, it is clear that when we look at socialization we must understand not just if social skills are present but if the child is able to use his or her acquired social skills in order to be socially well adjusted in a real life situation.

If the results of Hypotheses 3a and 3b are explored in this context, it can be understood that the children with stronger social skills had stronger social adaptive behavior regardless of the type of disability that the child exhibited. This suggests that as the children acquired social skills, they also used them so that their social adaptive functioning was enhanced. It is possible that acquisition of the social skills coincided with their use in context so that the skills were at once learned and "valued" or recognized as eliciting positive responses from peers and became "entrapped" (McConnell, 1987). Entrapment, or maintenance of a socially valuable skill via natural social reinforcement through enhanced peer interactions (McConnell, 1987), is often an intervention goal when working with children with social deficits. However, it also

occurs naturally in day to day contexts where experience teaches children to understand which social skills to value. In addition, the age effect that was noted on these results suggests that the older the children, the stronger the relationship between their social skills and social adaptation, supporting the notion that social experience may have provided the necessary familiarity and comfort to allow children to hone skills over time and use them so that their social adaptation was enhanced as well.

Considering the strength of the relationship between externalizing behavior problems and mean scores on measures of social skills (SSRS) and social adaptation (Vineland), it was interesting that having externalizing behavior problems did not influence the relationship between the scores (H3b), especially given that social skills performance deficits are often seen in children with externalizing behavior problems. It may be that children with externalizing problems who are high functioning enough to be in an integrated class are less likely to exhibit self-control performance deficits impacting on the use of their acquired skills so that their social adaptation keeps pace with the skills they actually have. It is important to note once more that the children with externalizing problems did have significantly weaker social skills and adaptation than children with other disability types supporting the notion that disruptive behavior interferes with acquisition of social skills and adaptation, especially relative to other types of disabilities, but that the externalizing behavior problems may not have interfered with the children's application of their skills once the children had them. Thus, the relationship between social skills and social adaptation scores in the children with externalizing problems was no different than the relationship between these scores for children with other disability types.

It is also important to note that the correlation between the Vineland and SSRS scores was extremely high (r=.889) suggesting that even though the Vineland purports to measure social adaptation and the SSRS purports to measure social competence, that in reality the constructs being measured by each are not necessarily mutually exclusive of one another. It is possible that behaviors identified on the Vineland as being related to social adaptive skills are similar conceptually to behaviours identified on the SSRS as being consistent with social competency. Such similarity may be the result of how raters interpret the questions suggesting that the questions on both measures may result in inferences and interpretations leading to equivalence in the impressions of the content of the questions by the teacher raters, It is possible that the high correlation between the two measures does not just indicate a high rate of application of acquired social skills in context by the children who were rated, but perhaps an overlap in the definition and classification of the constructs that these two rating tools purport to measure. It is therefore important to understand that even though social adaptation appears so strongly related to social competence, it is possible that the manner in which these two constructs are measured are closely related because behaviours associated with both are not necessarily mutually exclusive of one another. Results of these measures may reflect a consistency in perception between these two constructs that fails to adequately discriminate one from the other in the context of assessment. Future research may focus on more effective discrimination of these two constructs so that the manner in which a child's social skills and adaptation are evaluated can more effectively be distinguished thereby allowing for better identification about where specific difficulties lie, in the

acquisition of the skill or in the ability to apply that skill appropriately and effectively in a context competent manner.

Summary

Socialization is a crucial component of a child's developmental repertoire. Children with disabilities have been identified as being at particular risk for socialization problems, further exacerbating their difficulties. Much has been done in the past to explore the relationship between social deficits in children with disabilities relative to typically developing peers; however the manner in which specific types of disabilities impact on socialization in children with disabilities relative to one another has received little attention. Gaining an understanding of that relationship is important because it could facilitate development of more appropriate and targeted intervention strategies to address socialization difficulties in a disability-specific manner.

This study examined social adaptation and social skills relative to type of disability among preschoolers with disabilities enrolled in mainstream classes. It was interesting to note that the mean scores for all disability types fell within the general population mean, an unexpectedly strong result. While these strong scores are difficult to explain without a normative reference group in the sample and without scores on these measures that reflect the children's social functioning prior to beginning intervention or prior to mainstream classroom placement, it is possible that such results reflect that preschoolers with disabilities enrolled in mainstream classrooms may have higher pragmatic social functioning than preschoolers in segregated settings. It is also possible that deficits in specific social skills often identified in children with disabilities do not necessarily result in aggregate social impairment relative to normative age expectations.

The sociodemographic variables of age, ethnicity and SES were found to be significantly related to the study's results. Age was found to be significantly related to

social skills scores, which may be accounted for by the increased social experience associated with enrollment in school, increased familiarity with peers leading to increased social interactions, and increased comfort participating in social contexts, all associated with children getting older. Past research has associated externalizing behavior problems with specific socialization difficulties, including interfering with the acquisition and use of acquired social skills.

In this sample, children who were of a lower SES actually had higher social adaptation and social skills scores than children of a higher SES, a result that ran counter to expectations. Also, children who were non-white had higher scores than children who were white. It is possible that parents who are of a higher SES have more resources that enable them to more easily maintain their children with more severe disabilities in mainstream placements than parents who are of lower SES. It may also be that the educational programs for children who are of lower SES have additional support resources that enable them to better identify and refer children with more mild disabilities for intervention than teachers in private educational placements.

When the social adaptation and skills of children with disabilities were compared according to the number of disabilities a child had (H1 and H2), as the number of disabilities a child exhibited increased, social adaptation and skills decreased. When disability types were compared (H4a and H4b), externalizing behavior was shown to be significantly related to difficulty with social adaptation and skills, more so than other types of developmental problems. Motor problems were also found to be somewhat associated with social adaptation and skills deficits, though not to a statistically significant extent once sociodemographic factors were taken into account. Social skills

scores were found to be strongly related to social adaptation scores reflecting that once children had the social skills they used them. This finding did not differ depending on the type of disability that a child exhibited.

Past research has associated externalizing behavior problems with specific socialization difficulties, including interfering with the acquisition and use of acquired social skills and rejection by peers. It is possible that children with externalizing behavior problems are rejected by peers more often than children with other types of disabilities, thereby inhibiting their opportunities to have adequate experience with social play. This resulting lack of experience may diminish the opportunity for children with externalizing behavior problems to make progress in their social adaptation and skills. It is also possible that the impairment in social reciprocity as well as peer initiation and response repertoire deficits associated with externalizing behavior problems exacerbate the social difficulties of these children more so than children with other disability types. Since children with more disabilities in this sample were also more likely to have externalizing behavior problems, the more complicated constellation of impairments associated with more disabilities may also have resulted in the children with externalizing behavior problems having fewer compensatory resources to assist them with their socialization relative to children without externalizing behavior problems, further exacerbating socialization challenges.

When the relationship between social adaptation and social skills was compared, it was found that the scores on the two measures were highly correlated indicating that the children's social skills were strongly related to how well they adapted socially and that this relationship held up regardless of the disability type. These results indicate that

at whatever level the children acquired skills, they also applied these skills. This suggests that social skills performance deficits may not necessarily bear a differential impact according to disability on the social performance of higher functioning children with disabilities enrolled in mainstream classes.

Limitations and Future Directions

While this research yielded some interesting results, there were several limitations to this study that require that the results be interpreted with appropriate caution.

The small sample size of this group was one limitation in this study. A larger sample size may have yielded results that were less ambiguous in relation to other disability types, especially in relation to children with motor problems. It is possible that in a larger sample size than in this study, motor problems might have been identified as having a statistically significant relationship to both social adaptation (Vineland scores) and social skills (SSRS scores) when controlling for sociodemographic variables. In particular, previous research has demonstrated that children with motor coordination problems have difficulty sustaining social play in activities that require motor coordination, such as running and playing ball (Missiuna, Gaines, & Soucie, 2006), and that they have difficulty keeping up with peers during active play because they lack the necessary skills to execute requisite motor tasks (Gallahue, 1989). In addition, Kristenson and Torgenson (2008) found that 11- and 12-year-old children with social anxiety disorders had higher rates of motor problems than children with other psychiatric disorders and children with no disorders at all. While most of the previous research on children with motor problems relates to those in elementary school, it may be that in a larger sample size motor problems would emerge as significantly associated with social adaptation and skills deficits, though maybe not to the extent that externalizing behavior problems appeared related to those issues. Given that previous research has demonstrated that older children with motor problems are at risk for social problems, more extensive investigation on this topic is indicated. In the meantime, in light of the previous research

and the current near statistically significant results, one may suggest that children with motor problems enrolled in mainstream classrooms, would likely benefit from support to enhance their social adaptation and development of social skills within the context of the classroom and therapeutic environments.

The lack of non-disabled children as a reference group was also a limitation in this study. All participants in the study were children with disabilities enrolled in mainstream classroom placements. Inclusion of typically developing children within the participant group would have provided a normative reference group by which to better understand and interpret the results of the investigation and understand how the social adaptation and skills of the participants with disabilities compare to the norm for typically developing preschoolers rather than just to each other.

It is also problematic that preschoolers with disabilities enrolled in non-mainstream educational settings were not included within the participant group because this did not enable comparison between preschoolers with disabilities enrolled in mainstream classes and those enrolled in segregated classes. An unexpected finding in this investigation was that the children's mean social adaptation and social skills scores fell within the average range relative to normative population age expectations. Given the vast research demonstrating that children with disabilities tend to have weaker social functioning in many areas than do children who are typically developing, it was surprising that the mean scores for all disability types in the study fell in the average range rather than falling below the average range relative to normative age expectations. As indicated previously, it is possible that preschoolers with disabilities enrolled in mainstream classes, such as those in this study, have better social adaptation and skills

relative to preschoolers with disabilities in more segregated settings thereby influencing their social adaptation and skills scores. Future research comparing teacher ratings of social adaptation and social skills in children with disabilities enrolled in mainstream classes and those with similar disabilities enrolled in segregated classes as well as to typically developing peers in mainstream classes might serve to clarify the unanswered questions raised in this study and further help distinguish variations in functioning found in children with disabilities not just according to the disability type but also according to the disability's severity. Such information should also prove valuable towards designing and implementing appropriate interventions.

Another study limitation was a lack of contextual information that was available regarding the relative classroom settings of the study participants. Data were not collected regarding the number of total students in each participant's class or the number of other students in the same class with disabilities. This information might have been helpful in interpreting the teacher's ratings. Class size or the proportion of disabled to nondisabled students in an individual classroom may be factors that could impact on social adaptation and skills of children with disabilities. When an attempt was made to collect information further on about the class size or the number of individual students in each class who were classified as preschoolers with disabilities, the school settings indicated that that information was not readily available or it could not be supplied with accuracy. The schools all indicated that not every parent chooses to share information about a child's disability status or whether the child is receiving related services so that school information about the total number of children receiving services within a specific classroom population could not be considered totally definitive. Preschoolers with

disabilities regardless of the type of educational setting that they are in, access related services through the Committee on Preschool Special Education (CPSE) via direct parent referral. While a school may be helpful and support a parent through the process, the school's involvement is not a requirement. Therefore, none of the schools felt comfortable indicating definitively how many children in each class received related services as there may have been children in each group who were receiving related services unbeknownst to the school staff. Future studies should attempt to take contextual information into account by identifying number of students in each individual participant's class by asking the teacher at the time of the completion of the study questionnaire and attempt to collect data about prevalence rates of disabilities within an individual classroom context so that that information might be considered in interpreting data that relate to children's social adaptation and skills.

Interpretation and generalization of results is also challenging because the children's social skills and adaptation were investigated only after the children had already begun attending mainstream classes and receiving related therapeutic services. The scores for the participants in this group may have been within the average range and stronger than what one would expect for children with disabilities because the participants were already in a learning environment and receiving services that might have positively impacted on their social adaptation and skills. Since many of the participants in this study had already been enrolled in school for a while, they likely had the social experience commensurate with increased familiarity with typically developing peers which likely positively influenced their social adaptation and skills. Future research might also compare scores for preschoolers with disabilities at the time of initial referral,

prior to beginning to receive services in accordance with each child's individual needs, and after a period of intervention to determine what the impact of intervention is on socialization over time. Where possible, though somewhat more difficult to achieve, future research might also look at functioning of children with disabilities prior to enrolment in a mainstream classroom placement or compare social adaptation and skills longitudinally at the start of the school year and then at its end to determine how school placement influences socialization over time according to disability type. This might shed some light as to possible effects of intervention and classroom placement depending on disability type, particularly the types of therapy most related to improved outcomes for the children. It is possible that for the research participant group in the current study, intervention and classroom placement had an impact on the social adaptation and skills of the children so that these average results are reflecting positive effects of these variables. Future research could help to clarify these results.

In addition, information about the age at which each child began receiving each service and the duration for which the services were received may also shed light on the impact of intervention on social functioning according to disability type. Since records for related services received prior to the age of three are not necessarily included within a preschooler with disability's informational file, it could not be determined with certainty via archival review which children did or did not receive Early Intervention services or the age (year and month) at which initial receipt of services began. This also limited the investigation to the services each participant was currently receiving and excluded past intervention services that the child may have received but were discontinued due to progress that rendered those services no longer necessary. For example, archival review

might not necessarily provide data about a child having had speech therapy in the past if the child was discharged so that that intervention was no longer deemed necessary. In future studies, data should be collected via asking the parent directly within the parental demographic questionnaire, the age and month at which a child began receiving each therapeutic intervention the child is currently receiving as well as about therapeutic services previously received and then discharged from in order to ascertain the duration for which participants had been receiving each service. This information would help to understand the extent to which the amount of time a child is receiving services differentially impacts on functioning in the domains of social adaptation and social skills.

A final shortcoming in this study relates to the manner in which the children's social adaptation and social skills were assessed. In this study, domains of functioning were investigated in the aggregate as opposed to looking at individual skill sets or specific socialization abilities and behaviors. Many of the earlier investigations that relate to children with disabilities look at specific abilities and skills within the socialization domain rather than at social functioning in aggregate. This research was heartening in that it suggests that for many children with disabilities who are high functioning enough to be enrolled in mainstream classes, overall social adaptation and skills may not differ significantly from what would be expected on average in the general population so that perhaps these children do not stand out as much as we might expect when it comes to their overall socialization relative to classroom peers. However, it is still probable and likely that they do have individual skills or areas of functioning that are problematic and negatively impact their classroom social performance and relationships with peers. Conducting item and factor analysis using aggregate measures of social

functioning might help to identify specific behaviors and problems associated with different types of disabilities and understand how those relate to social performance overall, especially if a normative reference group were included in the sample. In the future, analysis of individual item response patterns especially in relation to disability type might help to further clarify specific social deficit behaviors and categories in children with disabilities according to their disability type, thereby further enhancing the capacity to conduct more specific and targeted interventions to address difficulties within the socialization domain.

The findings related to ethnicity and SES where lower SES, non-white children had stronger scores and were less impaired than were children who were of higher SES and white, were also unexpected. It would be interesting to conduct further investigation to determine if there is a difference in the identification, referral, evaluation, and placement procedures for children from private preschools and day care centers, where children of higher SES were more likely to be enrolled as students, as compared to children from Universal Pre Kindergarten and subsidized day care, whose students were more likely to be of a lower SES and non-white. It might also be interesting to further investigate how familial resources, including education level and occupation influence referral for evaluation, classroom placement of children with disabilities and allocation of therapeutic services as these might all play a role in the identification of and allocation of services to preschoolers with disabilities.

Educational Implications

The importance of socialization to the development of preschoolers is widely recognized. Children with disabilities have been found to exhibit deficits in their ability to socialize appropriately relative to age typical expectations which negatively impacts development in multiple ways. This study examined how socialization differs in preschoolers with disabilities enrolled in inclusion classrooms depending on the type of disabilities the children exhibited. Distinguishing how specific disability characteristics differentially impacted on social skills and social adaptation is critical towards the development of appropriate intervention strategies and methods to improve socialization and social outcomes of preschoolers with disabilities enrolled in mainstream settings.

The most critical finding from this research that may be applied within the educational setting relates to the effect of social experience and familiarity. Regardless of the children's disability type, age, and thus experience, influenced social skills development. A strong case may be made to encourage classroom teachers, related therapeutic service providers, and other supportive staff working with children with disabilities enrolled in inclusion placements to promote social participation wherever possible. Participation in social contexts leads to social experience. Social experience leads to increased peer familiarity and increased acquisition of social skills via experiential learning. Structuring the classroom play and social experiences of children with disabilities enrolled in mainstream contexts to promote maximal opportunity to interact and play with peers is likely to provide experiences that will improve social participation and allow the children to learn social skills that will be considered contextually valuable and reinforced via natural social consequences.

In particular, children with externalizing behavior problems had difficulty with socialization relative to children with other disability types. It is important that in light of the social deficits that have previously been identified in children with externalizing behavior problems, particularly difficulty with appropriate social entry and peer response repertoire, children with externalizing behavior problems should be given particular attention when it comes to promoting social experience within the child's social milieu. Aggregate evaluation of social skills and social adaptation characteristics should be conducted to understand where a child stands overall relative to the norms expected within the general population, however, item analysis identifying the specific strengths and weaknesses of the child would be helpful towards individualizing an intervention plan that would concentrate on improving deficit areas, likely social initiation, joining, and response repertoire and skills critical towards establishing and maintaining sustained social interactions with other children. It appears that developing appropriate strategies and direct instruction methods to enhance social experience and familiarity might likely enhance socialization and facilitate acquisition and application of critical social skills in context, especially for children with externalizing behavior problems who are most likely to experience social deficits relative to children with other disability types.

While the social skills scores for children with motor problems were not significantly weaker relative to other disability types after controlling for demographic variables, there is a strong indication that children with this disability type would also benefit from receiving individualized attention that provides ongoing assessment, monitoring, and intervention to promote social participation and experience. Finally, children with more complicated disability constellations due to having multiple

impairments should be monitored to support their social participation and experience as well. In this group, children with multiple impairments were more likely to have externalizing behavior problems. It is important to look at the entire disability constellation picture in order to identify all impairment areas likely to influence a child's resources, especially the resources available to compensate for personal deficit.

It is also fair to suggest that children with disabilities should be provided with supportive contexts to promote social skills acquisition through direct instruction and support for use in specific contexts. This experience should not be left to emerge on its own but an active effort should be made to establish operational conditions to promote this learning in real life environments likely to entrap positive desirable behavior as well as likely to result in conditions that may extinguish undesirable social behaviors, such as aggressive peer initiation response repertories or disruptive joining patterns.

The unexpected demographic results where lower SES children had stronger social outcomes may suggest that practitioners working with children with disabilities be mindful of the resources available to children of lower SES and see what can be done during the process of identification and evaluation to provide an intervention context that is most likely to maintain children of lower SES in the most highly integrated context possible. Conversely, community child find requirements based on Section 504 of IDEA (Appendix A) should be actively extended to promote enhanced identification of children who are enrolled in private community educational settings where resources that promote identification of children with disabilities are not as readily available (and where children of higher SES are more likely to go to school) as those in non-privately funded educational environments where children who are of lower SES are more likely to attend.

For example, community agencies that provide evaluations and related services should develop and provide information about referral and intervention criteria to both parents and teachers in community based schools to enhance identification of children with more mild disabilities who might be likely to benefit from supportive services but are higher functioning to an extent that they might be overlooked. Private programs are less likely to have disabilities coordinators or ongoing teacher trainings to enhance the identification of children with more mild disabilities so that agencies that work within the community already providing services should conduct outreach to promote identification and intervention of children who would benefit from assistance at the earliest possible age.

Finally, it is important that the individuals who work and relate most closely to children with disabilities in schools be provided with the necessary training and support to intervene with the children in a manner that instructs and supports social skills development and adaptation. Related service professionals with specific knowledge about how to enhance social skills and participation in real life social contexts should work with classroom teachers, support staff, and even parents to provide them with instruction on how to maximize socialization development within the children's real-life contexts. It is easy to declare that conditions in classrooms should be established in a way that maximizes the children's social participation so that the children have the experience to gain social skills, but requisite supports must be put into place that will allow that to happen within the children's environment. Ongoing teacher training and a socialization consultation-based model to provide ongoing support to maximize conditions for social participation and adaptation should be implemented within the educational learning frameworks where children with disabilities are mainstreamed. Psychologists, related

service therapists, and other specially qualified personnel should help promote conditions where classroom teachers and other mainstream school personnel know how to establish a framework that promotes and supports enhanced social experiences allowing children with disabilities in inclusion placements to learn social skills and develop social adaptive behaviors to participate in social experiences with their peers to the greatest extent of their abilities and realize their fullest potential.

Conclusion

It appears that for children with disabilities in mainstream classrooms, children with externalizing behavior problems have significantly weaker social adaptation and skills than do children with other types of disabilities who are enrolled in mainstream classroom placements when controlling for sociodemographic factors. Children with motor problems also have social adaptation and skills deficits relative to children with other kinds of disabilities; however these issues are not as striking as those associated with externalizing behavior problems, as they fall out of the range of statistical significance once sociodemographic variables were considered. In addition, as the number of disabilities a child exhibited increased, social adaptation and skills were weaker. However, upon further analysis it was revealed that the presence of an externalizing behavior problem, not number of disabilities, influenced socialization. Practically, the results of this investigation strongly support the notion that socialization supports should be provided within the context of intervention for children with externalizing problems in order to maximize the positive impact of intervention. Inclusion of socialization support for children with motor problems as well may also be suggested based on these results. In addition, maximizing opportunities for children with all types of disabilities to participate in social experiences seems to be of great importance in the development of social adaptation and skills. It appears that social experience, especially with the same typically developing peers over time, provides the opportunity for children with disabilities to enhance their social participation through familiarity, comfort with peers, and knowledge and understanding of the socially expected repertoire of behavior within the children's relative social contexts.

Appendix A:

Description of process by which a child meets eligibility for classification as a Preschooler with a Disability

Classification of a child as a preschooler with a disability for the purpose of receiving related services from a school district is based on a complete assessment of intellectual, learning, communication, motor, classroom, and social functioning and how a child's functioning in these domains impacts on his or her adaptation in school and community settings (Campbell & James, 2007). According to the Individuals with Disabilities Education Act (IDEA), after a parent signs an initial consent for an evaluation, a review of the child's history and records is conducted and appropriate assessment measures are chosen in order to determine eligibility for classification and appropriate intervention services. Preschool children typically undergo a core psychological and educational evaluation where a psychologist assesses the child's intellectual functioning and pragmatic fund of skills and abilities, and a history is taken of the child's social experiences. If deficits are noted within other domains of functioning (e.g., speech and communication, fine motor, etc.) supplementary evaluations are recommended. These supplementary evaluations typically involve assessment of behavioral characteristics, speech and language or communication skills, gross and fine motor functioning or other areas of concern or need. After a full evaluation is completed, a committee of trained professionals and a volunteer parent of a child with disabilities (who serves as a supportive advocate for the parent or guardian of the child being evaluated) meet with the child's parent (s) or legal guardian (s) as a team to review the test results to determine if the child is eligible for classification as a Preschooler with a

Disability according to the IDEA classification criteria. This committee is called The Committee on Preschool Special Education (CPSE). If the preschooler is determined to be eligible for classification, the team reviews the test results with the parent or guardian to determine the appropriate treatment strategy and approach and to determine what services the child should receive in order to best meet his or her needs (New York State Education Department, 2007).

In order to receive services to address developmental delays and areas of concern, children between the ages of 3-5 are identified globally as preschoolers with disabilities (Individuals with Disabilities Education Act, 2004). Typically, a child between the ages of three through five is considered eligible for services if he or she is experiencing developmental delays in the areas of physical development, cognitive development, communication development, or adaptive development as defined by his or her state of residence and as diagnosed using appropriate methods and instruments of measurement. Identified deficits may not be the result of lack of instruction or of limited English proficiency (IDEA, 2004). Evaluation procedures also take into account if the child does not achieve commensurate with age expectations and if the child's disability characteristics negatively impact on educational performance.

Appendix B:

Identification of 13 Original Categories of Disability Classification in the Individuals with Disabilities Education Act

Under the provisions of IDEA, there are 13 categories of disability according to which a child between the ages of five and twenty-one might be considered disabled and eligible for support. Children who are between the ages of three and five are classified as preschoolers with disabilities without specific distinction according to their disability characteristics. The 13 IDEA categories include:

i. *Autism*

ii. *Deaf-blindness*

iii. *Deafness*

iv. *Emotional Disturbance*

v. *Hearing Impairment*

vi. *Mental Retardation*

vii. *Multiple Disabilities*

viii. *Orthopedic Impairments*

ix. *Other Health Impairment*

x. *Specific Learning Disability*

xi. *Speech or Language Impairment*

xii. *Traumatic Brain Injury*

xiii. *Visual Impairment*

IDEA provides definitions for each category of disability and specifies that in order to meet criteria for classification, a child's disability must impair the child's educational functioning. According to the definitions within IDEA:

- *Autism* is defined as a developmental disability significantly affecting verbal and nonverbal communication and social interaction that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. These symptoms cannot be better accounted for by a classification that relates to Emotional Disturbance.
- *Deaf-Blindness* refers to concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational needs that they cannot be accommodated in special education programs solely for children with deafness or children with blindness.
- *Deafness* means a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification that adversely affects a child's educational performance.
- *Emotional disturbance* refers to a condition that involves inability to build or maintain satisfactory interpersonal relationships with peers and teachers, inappropriate types of behaviors or feelings under normal circumstances, a general pervasive mood of unhappiness or depression, a tendency to develop fears or physical symptoms associated with personal or school problems, and/or

schizophrenia and an inability to learn that cannot be explained by intellectual, sensory, or health factors. Indications must be present over a long period of time and to a marked degree adversely affecting a child's educational performance.

- *Hearing Impairment* means impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but that is not included under the definition of deafness.
- *Mental Retardation* means significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period that adversely affects a child's educational performance.
- *Multiple disabilities* means concomitant impairments (such as mental retardation-blindness or mental retardation-orthopedic impairment but not including deaf-blindness), the combination of which causes such severe educational needs that they cannot be accommodated in special education programs solely for one of the impairments.
- *Orthopedic Impairment* means a severe orthopedic impairment that adversely affects a child's educational performance including impairments caused by a congenital anomaly, impairments caused by disease (e.g., poliomyelitis, bone tuberculosis), and impairments from other causes (e.g., cerebral palsy, amputations, and fractures or burns that cause contractures).
- *Other health impairment* means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that result in limited

alertness with respect to the educational environment and that is due to chronic or acute health problems.

- *Specific learning disability* in general means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Specific learning disability does not include learning problems that are primarily the result of issues relevant to other categories of disability.
- *Speech or language impairment* means a communication disorder, such as stuttering, impaired articulation, language impairment, or a voice impairment, that adversely affects a child's educational performance.
- *Traumatic brain injury* means an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance. Traumatic brain injury applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual, and motor abilities; psychosocial behavior; physical functions; information processing; and speech. Traumatic brain injury does not apply to brain injuries that are congenital or degenerative, or to brain injuries induced by birth trauma.

- *Visual impairment* including blindness means impairment in vision that, even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness.

Appendix C:

Process of Adaptation of IDEA Classification Categories for Disability Categories for the Current Study

For the purpose of this study, the IDEA disability categories of emotional disturbance, mental retardation, orthopedic impairment, specific learning disability, other health impairment, and speech or language impairment, were adapted to establish disability definitions that accurately reflect the type of disability characteristics likely to be representative of preschoolers with disabilities attending mainstream preschool placements. Categories that relate to the IDEA disability criteria of deaf-blindness, multiple impairments, traumatic brain injury, and visual impairment were not adapted for inclusion in this study as such impairments are not typically identified in preschoolers with disabilities enrolled in mainstream classes with related services. Children who meet criteria for classification with a hearing impairment and deafness or autism will also be excluded from the study sample as hearing impairment, deafness, and autism bear significantly different social implications relative to other types of developmental issues. In addition using the NYS Education Department website for a description of the type of disabilities typical of preschoolers receiving supportive services in New York in conjunction with the IDEA disability category definitions and recent publications that deal with assessment and disability classification in preschoolers (Campbell & James, 2007; Mesh & Loeb, 2003) the following disabilities were identified as possible inclusionary categories for this study: *Language/Communication Problems, Motor Problems, Externalizing Behavior Problems, Internalizing Behavior Problems, Learning Disability or Intellectual Deficits.* Identification of study participants who would be best

classified in the Autistic Spectrum Disorder category will be achieved via completion of a separate questionnaire located in Appendix B.

Language/Communication problems refer to issues that relate to the IDEA disability categories of *Deafness, Hearing Impairment,* and *Speech or Language Impairment*. Deficits in functioning that relate to a hearing issue or language impairment that affects educational performance would fall into this category. In addition to including children with hearing deficits, preschoolers with receptive language problems, auditory processing problems, difficulty acquiring language, difficulty using language pragmatically, articulation problems, voice problems, dysfluency, or other speech and language concerns would be classified in this study as having disabilities that relate to this category.

Motor Problems relates to the IDEA disability categories of *Orthopedic Impairment* and *Other Health Impairment.* Children with deficits in their fine motor, visual motor, gross motor, proprioception, coordination, or sensory processing or other deficits that relate to motor functioning would be classified in this study as having disabilities that relate to this category.

According to IDEA, *Emotional Disturbance* refers to a condition that involves inability to build or maintain satisfactory interpersonal relationships with peers and teachers, inappropriate types of behavior or feelings under normal circumstances, a general pervasive mood of unhappiness or depression, a tendency to develop fears or physical symptoms associated with personal or school problems, and/or schizophrenia and an inability to learn that cannot be explained by intellectual, sensory, or health factors. Indications must be present over a long period of time and to a marked degree

adversely affecting a child's educational performance. For the purpose of this study, emotional disturbance was separated into two categories – emotional problems that relate to internalizing issues and emotional problems that relate to externalizing issues. Because internalizing and externalizing emotional problems tend to manifest themselves in such different ways behaviorally and based on the previous review of literature it is believed that children's social functioning will be differentially impacted whether their behavioral and emotional manifestations are of an internalizing or externalizing nature. As a result, these were separated into two different categories for study purposes.

The *Internalizing Problems* category is defined as a child with a high rate of emotional reactivity, anxious behavior, behavior reflective of affective disturbance, somatization, and/or withdrawal. This would include children with difficulty regulating their emotional states, moodiness, emotional volatility, separation anxiety, excessive crying, excessive preoccupation with cleanliness and order, physiological complaints in the absence of reasonable cause, social avoidance behavior or other behavioral manifestations that indicate emotional maladjustment directed inward to a degree that impairs educational functioning. Criteria for internalizing behavior problems were adapted from the Caregiver Teacher Report Form (Achenbach & Rescorla, 2000).

The *Externalizing Problems* category refers to children with attention, aggressive, overactive, oppositional/defiant or other problems that relate to disruptive behavioral manifestations that adversely impact educational functioning. Children with difficulty concentrating, sustaining mental effort, overactivity, poor attention span, frustration tolerance, physical aggression, fighting with peers, uncooperative behavior, and a tendency towards demanding that needs be met with immediacy will be included in this

category. The criteria for externalizing behavior problems were adapted from the Caregiver Teacher Report Form (Achenbach & Rescorla, 2000).

The *Learning Disabled/Intellectual Deficits Category* refers to children with difficulties learning and acquiring pragmatic information and skills. Children who achieved IQ scores that were more than two standard deviations below the mean for normative age expectations would fall into this category. Children who achieved standardized educational achievement test scores that were more than two standard deviations below the mean would also fall into this category. In addition, children who are reported to have difficulty learning and acquiring information and concepts commensurate with expectations for their age and experience relative to normative expectations or expectations for their peer group would fall into this category.

The *Autistic Spectrum Disorder* category would include preschool participants whose records indicate an official diagnosis of Autistic Disorder, Pervasive Developmental Disorder NOS, or Asperger's Disorder by a qualified practitioner. In addition, children whose reports indicate that they exhibit behaviors associated with criteria for an autistic spectrum disorder to a degree that meets the threshold for diagnostic criteria would be classified within this category. If a child does not have an official diagnosis of an Autistic Spectrum Disorder and upon file review an autistic spectrum disorder appears indicated, then a questionnaire that was adapted from the Pervasive Developmental Problems category on the Caregiver Teacher Report Form (Achenbach & Rescorla, 2000) would be completed (Appendix B). Obtained raw scores on this adapted questionnaire of 12 or more for boys and 11 or more for girls, would be classified as falling into the Autistic Spectrum Disorder category for classification

purposes for this study because each of these obtained raw scores on the Caregiver Teacher Report Form constitute the threshold for clinical significance for each of these disorders.

Appendix D:

Disabilities Checklists to be utilized during file review to determine appropriate classification category for study participants

When conducting archival review, use the checklists below to determine which disability classification category a participant should be assigned to.

Any item checked in any problems category indicates that the child manifests issues consistent with categorization into that category of disability for study purposes. If information is not available or specified in the archival data available for review, make a judgment as possible consistent with the information that is available.

Language /Communication problems: (Check all that apply)

Issue: Does the child have:	Check if the issue applies:
An auditory processing problem?	
A receptive language problem?	
Difficulty acquiring language (i.e., poor fund of word knowledge, difficulty acquiring nouns, pronouns, verbs, etc.)?	
Difficulty using language pragmatically (i.e., cannot express ideas, form sentences, create expanded verbalizations, etc.)?	
Apraxia?	
Articulation deficits?	
Voice Problems?	
Dysfluency?	
Other speech and language concerns? Specify:	
A hearing loss or deficit? <u>If Yes, child is excluded from study</u>	

Motor Problems: (Check all that apply)

Issue: Does the child have:	Check if the issue applies:
A fine motor deficit?	
A significant visual motor deficit?	
A significant graphomotor deficit?	
A gross motor deficit?	
A sensory processing deficit?	
Other significant motor problem:	

Internalizing Behavior Problems: (Check all that apply)

Does the child have*:*	Check if the issue applies:
Emotional reactivity problems?	
Moodiness or emotional volatility where child exhibits rapid shifts in mood states that are poorly regulated?	
Separation anxiety?	
Excessive crying?	
Excessive preoccupation with cleanliness and order?	
Anxiety?	
Affective disturbance?	
Physiological complaints in the absence of cause?	
Social anxiety or avoidance?	
Other behavioral manifestations that indicate emotional maladjustment directed inward, Specify:	

Externalizing Problems category: (Check all that apply)

Does the child have*:*	Check if the issue applies:
Attention Issues (Can't concentrate, inattentive, difficulty with directions and/ or carrying out tasks that is not attributable to language concerns, quickly shifts focus from one activity to another, difficulty sustaining mental effort, etc.)	
Physically Aggressive (fights, hits, bites, hurts others, etc.)	
Non-Physical Aggression (teases, cruel, mean, not liked by others, etc.)	
Oppositional/Defiant (defiant, disobedient, angry moods, stubborn, temperamental, uncooperative, lacks guilt, consequences don't impact on behavior, etc.)	
Overactive (fidgety, can't sit still, etc.)	
Excessive Attention Seeking (demands needs be met with immediacy, can't wait turn, wants attention, etc.)	

Learning Disabled/Intellectual Deficits: (Check all that apply)

Does the child have:	Check all that apply:
IQ scores more than 2 Standard Deviations below mean?	
Educational Test Scores more than 2 Standard Deviations below mean?	
Difficulty learning and acquiring information and concepts commensurate with expectations for their age and experience relative to normative expectations or expectations for their peer group?	

To be completed during file review if an Autistic Spectrum Disorder is suspected:

Criterion	**Rating:** 0 = Not True; 1 = Somewhat True; 2 = Very True	**Fill in Rating Score**
Afraid to try new things?	0 1 2	
Avoids looking others in the eye?	0 1 2	
Can't stand things out of place?	0 1 2	
Disturbed by change in routine?	0 1 2	
Doesn't answer when people talk to him or her?	0 1 2	
Repeatedly rocks head or body?	0 1 2	
Seems unresponsive to affection?	0 1 2	
Shows little affection toward people?	0 1 2	
Speech problem/Communication or language impairment?	0 1 2	
Strange Behavior?	0 1 2	
Upset by new people or situations?	0 1 2	
Withdrawn, doesn't get involved with others?	0 1 2	
Total Raw Score for Ratings		_____
Meets Criteria for Autistic Spectrum Disorder Category?	(Circle one)	Yes No

Appendix E:

Individual Data Sheet

(To be completed during review of records)
Child's name: _____

Date of Birth: _____

Date of Data collection: _____

Chronological Age: _____

Problems identified during file review	**Yes/No (circle 1)**
(I) Language/Communication Problems	**Y/N**
(II) Motor Problems	**Y/N**
(III) Externalizing behavior problems	**Y/N**
(IV) Internalizing behavior problems	**Y/N**
(V) Learning disability or intellectual deficits	**Y/N**
(VI) Autistic Spectrum Disorder	**Y/N**

Appendix F:

Listing of Disabilities Identified During File Review For the Purpose of Identifying Disability Categories For This Study

File	Disability Identified	Fil#	Disability Identified
1.	Externalizing behavior problem, Learning disability or intellectual deficits **(IX)**	26.	Language/communication problems, Motor problems **(XIII)**
2.	Language/Communication problems **(I)**	27.	Language/communication problems, Internalizing behavior problems **(XII)**
3.	Internalizing behavior problem, Motor problems **(XI)**	28.	Motor problems, Language/ ommunication problems **(XIII)**
4.	Language/Communication problems **(I)**	29.	Language/communication problems, Motor problems **(XIII)**
5.	Externalizing behavior problem, Learning or intellectual deficits **(IX)**	30.	Motor problems, Language/ ommunication problems **(XIII)**
6.	Internalizing behavior problems, Motor Problems **(XI)**	31.	Language/Communication problems, Learning or intellectual deficits, Externalizing behavior problems **(VII)**
7.	Externalizing behavior problems **(III)**	32.	Language/Communication Problems and Externalizing behavior problems **(VI)**
8.	Internalizing behavior problems, Language/Communication problems **(XII)**	33.	Motor problems, Internalizing behavior problems **(XI)**
9.	Learning or intellectual deficits, Language/Communication Problems **(VIII)**	34.	Externalizing behavior problems **(III)**
10.	Learning or intellectual deficits, Language/Communication Problems **(VIII)**	35.	Externalizing behavior problems, Language/Communication problems **(VI)**
11.	Language/Communication Problems **(I)**	36.	Language/Communication problems, Learning or intellectual deficits **(VIII)**

File	Disability Identified	Fil#	Disability Identified
12.	Language/Communication Problems **(I)**	37.	Internalizing behavior problems, Language/Communication problems **(XIII)**
13.	Learning or intellectual deficits, Externalizing behavior problems, Language/Communication Problems **(VII)**	38.	Internalizing behavior problems, Language/Communication problems **(XII)**
14.	Language/Communication Problems **(I)**	39.	Externalizing behavior problems, Language/Communication problems **(VI)**
15.	Language/Communication Problems and Externalizing behavior problems **(VI)**	40.	Internalizing behavior problems, Language/Communication problems **(XII)**
16.	Language/Communication Problems and Externalizing behavior problems **(VI)**	41.	Internalizing behavior problem **(IV)**
17.	Autistic spectrum disorder **(X)**	42.	Language/Communication problems **(I)**
18.	Motor problems, Language/ communication problems **(XIII)**	43.	Language/Communication problems **(I)**
19.	Language/communication problems **(I)**	44.	Motor problems **(II)**
20.	Language/communication problems **(I)**	45.	Internalizing behavior problems **(IV)**
21.	Autistic spectrum disorder **(X)**	46.	Language/communication problems **(I)**
22.	Language/communication problems, Externalizing behavior problems **(VI)**	47.	Language/communication problems **(I)**
23.	Externalizing behavior problems **(III)**	48.	Language/communication problems **(I)**
24.	Language/communication problems **(I)**	49.	Externalizing behavior problems **(III)**
25.	Autistic spectrum disorder **(X)**	50.	Internalizing behavior problems **(IV)**

Tally:

Problem:	**Number noted during review:**
(I) Language/Communication Problems	13
(II) Motor Problems	1
(III) Externalizing behavior problems	4
(IV) Internalizing behavior problems	3
(V) Learning disability or intellectual deficits	0
(VI) Language/Communication Problems and Externalizing behavior problems	6
(VII) Language/Communication Problems, Externalizing behavior problems, and Learning disability or intellectual deficits	4
(VIII) Language/Communication Problems and Learning disability or intellectual deficits	3
(IX) Autistic Spectrum Disorder	3
(X) Internalizing behavior problems and Motor problems	3
(XI) Externalizing behavior problems and Motor problems	0
(XII) Internalizing behavior problems and Communication Problems	5
(XIII) Language/Communication and Motor Problems	5

Appendix G:

Parent Demographic Questionnaire

Your Name: First_____ Last_____ Gender: __M __F

Relationship to student: _____ Your date of birth: ____/___/____
Day/month/year

Student Name: First_____Last_____Gender: __M __F

Student's Date of Birth: ____/___/____# of brothers, ages:____ # of sisters, ages:___
Please respond to the following questions by placing an X on the line next to the response that is best for you. Be sure to mark ONLY ONE response per item.

Student's Ethnicity:

___ White, Non-Hispanic
___ African American, Non-Hispanic
___ Hispanic
___ Asian or Pacific Islander
___ American, Indian, or Alaskan Native
___ Other, please specify: _____

What is your current marital status?

____ Single
____ Married and living with your spouse |
____ Separated (Are you receiving support payments from your spouse?
Circle one: Yes / No)
____ Widowed
____ Divorced (Are you receiving support payments from your former spouse?
Circle one: (Yes / No)

What is the highest level of schooling you have completed?

___ Less than high school
___ High School graduate
___ Some college or specialized training.
___ College or university graduate.
___ Graduate professional training or degree

What is the highest level of schooling your spouse has completed?

___ Less than high school
___ High School graduate
___ Some college or specialized training.
___ College or university graduate.
___ Graduate professional training or degree

I am currently: _____ employed _____ retired _____ not currently employed
If currently employed, my job title is: _____
If previously employed my previous occupation was: _____
(if applicable) **My spouse or partner is currently**:
_____ employed _____ retired _____ not currently employed
If currently employed, your spouse's job title is: _____
If previously employed your spouse's previous occupation was: _____

Appendix H

Home Language Survey

The following is a sample of items that would completed in a Home Language survey used to determine a child's language dominance. If more than one language is indicated for any question then the child is considered to be in a bilingually exposed environment.

Sample Items:

In what language(s) do you speak to your child? _____

In what language(s) do other members of your household speak to your child? _____

In what language(s) does your child's caregiver speak to your child? _____

Appendix I

Teacher Questionnaire

Teacher Name:_____

Name of Student: _____

Teacher Gender: ____ Male ____ Female

Teacher Date of Birth: _____ / _____ / __19_____ (month/day/year)

Month Day Year

What is the highest level of schooling that you have completed?

____ High School Graduate

____ Teacher Seminary Graduate

____ Some college or specialized training

____ College or University Graduate

____ Graduate or Professional Degree in Education

____ Graduate or Professional Degree in field other than Education

How many years experience do you have in early childhood education?

_____

How many years experience do you have at your present teaching job?

_____

Appendix J

Vineland Adaptive Behavior Scales, Second Edition: Socialization Domain

The following is a sample of questions from the Vineland Form used in this research. (Sparrow, Cicchetti, & Balla, 2006)

Question / Item	**Circle to indicate** **how often this behavior actually occurs:** Extent to which the child actually does this, not can the child do this.
Tries to make social contact (for example, smiles, waves, talks, etc.)	0 (Never) 1 (Sometimes or partially) 2 (Usually)
Shares toys or possessions without being asked.	0 (Never) 1 (Sometimes or partially) 2 (Usually)
Copies or imitates appropriate behavior of others when unsure of correct actions (that is, in a novel situation, watches others to determine appropriate behavior)	0 (Never) 1 (Sometimes or partially) 2 (Usually)

Appendix K

Social Skills Rating System: Social Skills Questionnaire, Preschool Level

The following is a sample of questions from the SSRS-Teacher Form used in this research (Gresham & Elliot, 1990) .

Question / Item	**Circle to indicate "How Often?"**
Follows your (teacher) directions?	0 (Never) 1 (Sometimes) 2 (Very Often)
Controls temper in conflict situations with adults?	0 (Never) 1 (Sometimes) 2 (Very Often)
Invites others to join activities?	0 (Never) 1 (Sometimes) 2 (Very Often)

Appendix L

Study Participation Consent Form

The Graduate School and University Center
The City University of New York
365 Fifth Avenue
New York, NY 10016-4309
TEL 212.817.8285 FAX 212.817.1516

Parents Permission Form

My name is Rebecca Kaplan. I am a Doctoral Candidate in the Educational Psychology Ph. D. Program at The Graduate Center of the City University of New York (CUNY) and principal investigator of the project entitled Use of Teacher Rating Scales of Socialization to Discriminate Disability Categories in Preschoolers With Disabilities in Inclusion Placements. This is a research study that will look at differences in socialization in preschool children with disabilities enrolled in inclusion classrooms with typically developing peers.

In order to study this, it is necessary to collect information about children ages 3-5, who are receiving related services (Speech Therapy, Occupational Therapy, Physical Therapy, Counseling/Play Therapy, Special Education Itinerant Teaching Services (SEIT), supportive and assistive technology, etc.) and are enrolled in mainstream preschool classes. The study I am proposing would require me and/or a trained research assistant to review about 150 children's report files to obtain information on that child's disability and language characteristics and to collect information using two teacher questionnaires. We will only review the files and distribute teacher questionnaires for children whose parents or legal guardians sign and return this consent form allowing us to review their child's prior assessment results and to obtain information about their child via distribution of a teacher questionnaire. There will be no direct contact or interactions with the children whose parents assent to allow the primary investigator to collect data regarding their child. It is also not expected that the study will expose the children to any experiences that are different from that which is usual for the day-to-day classroom activities. Participation in the study consists only of review of a child's evaluation files and of completion of two teacher questionnaires with no direct investigator and child interactions or observations.

We are asking consent for the following:

- I would like permission to review the evaluation file on record at the agency that provides related services for your child to obtain archival information relevant to your child's disability characteristics. This information will likely include demographic information including socioeconomic status, Individualized Educational Plan, all evaluation results, etc.
- I would like your permission to ask you child's classroom teacher to complete two brief questionnaires: a form that asks questions about your child's overall social adaptation and a 30-question list that asks brief questions about how often your child uses specific skills that have to do with his or her social competency.

- I would like you to complete the opposite side of this form in order to collect basic demographic information needed to help make the results of this study meaningful. This form is needed to categorize your child's ethnicity and socioeconomic status to assist us in understanding the influence of cultural and economic factors on the research findings. Please complete the questionnaire on the back of this form after you have signed the participation consent below.

In appreciation of your cooperation with this research, I will be giving a gift to the class in honor of each child for whom we receive assent to collect data and whose teacher completes the two assigned questionnaires.

All information collected will be kept confidential and stored in a locked file cabinet to which only my graduate school adviser and I will have access. The results of the study will not have any impact on your child's educational placement or school experience. You may withdraw consent for participation at any time during the study. When the study is completed, the results may be submitted for publication. However, names of people or individual identifying characteristics will not be used in any of the publications. If you would like a copy of the study results, please provide me with your address or email and I will send you a copy in the future.

If you have any questions about this research, you may contact me at 718-761-5242 or email me at rebeccakaplan65@yahoo.com or my adviser at mfish@gc.cuny.edu. If you have questions about your rights as a participant in this study, you can contact Kay Powell, Institutional review Board Administrator, The Graduate Center/City University of New York, 212-817-7525 or email at kpowell@gc.cuny.edu. Thank you for your participation in this study. I will provide you with a copy of this signed consent to keep.

Child's name: _____

Date of Birth: _____

School Attending: _____

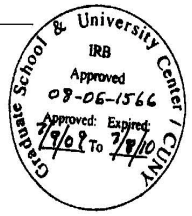
_____ _____

Signature of parent or guardian Date Signed

Parent/Guardian email address (if applicable)_____

_____ _____

Rebecca Kaplan, MS Date Signed
Doctoral Candidate and Principal Investigator



Appendix M

Correlations Among Major Study Variables

	Vine-land	SSRS	Age in months	Ethni-city	SES	Externa-lizing beha-vior	Interna-lizing beha-vior	Motor	Learning disability / cognitive	Lan-guage	Number of disabil-ities (incl. lang.)	Number of disabil-ities (excl. lang.)
Vineland	1	.889**	.116	-.346**	-.293*	-.382**	-.018	-.227*	.183	.212	-.150	-.268*
SSRS		1	.267*	-.356**	-.267*	-.314**	.089	-.176	.055	.065	-.168	-.216
Age in Months			1	.032	-.127	.077	.209	.169	.000	-.175	.145	.245*
Ethnicity				1	.682**	.121	-.205	.361**	-.128	-.161	.034	.116
SES					1	-.079	-.151	.296**	-.374**	-.184	-.215	-.145
Externalizing behavior						1	-.179	.098	-.015	-.118	.448**	.548**
Internalizing behavior							1	-.167	.026	-.110	.219	.294**
Motor								1	-.141	-.186	.367**	.493**
Learning disab./cognitive									1	.343**	.573**	.458**
Language										1	.407**	-.048
Number disab. (incl. lang.)											1	.893**
Number disab. (excl. lang.)												1

* $p < 0.05$.; ** $p < 0.01$.

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