

Summer 7-11-2013

Extracurricular Activities And The Development Of Social Skills In Children With Intellectual And Learning Disabilities

Bianca A. Brooks
Georgia State University

Follow this and additional works at: https://scholarworks.gsu.edu/psych_theses

Recommended Citation

Brooks, Bianca A., "Extracurricular Activities And The Development Of Social Skills In Children With Intellectual And Learning Disabilities." Thesis, Georgia State University, 2013.
https://scholarworks.gsu.edu/psych_theses/108

This Thesis is brought to you for free and open access by the Department of Psychology at ScholarWorks @ Georgia State University. It has been accepted for inclusion in Psychology Theses by an authorized administrator of ScholarWorks @ Georgia State University. For more information, please contact scholarworks@gsu.edu.

EXTRACURRICULAR ACTIVITIES AND THE DEVELOPMENT OF SOCIAL SKILLS IN
CHILDREN WITH INTELLECTUAL AND LEARNING DISABILITIES

by

BIANCA A. BROOKS

Under the Direction of Diana L. Robins

ABSTRACT

Numerous skill deficits interfere with the social functioning of children with intellectual (ID) and learning disabilities (LD). Due to the limited effectiveness of social skill interventions for this population, it is necessary to explore additional opportunities for social skill acquisition. Research suggests that extracurricular activity participation positively influences adolescent development; however, little is known about the benefits of activity participation for children with ID and LD. This study investigated the impact of frequency and type of extracurricular activity on the social competence of 7-12 year old children with ID (n=42) and LD (n=53), in comparison to their typically developing peers (TD; n=24). More time involved in unstructured activities was related to higher ratings of social competence. Greater participation in unstructured extracurricular activities was particularly beneficial for children with ID. Future research on the quality of involvement is necessary to further understand what specific aspects of activities facilitate social development.

INDEX WORDS: Social competence, Social development, Children with intellectual disability, Children with a learning disability, Extracurricular activities

EXTRACURRICULAR ACTIVITIES AND THE DEVELOPMENT OF SOCIAL SKILLS IN
CHILDREN WITH INTELLECTUAL AND LEARNING DISABILITIES

by

BIANCA A. BROOKS

A Thesis Submitted in Partial Fulfillment of the Requirements of the Degree of

Master of Arts

in the College of Arts and Sciences

Georgia State University

2013

Copyright by
Bianca Brooks
2013

EXTRACURRICULAR ACTIVITIES AND THE DEVELOPMENT OF SOCIAL SKILLS IN
CHILDREN WITH INTELLECTUAL AND LEARNING DISABILITIES

by

BIANCA A. BROOKS

Committee Chair: Diana L. Robins

Committee: Frank Floyd

Wing Yi Chan

Electronic Version Approved:

Office of Graduate Studies

College of Arts and Sciences

Georgia State University

August 2013

ACKNOWLEDGEMENTS

Foremost, I would like to express my sincere gratitude to Diana L. Robins, Frank Floyd and Wing Yi Chan for their guidance and detailed recommendations regarding how to improve this thesis project. This project would not have been possible without your support, insightful comments and patience.

I would also like to thank my family and friends who are a constant source of support and encouragement in every aspect of my life.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
1. INTRODUCTION	1
<i>Social Skills Interventions for Children with Cognitive Disabilities</i>	2
<i>Social Deficits in Children with ID and LD</i>	4
<i>Social Benefits of Activity Participation</i>	7
<i>Activity Participation in Children with Disabilities</i>	8
<i>Current Study</i>	11
2. METHODS	13
<i>Participants</i>	13
<i>Measures</i>	15
<i>Procedure</i>	21
3. RESULTS	22
<i>Relationship between Activity Frequency and Social Success</i>	24
<i>Structured vs. Unstructured Activities</i>	25
<i>Group Differences</i>	26
4. DISCUSSION	29
REFERENCES	36

LIST OF TABLES

Table 1. <i>Demographic Characteristics</i>	14
Table 2. <i>Activities Questionnaire: Unstructured and Structured Outside of School Activities</i>	16
Table 3. <i>Activity Questionnaire: Correlations Between Open-ended and Closed-ended Formats</i>	17
Table 4. <i>Peer Social Task Rating Scale (PSTRS): Social Tasks and Strategies</i>	19
Table 5. <i>Activity Scores and Average Social Competence based on PSTRS and ABS</i>	20
Table 6. <i>Correlations of Outcome Measures</i>	24
Table 7. <i>Hypothesis 1: Bivariate Correlations</i>	25
Table 8. <i>Influence of Unstructured Activities on Social Competence Based on PSTRS</i>	26
Table 9. <i>Influence of Structured Activities on Social Competence Based on PSTRS</i>	27
Table 10. <i>Influence of Unstructured Activities on Social Competence Based on ABS</i>	28
Table 11. <i>Influence of Structured Activities on Social Competence Based on ABS</i>	29

LIST OF FIGURES

Figure 1. <i>Interaction between unstructured activity participation and having ID</i>	28
--	----

1. INTRODUCTION

Early social relationships are important experiences that contribute to the development of children's adaptive social skills. Children's earliest social encounters begin in infancy, and continue to increase in complexity as their language develops (Hetherington et al., 2006). By the age of 4, typically developing children can engage in cooperative play with their fellow peers. As children progress through elementary and middle school, they desire to be accepted by their same age peers and to share activities with them (Rubin, Bukowski, & Parker, 2006). Through experiential learning, children have opportunities to develop a repertoire of social skills that are necessary for social adjustment (Grusec & Abramovitch, 1982). Initially, children gain an understanding of how to engage socially by observing the social behaviors of their peers. The process of acquiring social skills continues as children participate in different interactions that reinforce positive social behaviors (Zarbatany, Hartmann & Rankin, 1990). Children also become aware of their undesirable social behaviors when they are given corrective feedback from other children. When children fail to acquire and enact effective social skills with other children, they are viewed as socially incompetent by their peers and they are at risk for social isolation (Lamb & Roopnarine, 1979). This isolation further restricts opportunities to practice important skills that can enhance social development.

Children with learning disabilities (LD) and mild to moderate intellectual disabilities (ID) often lack appropriate social skills to fully participate in the social world of their peers. To promote social development, these children are frequently mainstreamed in the school setting. Mainstreaming involves spending recreational periods and occasionally academic classes with typically developing children who do not have disabilities. In principle, mainstreaming allows

children with cognitive delays to interact with their typically developing peers and provides several opportunities for children to practice their social skills (Guralnick, 1990).

Although mainstreaming may be beneficial, the social experiences offered within the mainstreamed classroom may not fully facilitate the social development of children with disabilities. In a review of the social attainments of children with ID in general education settings, Freeman and Alkin (2000) found that spending more time integrated into regular education classrooms was not related to social acceptance for children with disabilities. Similarly, when children with LD were placed in inclusive educational settings, they tended to have fewer reciprocal relationships than their typical developing peers (Wiener & Tardif, 2004). These children may need additional support to better prepare for the social demands of a mainstreamed classroom. Without the proper supports, children with ID and LD are potentially at risk for negative peer experiences like bullying and rejection. Therefore, despite being in the physical proximity of their typically developing classmates, children with ID and LD may continue to be socially excluded. It is necessary to focus on the social inclusion of children with cognitive delays and strive to find settings and situations in which these children can experience positive social interactions.

Social Skills Interventions for Children with Cognitive Disabilities

In response to the need to promote the social development of children with cognitive disabilities, several interventions have been developed that focus on teaching social skills. However, social skills intervention research has experienced slow progress because the interventions fail to show effectiveness and skill sustainability is low. A meta-analysis of 53 studies investigating the efficacy of social skills training for children with learning disabilities revealed that these interventions on average produced a small effect (Glass' $\Delta=.211$), and do not

significantly improve the social skills of children with disabilities (Kavale & Mostert, 2004). The age of subjects, the length of skill training, and the research quality did not explain differences in effect sizes. However, the type of the outcome measure used did make a difference. When compared with the average effect size of social skills training, outcomes were the best for self-ratings of performance, peer ratings of social communication, and teacher ratings of adjustment. Measures of the amount of peer interaction yielded little change. This situation highlights the importance of looking at a variety of outcomes when determining the success of social skill interventions. The limited efficacy of these interventions could be attributed to a variety of program characteristics (Cook & Oliver, 2011; Kavale & Mostert, 2004). For example, some social skills intervention programs focus solely on a limited range and number of social skills, like listening or starting conversations. Although this focus might lead to minor improvements in these specific skills, knowledge of these skills alone are not sufficient for developing and maintaining appropriate social relationships. It seems likely that most social situations require children to incorporate multiple social skills simultaneously in order to effectively interact with peers. In addition to this limitation, social skills programs often teach skills in a structured, didactic manner that may be difficult to adapt to real-world settings. Finally, social skills programs are typically conducted within a relatively short time frame that consists of, on average, no more than three hours of therapeutic intervention per week for less than ten weeks, with no effort to extend the training beyond this limited period (Kavale & Mostert, 2004).

The lack of successful interventions may also be due to conceptual issues surrounding social skills and social competence (Cook & Oliver, 2011; Kavale & Mostert, 2004). The literature often uses the terms social skills and social competence interchangeably, and there is remaining controversy over how to best define social skills. According to Kavale and Mostert

(2004), these terms should not be considered synonymous. Social competence refers to the overall quality of an individual's performance in a given social situation, whereas social skills refer to situation-specific social behaviors. Under this framework, social skills interventions might enable children to carry out specific social skills, but there may not be significant gains in social competence. Without clear, well-defined constructs, it is impossible to evaluate the success of an intervention relative to its own goals and the general goal of enhancing children's social functioning. According to Cook and Oliver (2011), the Social Skills Rating System (SSRS; Gresham & Elliott, 1990), and the socialization scales of the Child Behavior Checklist (Achenbach, 1991) and Vineland Adaptive Behavior Scale (Sparrow, Balla, & Cicchetti, 1984; Sparrow, Cicchetti, & Balla, 2005) are examples of validated measures that assess important aspects of social behaviors.

Social Deficits in Children with ID and LD

To date, the research on social abilities for children with disabilities documents their skills deficits (Gresham & MacMillan, 1997). Notably, studies indicate that children with ID tend to exhibit relatively low levels of involvement with other children during play, even under facilitative play conditions such as having regular playmates at their own home (Guralnick et al., 2009). Also, because lower levels of cognitive ability have been associated with lower levels of social development and peer adjustment (Bellanti & Bierman, 2000), research has explored potential deficits in social cognitive functioning. Children with ID often struggle with accurately interpreting another child's intentions, especially when a situation incorporates multiple intentions (Leffert, Siperstein, & Widaman, 2010). In addition to this situation, children with ID are more inclined than others to select a submissive response during a social problem solving task (Embregts & van Nieuwenhijzen, 2009). Although some longitudinal research indicates that

preschool children with ID can naturally increase their social reciprocity and positive social interactions over time, these changes typically apply to dyadic play and rarely apply to group play (Guralnick et al., 2007). The lack of appropriate social skills exhibited by individuals with ID has been connected with higher levels of loneliness when compared with their typically developing peers (Heiman & Margalit, 1998). Negative social experiences have also been connected with depressive symptoms in individuals with ID (C. Nezu, Nezu, Rothenberg, & DelliCarpini, 1995).

The literature examining the social deficits of children with LD reveals similar problems as experienced by children with ID. It is estimated that about 75% of individuals with LD have social skill deficits (Kavale & Mostert, 2004). Children with LD have shown significant deficits in an array of social skills such as helping others, expressing feelings, and having a positive self-attitude (Gresham & Reschly, 1986). These social skill deficits have been connected to being less accepted than other children on sociometric measures (Ochoa & Olivarez, 1995). In addition, children with LD are more likely to be victimized by peers than children without LD (Wiener & Tardif, 2004). Peer victimization may be a further threat to the social development of children with LD. Finally, children with LD also show important deficits in social information processing skills. For example, when presented with a social situation, children with LD typically offer fewer solutions to social problems and are more likely than their non-learning disabled peers to select the less appropriate solution from an array of possible responses (Bauminger, Edelsztein & Morash, 2005).

Initially, some of the social difficulties of children with LD were attributed to the amount of time they spent removed from the regular classroom setting and the stigma associated with being identified with a disability. It was suspected that being removed from the regular

classroom could further isolate children with LD and incite teasing from peers. However, a study by Vaughn, Elbaum, and Schumm (1996) found that students with LD did not demonstrate changes in peer acceptance before or after they were identified as having an LD. In addition, despite full-time inclusion in a general education classroom with accepting teachers, students with LD were still less liked by their peers than other children. This situation suggests that, instead of stigma, factors such as the children's skill deficits are contributing to their low peer status.

Although it has been useful to describe the specific problematic social behaviors of children with cognitive and learning disabilities, there is a need for more research to identify the factors that influence the development of these skills, in particular social participation and social activities. Before exploring the potential correlates of social participation and social activities, it is important to have clarity when operationalizing these variables. Adopting the definition provided by G. King et al. (2003), participation is the involvement of a child within everyday activities of childhood. Social (outside of school) activities or extracurricular activities are situations in which youth are engaged with others (Larson & Verma, 1999; Gilman, 2001; G. King et al., 2003). These activities can then be categorized as either structured or unstructured. Structured activities involve a set of rules or standards for behavior (e.g., sports, art activities, student organizations), whereas unstructured activities are less constrained (e.g., free play, talking on the phone).

Before investigating structured and unstructured activity participation in children with cognitive and learning disabilities, it is important to have an understanding of extracurricular involvement within the context of typical development. Gilman (2001) investigated the relationship between life satisfaction, social interest, and the frequency of structured

extracurricular activities in high school adolescents. The authors defined structured extracurricular activities as mentally or physically stimulating pursuits, such as school-sponsored events, peer tutoring, athletics, and volunteering in homeless shelters. Students were asked to list their extracurricular activities since their enrollment in high school. Results indicated that adolescents who participated in a greater number of structured extracurricular activities reported higher ratings of school satisfaction than their less involved peers.

Research on social participation has also focused on predicting academic achievement. For example, in a longitudinal study of high-risk antisocial adolescents, students who participated in one or more extracurricular activity prior to the eleventh grade had lower rates of school dropout and criminal arrest in comparison to at-risk adolescents who did not participate in these activities (Mahoney, 2000). Although causation cannot be established by this finding, extracurricular activity participation may provide necessary positive social support for high-risk youth.

Social Benefits of Activity Participation

Social activities may also have positive benefits for social development in younger children. Research shows that prior social experience promotes social interactions for preschool-aged children. For example, in an observational study by Harper and Huie (1985), the play behaviors of 3- to 5-year-olds who had previous experience in group child care were compared to children who had never attended a preschool environment. Compared to their inexperienced peers, preschoolers who had previous child care experience were more inclined to engage in cooperative play with their peers and less likely to spend time alone. In addition, experienced children spent less time with adults and more time engaged with their peers in play. Similar benefits of social experience have been found in research with school-aged children that

examined student participation in extracurricular or outside of school activities, such as clubs, sports, or church activities. Fletcher, Nickerson, and Wright (2003) examined the relationship between extracurricular activities and the adjustment of fourth grade students. Involvement in extracurricular activities was predictive of higher teacher ratings of academic competence. Participation in sports activities in particular was associated with higher ratings of social maturity and competence. Howie, Lukacs, Pastor, Reuben, and Mendola (2010) focused on participation in outside of school activities in children between the ages of 6 and 11. Consistent with other research on activity participation, children who participated in sports and clubs received higher parent ratings of social skills compared to children who were less involved in outside of school activities.

Mahoney, Cairns, and Farmer (2003) examined the influence of consistent participation in extracurricular activities on interpersonal and academic competence over time in middle school- and high school-aged adolescents. Interpersonal competence was measured by examining aggressive behaviors (e.g., gets into fights) and student popularity (number and types of friends). Consistent activity participation was associated with increases in interpersonal competence (less aggressive behaviors and more friends) over time. Involvement in extracurricular activities that persisted throughout high school also was associated with high educational aspirations in young adulthood. Although this study provided little information about the level or quality of involvement in specific activities, it supports the potential for extracurricular activities to guard against social isolation and academic failure.

Activity Participation in Children with Disabilities

Research indicates that, in comparison to their typically developing peers, children with disabilities exhibit lower participation in daily classroom tasks, which include both academic

activities and social activities. Specifically, Eriksson, Welander, and Granlund (2007) observed the classroom participation on a typical school day of children with cognitive disabilities between the ages of 7 and 12. Children with disabilities were observed to have lower participation in both structured (e.g., math or other subject-related activities) and unstructured (e.g., break time) classroom tasks. This finding suggests that children with disabilities may experience limited social interaction within a classroom setting. Therefore, these students may benefit from participating in outside of school activities to better prepare them for inclusive settings. In a similar study, Bedell et al. (2013) found that children with disabilities between the ages of 5 and 17 participated less in community activities than their typically developing peers. Interestingly, this study also found that both typically developing children and children with disabilities were less likely to participate in structured activities (i.e., classes/lessons, religious activities, organizational leadership activities, working for pay) than other activities like getting together with other children in the community. Bedell et al. also highlighted the importance of exploring a child's quality of involvement within an activity, as opposed to only focusing on the quantity of activities.

Studies also indicate that children with disabilities differ from typically developing peers in activity participation outside of school. Solish, Perry, and Minnes (2010) compared the social, recreational, and leisure activity participation of children with autism spectrum disorder (ASD), children with ID, and their typically developing peers between the ages of 5 and 17. Social activities were those in which the child engaged informally with peers, such as playing at a friend's house. Recreational activities were formally organized structured activities, such as sports, dancing lessons, and music lessons. Leisure activities were passive endeavors such as watching television or going for walks. Typically developing children were more likely to

participate in social and recreational activities than children with ASD and children with ID, though participation in leisure activities was similar across the three groups. Additional group differences were found between children with ASD and children with ID. While engaged in leisure activities, children with ID participated in more activities with peers than children with ASD, and the children with ID were significantly more likely to have friends than the children with ASD. Conversely, Abells, Burbidge, and Minnes (2008) found that when high school adolescents with ID participated in activities with peers, they were more likely to participate in organized activities (e.g., organized sports) instead of unstructured activities (e.g., going for walks, playing computer games). These contradictory findings might suggest that activity engagement may change as children move into adolescence. Taken together, both studies suggest that both unstructured and structured activities should be investigated as the means by which young school-age children with disabilities engage with their peers outside of school. Additionally, it is possible that children with disabilities may differentially benefit from unstructured and structured activities when compared to their typically developing peers. Therefore, it is important to take into consideration how group differences may influence social functioning, as well as activity participation.

Other studies suggest that structured recreational programs help children with ID to form positive social relationships and become socially accepted. For example, Siperstein, Glick, and Parker (2009) examined social inclusion in a four-week recreational summer sports program that involved children with and without ID between the ages of 8 and 13. The students participated in several structured sports games that de-emphasized competition and focused on group membership. In addition, the program stressed equal treatment of students during all activities. This program resulted in positive gains not only in athletic skills but also in social relationships.

Based on peer nominations, children with ID received the same number of new friend nominations as children without ID. Similarly, findings suggest that continued participation in sports activities have resulted in a positive influence on the functional well being of adolescents with ID (Ghosh & Datta, 2012). Structured activities may provide children with intellectual and learning disabilities the necessary scaffolding to engage with their peers. Therefore, it is important to explore types of activities (i.e., structured versus unstructured) that aid in the social development of children with cognitive and learning disabilities.

The literature addresses a need to explore additional venues for social skill acquisition for children with cognitive and learning disabilities. Although it appears that extracurricular activity participation may serve as a positive protective factor for adolescent social and academic development, little is known about the specific benefits of activity participation for children with ID and LD. Promising research-based summer recreational programs and activity engagement suggests that extracurricular activities may provide children with cognitive disabilities an opportunity to practice social skills with their peers. Further research is necessary to understand the relationship between extracurricular activity participation and the social success of children with cognitive disabilities.

The Current Study

The purpose of the present study was to investigate the impact of frequency and type of outside of school activities on the social skills and social competence of children with cognitive disabilities. Specifically, this issue was investigated within a sample of typically developing children, children with LD, and children with mild and moderate ID between the ages of 7 and 12. For the purpose of this study, social success incorporated both individual social skills as well as social competence. The impact of activity participation on social success was explored within

the context of the entire sample, as well as between and within groups. This study extends previous research by investigating the potential benefits of extracurricular activity participation in relation to social success for children with ID and LD. If extracurricular activity participation is related to social success, it may serve as an additional arena for social skill intervention. Data on different peer group activities, social skills and social competence were assessed using parent report.

Hypothesis 1: Based on previous literature highlighting the potential social benefits of activity participation, it was proposed that greater participation in outside of school social activities by children in the entire sample will predict better social success (social skills as well as social competence). That is, children who spend a greater amount of time involved in outside of school activities will be rated by their mothers as more successful at important social tasks for children in this age range, including joining groups, playing competitive games, and responding to other children. Children who spend more time participating in outside of school activities will also be more likely to engage in skillful social strategies when engaging with peers (e.g., try to join in without being disruptive, respond in a warm and friendly way, compromise, try to cheer up or give advice to another child, and play fairly) based on parent report. In addition to this expectation, it was predicted that greater participation in extracurricular activities would predict higher parent ratings of social competence.

Hypothesis 2: In order to further examine the differences in the range of out of school activities in which children participate, the impact of structured activities on a child's social competence was investigated within the entire sample. For this hypothesis, the focus is more so on a child's

broader social abilities as opposed to a set of discrete skills. It was anticipated that the amount of time spent in structured activities would be a stronger predictor of social competence than the amount of time spent in unstructured activities.

Hypothesis 3: Group differences were also investigated. As in the second hypothesis, the focus is on a child's overall quality of social performance. It was predicted that participation in structured activities will have a greater effect on social competence for the ID and LD group in comparison to the typically developing (TD) comparison group.

2. METHODS

Participants

The participant families took part in a larger longitudinal study of the impact of family factors on social outcomes for children with and without cognitive and learning disabilities. Families were recruited from public schools near Atlanta, Georgia and Chapel Hill, North Carolina. Letters were sent to school officials explaining that the aim of this project was to understand the family and peer relationships of children with intellectual and learning disabilities. School officials were then asked to distribute these letters to families of children with mild to moderate intellectual disability and those diagnosed with learning disabilities between the ages of 7 and 15 ($M=9.52$, $SD=1.22$). To recruit families for a non-disability comparison group, solicitation letters also were sent to randomly selected families of children in the same age range enrolled in the same public schools. Interested parents were encouraged to contact the research coordinator for further information. The overall sample ($N=117$) included 75 boys and 42 girls. See Table 1 for further demographic information. The LD group ($n=53$) was

identified based on confirmation from school and IEP reports that the children received services for a specific learning disability. In order to be included in this group there must have been no evidence of general cognitive delay (i.e., the child had to have an IQ score above 80), and the child must have a significant difference between the IQ score and a lower score on an achievement test. The ID group (n=40) was characterized by IQ scores between 40 and 70 as well as evidence of deficits in adaptive functioning as indicated by educational assessments completed by the schools. Children within this group were identified as having mild to moderate intellectual disability or Down syndrome specifically. Finally, the comparison group (n=24) included children without any identified intellectual, psycho-emotional disorder, learning disability, or physical disorder. Siblings of children with identified disorders, as well as children enrolled in gifted and talented courses were excluded from this group.

Table 1. *Demographic Characteristics (N=117)*

Characteristic	LD (N=53)	ID (N=40)	TD (N=24)
Child Age (in years)			
Mean	9.25	9.52	9.73
SD	.97	1.51	.972
Grade level of child			
Median	3	3	4.5
SD	1.27	1.13	1.12
Sex of Child			
Male	37(69.8%)	25 (62.5%)	13 (54.2%)
Female	16 (30.2%)	15(37.5%)	11(45.8%)
Race of Child			
Caucasian	28 (52.8%)	27 (67.5%)	12 (50%)
African American	19 (35.8%)	10 (25%)	9 (37.5%)
Mixed Descent	6 (11.3%)	3 (7.5%)	3 (12.5%)
Mothers Education%			
<High School (HS)	4 (7.5%)	4 (10.0%)	2 (8.3%)
HS Diploma	11 (20.8%)	5 (12.5%)	1 (4.2%)
Technical School	8 (15.1%)	2 (5.0%)	1 (4.2%)
Some College	12 (22.6%)	6 (15.0%)	5 (20.8%)
College Graduate	13 (24.5%)	18 (45.0%)	8 (33.3%)
>College Graduate	5 (9.5%)	4 (10%)	7 (29.2%)
Household Income			
Mean	\$49,856	\$58,708	\$66,197
Median	\$36,500	\$61,000	\$67,500
SD	38506.78	39650.18	46673.42

Measures

Child and Family Demographics. Demographic information was obtained from the parents during a 30-minute face-to-face interview, including information regarding the age, education, race, and ethnicity of each family member. This demographic information is presented in Table 1. Additional information regarding marital status and number of siblings was also gathered.

Activity Participation. In order to assess a child's involvement in out of school social activities, parents completed the Activities Questionnaire. This questionnaire was newly developed for the current study, based on work by Ladd (Guralnick, 1997; Guralnick, 2002; Ladd, 1992; Ladd, LeSieur, & Profilet, 1993). Parents, usually the mother, reported on the child's involvement in both unstructured outside of school social activities and structured outside of school activities with other children during the past six months. Although information regarding reliability and validity has not been reported on this specific measure, similar parental reports have been used to show differences in the impact of structured and unstructured activities and assess parental involvement in the activity participation of children with disabilities (Ladd, 1992; Guralnick, 1997). Using an open-ended format, parents were first asked to list up to four specific non-school group activities their child participated in during the past six months, and they reported the number of children involved in each group. Parents also reported how many times each group met per month. Parents were also asked if their child was involved in any of seven specific activities using a closed-ended format (e.g., "How often in the past six months have you involved your child in church activities?"). Information about the frequency of activity participation was collected through a closed-ended format. Parents were asked to rate their child's frequency of involvement on a scale from 1 to 5 (1=never, 2=less than monthly, 3=every

few weeks, 4=weekly, 5=daily). Next, the frequency scores for the open-ended items were converted to the same 5-point scale by assigning a rating that most closely matched the frequencies reported by the parents. In this way, all activities have scores based on the same scale.

Activities were categorized as unstructured or structured. Applying the distinction used in previous studies (Larson & Verma, 1999; Gilman, 2001; King et al., 2003), unstructured outside of school activities include activities that contain elements of free play, whereas structured outside of school activities involve activities that involve teams and specific rules. These activities had to involve other children in order to be seen as a social activity. See Table 2 for a list of the seven activities that were provided on the close-ended format.

Table 2. *Activities Questionnaire: Unstructured and Structured Outside of School Activities*

	Example of Activity
Unstructured Activities	Going to the park to play Trips to the pool Play dates with other children (inside and outside of home)
Structured Activities	Church activities After school programs (e.g., YMCA, camp) Clubs (e.g., Boy Scouts, Girl Scouts, Choir) Athletic Activities (e.g., baseball, soccer, dance, cheerleading)

Activities provided by parents during the open-ended portion of the questionnaire were coded as unstructured or structured by two coders. An intraclass correlation was calculated to measure the reliability between raters (ICC=.71). Total time spent involved in either structured or unstructured activities was based on an average composite measure consisting of all items involving either structured or unstructured activities. Separate composite scores were calculated for the open-ended and the closed-ended items, and correlations were calculated to assess the consistency of parent reports across types of activities and across the two formats. See Table 3

for correlations between open-ended and closed-ended formats. Parents were more likely to provide responses for the closed-ended format as opposed to the open-ended format. For the purpose of this investigation, only the parent responses based on the closed-ended format were used in the analyses of child activity involvement. Overall, the average rating of time in structured activities was $M=3.50$, $SD=.86$, and the average for unstructured activities was $M=3.24$, $SD=.81$.

Table 3. *Activity Questionnaire: Correlations Between Open-ended and Closed-ended Formats^a*

Measure	Close-ended total time spent in activities	Close-ended total time spent in structured activities	Close-ended total time spent in unstructured activities
Open-ended total time spent in activities	-.22*	-.34**	.02
Open-ended total time spent in structured activities	.04	.04	.02
Open-ended total time spent in unstructured activities	.07	-.08	.19*

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

^aTime spent in activities in the past six months (daily, weekly, every few weeks, less than monthly, never)

Social Skills. The Peer Social Tasks Rating Scale (PSTRS) was developed for the purpose of the larger longitudinal study to assess how often a child attempts various social tasks and the child's success at each task. There is no literature available to support the reliability or validity of the PSTRS. Analysis of internal consistency in the current study indicated an acceptable Cronbach's alpha ($\alpha=.87$). Using a 5-point scale (1=rarely, 5=very often) parents rated their child's involvement in seven social tasks: joining groups, responding to other children, managing disagreements, helping others, playing games, having conversations, and coping with teasing. Parents reported how often their child used any of a number of skillful strategies (strategies that would aid the completion of the social task; 1=rarely, 5=almost always)

and unskillful strategies (strategies that would hinder the completion of social task; reverse coded such that 1=almost always, 5=rarely) when completing these social tasks. See Table 4 for list of skillful and unskillful strategies. A total score was created by summing the frequency of skillful strategy use, with reverse-coded unskillful strategies. Thus, higher scores indicated greater use of skillful as opposed to unskillful strategies ($M=93.37$, $SD=22.49$; Minimum Score=28, Maximum Score=140).

Table 4. *Peer Social Task Rating Scale (PSTRS): Social Tasks and Strategies*

Social Task	Social Strategy
Joining Groups of Children	<p>When your child joins groups they...</p> <ul style="list-style-type: none"> - Watch the group and wait to be invited to join^a + Wait and try to join in without being disruptive to the group^b -Barge in and disrupt what the children are doing
Responding to other children	<p>When another child approaches, your child...</p> <ul style="list-style-type: none"> - ignores or withdraws from them + responds in a warm and friendly way - child appears awkward or uncomfortable
Managing Disagreements	<p>When your child gets into disagreements, they...</p> <ul style="list-style-type: none"> - give in + try to reach a compromise - insist on getting their way
Giving help to others	<p>When another child needs help, your child...</p> <ul style="list-style-type: none"> -ignores the other child + tries to cheer up the other child + tries to give advice or give help to the other child - teases or acts in a mean way to the child
Playing games with other children	<p>When your child plays games, they...</p> <ul style="list-style-type: none"> + play fair and follow the rules + take turns - show off or brag when they are winning - act like sore loser + lose and win graciously
Having conversations with other children	<p>When your child has a conversation with other children, they...</p> <ul style="list-style-type: none"> - fail to stay on topic - talk about themselves or focus only on their interests - fail to understand what the other child is saying + communicate clearly + listen well to what others are saying
Coping with being picked on by other children	<p>When your child is being picked on they....</p> <ul style="list-style-type: none"> -Have difficulty defending themselves +Stand up for themselves +Ask an adult for help -Cry or become very sad -Get angry and try to get revenge

^a (+)= skillful strategy. ^b(-)= unskillful strategy.

Social Competence. Using the PSTRS, an average score of social competence was created by averaging parent responses to “How often is your child successful...” (5 point scale; 1=rarely, 5=very often; $M=3.83$, $SD=.88$) for the seven social tasks (joining groups, responding to other children, managing disagreements, helping others, playing games, having conversations, and coping with teasing). See Table 5 for social competence descriptive statistics for individual groups.

Table 5. Activity Scores and Average Social Competence based on PSTRS¹ and ABS²

	LD	ID	TD
Average Amount of Time Spent in Structured Activities ³			
Mean	3.60	3.58	3.08
SD	.86	.80	.85
Average Amount of Time Spent in Unstructured Activities ³			
Mean	3.41a	2.87b	3.44a
SD	.76	.84	.72
Total Number of Skillful Strategies			
Mean	97.81	82.28	102.04
SD	20.06	24.64	16.51
Social Competence Based on PSTRS			
Mean	3.96	3.35	4.29
SD	.81	.94	.50
ABS Socialization Domain			
Mean	20.71	19.26	24.29
SD	3.81	3.92	2.06

¹Peer Social Task Rating Scale

²Adaptive Behavior Scale

³Time spent in activities in the past six months (daily, weekly, every few weeks, less than monthly, never)

^aSignificant group difference; Children with LD and TD spend more time in unstructured activities

^bSignificant group difference; Children with ID spend less time in unstructured activities.

In addition, social competence also was assessed with the Adaptive Behavior Scale-Caregiver report (ABS; Lambert, Nihira & Leland, 1992; Nihira, Leland & Lambert, 1993). The ABS is separated into two parts; the first portion focuses on personal independence with ten different behavioral domains (Independent Functioning, Physical Development, Economic Activity, Domestic Activity, Language Development, Numbers and Time, Prevocational/Vocational Activity, Self Direction, Responsibility and Socialization). These

domains address a child's independent functioning, responsibility, awareness, and consideration of others. The second part of the ABS includes seven domains (Social Behavior, Conformity, Trustworthiness, Stereotyped and Hyperactive Behavior, Self-Abusive Behavior, Social Engagement, and Disturbing Interpersonal Behavior) that measure maladaptive behavior in personal and social domains (Stinnett, Fuqua, Coombs, 1999). This measure produces domain scores (based on total of competent behaviors; Raw scores range from 10-26) and standard scores ($M=100$; $SD=15$) for each of the five factors: Personal Self-Sufficiency, Community Self-Sufficiency, Personal-Social Responsibility, Social Adjustment, and Personal Adjustment. This measure has a strong theoretical basis and has been used throughout the literature in order to assess individual's adaptive strengths and weaknesses. The ABS has been normed for developmentally delayed individuals (within the age range of this sample) in a large national study. Internal consistency reliability coefficients range from .82 to .98 for domain scores, and .88 to .98 for factor scores (Watkins, Ravert, Crosby, 2002). This study used the Socialization domain to serve as an additional standardized measure of social competency (See Table 5 for descriptive statistics). The Socialization domain was selected due to its assessment of the prosocial aspects of social behavior, as opposed to negative social behaviors (e.g., violence, teasing). This scale included items assessing an individual's ability to interact with others (e.g., individual's cooperation, consideration, interaction with others).

Procedure

All procedures and assessments were identical across both sites. The procedures were reviewed and approved by the appropriate university IRBs. Families participated in two assessment sessions that lasted approximately two hours each and occurred no more than a week apart. Research teams consisted of two or three research assistants that interviewed families and

were blind to these specific hypotheses. The data used in this particular study were collected primarily during the first session. Demographic data were collected at the beginning of the interview. General cognitive ability and the presence of LD or ID for the children were determined based on most recent school records. Average cognitive ability for the comparison group was presumed based on regular education classroom placement, with no history of a disability or gifted placement. During the first sessions, parents completed surveys regarding their child's involvement in social activities and ratings of their child's success in social situations. Parents also submitted information regarding their child's adaptive and behavioral functioning and family stress that was not used in this current study. At the completion of the sessions, families were given monetary compensation for their participation.

3. RESULTS

All data were analyzed using the Statistical Package for Social Sciences (SPSS 18). Since this study used archival data set with a known sample size ($N=117$), a power analysis was used to determine the ability to detect a small effect. Power analysis conducted via G*Power (Erdfelder, Faul, & Buchner, 1996), indicated that power to detect a hypothesized small effect size (Cohen's $f^2=.15$) at the .05 level is .19. Although there was not enough power to detect a small effect, there appeared to be adequate power to detect a moderate effect (Cohen's $f^2=.15$ at the .05 level, is .93). This estimate was derived from a model including four tested predictors (composite score of structured activities, LD group, ID group, and interaction terms), as well as ten total predictors (including covariates). This may have been an imprecise estimate of power due to unequal sample sizes between groups and the inability of G*Power to account for interaction terms. The interaction term and additional covariates were included in the proposed

model to account for the fact that G*Power does not estimate power for interactions. Including the additional predictors within the power analysis increased the level of accuracy in detecting an effect, which allows for a more conservative estimate of power.

Correlations and regression analyses were used to test the hypotheses. No major violations (i.e., linearity, homoscedasticity, independence of errors, lack of multicollinearity) of regression assumptions were found. Possible covariates (participant race, parental education, income, grade level, and child's sex) were correlated with each outcome measure, before examining whether frequency of activity participation accounts for significant additional variance in social competence and the use of skillful strategies. The child's grade level was the only significant covariate and PSTRS success average, $r=.25, p<.01$; PSTRS total skillful strategies, $r=.25, p<.01$; ABS, $r=.19, p=.07$; therefore, grade level was controlled for in all regression analyses. Although the median income values suggest significant differences between incomes, results from ANOVA indicate that yearly income does not significantly across LD, ID, and TD groups, $F(2, 111)= 1.40, p=.25$. Significant mean differences between group participation were noted in participation in unstructured activities, $F(2,111)=6.34, p=.002$. Children with ID participated in significantly less unstructured activities than their LD and TD peers (See Table 5). Convergent validity of the social success measures was also evaluated in order to help explain differences in outcomes (See Table 6). The two measures of social competence (PSTRS and ABS Socialization Domain) were significantly correlated, $r(94)=.53, p<.001$. The use of skillful social strategies was also significantly related to both social competence measures, PSTRS: $r(111)=.46, p<.001$; ABS: $r(97)=.47, p<.001$.

Table 6. *Correlations of Outcome Measures*

Measure	1	2	3
1. Total Number of Skillful Strategies	_____		
2. Social Competence Based on PSTRS	.65**	_____	
3. ABS Socialization Domain	.57*	.53**	_____

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

Relationship between Activity Frequency and Social Success

In order to evaluate the first hypothesis, bivariate correlations (See Table 7) and hierarchical regression were used to investigate the nature of the relationship between activity participation and social success, using three outcome measures to assess both social skills and social competence. Frequency of activity participation (total time spent involved in all activities) was significantly correlated with social competence based on the PSTRS, $r = .24$, $p < .05$, but was not significantly correlated with total skillful strategies used, $r = .13$, $p = .18$, or social competence measured by the ABS, $r = .05$, $p = .63$. Using regression analyses to control for the child's grade level, total time spent involved in all activities predicted greater social competence scores as measured by the PSTRS, $R^2 = .13$, $F(2, 106) = 7.89$, $p = .001$, $\beta = .24$. Total time spent involved in all activities did not significantly predict levels of social competence based on ABS Socialization subdomain, $R^2 = .04$, $F(2, 95) = 1.71$, $p = .19$, $\beta = .04$, or total score of skillful strategies based on PSTRS, $R^2 = .08$, $F(2, 110) = 4.55$, $p = .14$, $\beta = .14$. Since total score of skillful strategies was not significantly correlated with time spent in activities, it was not used as an outcome for subsequent hypotheses.

Table 7. *Hypothesis 1: Bivariate Correlations*

Measure	Total time spent in activities
Total Number of Skillful Strategies	.13
Social Competence Based on PSTRS	.24*
ABS Socialization domain	.05

* $p < .05$ *Structured vs. Unstructured Activities*

For the second hypothesis, in order to assess whether time spent in structured activities is a stronger predictor of social competence than time spent in unstructured activities, the unique variance of each predictor was compared to see if structured activity participation has a significantly larger effect on social competence than unstructured activities. After accounting for grade level, participation in unstructured activities predicted higher social competence scores based on the PSTRS, $R^2 = .27$, $F(2, 106) = 19.97$, $p < .001$; $\beta = .45$, $p < .001$, as well as the ABS, $R^2 = .13$, $F(2, 93) = 7.15$, $p = .001$; $\beta = .32$, $p = .002$. After accounting for grade level, participation in structured activities was not a significant predictor of social competence scores based on the PSTRS, $R^2 = .08$, $F(2, 106) = 4.58$, $p = .01$; $\beta = -.09$, $p = .33$, and was a significant negative predictor of social competence as measured by ABS, $R^2 = .10$, $F(2, 93) = 5.08$, $p = .008$; $\beta = -.26$, $p = .01$. Both predictors were entered separately into the regressions and ΔR^2 was compared. Contrary to the prediction, unstructured activities, $\Delta R^2 = .20$, $F(2, 106) = 19.97$, $p < .001$, had a greater influence on PSTRS social competence scores than structured activities, $\Delta R^2 = .01$, $F(2, 106) = 4.58$, $p < .05$. A similar trend was found when using the ABS socialization as the outcome measure, with unstructured activities $\Delta R^2 = .09$, $F(2, 93) = 7.15$, $p < .001$ contributing to more variance than structured activities, $\Delta R^2 = .06$, $F(2, 93) = 5.08$, $p < .01$.

Group Differences

In order to evaluate group differences in the relationship between activity type and social competence, hierarchical regression was used to assess moderation. Before testing the moderation hypothesis, the three groups were re-coded and represented by two dummy-coded vectors that contrast the ID with the comparison group (ID=1, LD = 0, comparison=0), and LD with comparison group (ID=0, LD=1, comparison=0). Grade level (the covariate), the ID vector, the LD vector, and the centered activity variable (unstructured) were all entered in the first step. The two interaction terms (ID X unstructured activity, LD X unstructured activity) were entered in the second and final step. This process was repeated to examine the influence of structured activity participation.

Table 8. *Influence of Unstructured Activities on Social Competence Based on PSTRS*

Variable	PSTRS Social Competence					
	Model 1			Model 2		
	B	Std. Error	β	B	Std. Error	β
Constant	3.57	.29		3.77	.30	
Grade	.16	.06	.23**	.13	.06	.18*
ID vs TD	-.56	.22	-.30*	-.56	.22	-.30**
LD vs TD	-.20	.20	-.12	-.27	.20	-.15
Unstructured Activities	.40	.09	.38***	.10	.22	.09
ID x Unstructured				.58	.26	.34*
LD x Unstructured				.16	.26	.09
R ²	.32***			.37*		
F	12.42			9.79		
ΔR^2				.04*		
ΔF				3.39		

* $p < .05$. ** $p < .01$. *** $p < .001$.

As shown in Table 8, when using the PSTRS as the outcome for social competence, there was a significant negative main effect of having ID, $\beta = -.30$, $p = .01$, a positive main effect of unstructured activities, $\beta = .38$, $p < .001$, as well as a significant interaction of ID with unstructured activities, $\beta = .34$, $p = .03$. Note that there was no significant main effect of LD group and no

significant LD X Unstructured activities interaction. See Table 8 for a complete list of beta weights. In order to explore the significant ID X Unstructured activities interaction, a simple slope analysis was completed, which examines the slope of the regression of PSTRS scores on unstructured activity participation for the ID group and for the typically developing group. The regression lines for each group are portrayed in Figure 1. The direction of the slopes is consistent with the hypothesis that activity participation would have a stronger effect on social competence for children with ID than for comparison children. There was a significant positive slope for the ID group, but a non-significant slope for the comparison group. Although there was a negative main effect of having an ID, $\beta = -.42, p = .001$, structured activities did not have a significant main effect when using the PSTRS (See Table 9) as an outcome measure.

Table 9. *Influence of Structured Activities on Social Competence Based on PSTRS*

Variable	PSTRS Social Competence					
	Model 1			Model 2		
	B	Std. Error	β	B	Std. Error	β
Constant	3.71	.32		3.79	.33	
Grade	.14	.07	.20*	.14	.07	.20*
ID vs TD	-.78	.23	-.42***	-.86	.24	-.46***
LD vs TD	-.20	.22	-.11	-.28	.23	-.16
Structured Activities	-.06	.09	-.06	.17	.21	.16
ID x Structured				-.37	.27	-.19
LD x Structured				-.23	.24	-.16
R ²	.20***			.22***		
F	6.49			4.64		
ΔR^2				.02		
ΔF				.96		

* $p < .05$. ** $p < .01$. *** $p < .001$.

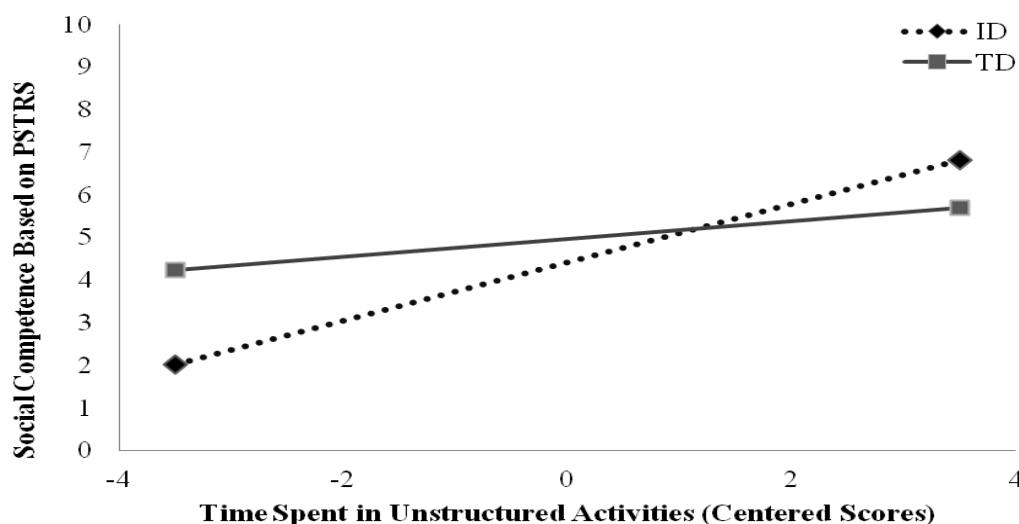


Figure 1. *Interaction between unstructured activity participation and having ID*

When using the ABS as the outcome for social competence, there was a significant negative main effect of having ID, $\beta = -.47$, $p = .01$, a positive main effect of unstructured activities, $\beta = .25$, $p < .001$, but there was not a significant interaction (See Table 10). Increased involvement in structured social activities, $\beta = -.21$, $p = .04$, resulted in significantly lower scores on the ABS Socialization domain (See Table 10).

Table 10. *Influence of Unstructured Activities on Social Competence Based on ABS*

Variable	ABS Socialization Domain					
	Model 1			Model 2		
	B	Std. Error	β	B	Std. Error	β
Constant	21.84	1.79		22.17	2.07	
Grade	.53	.31	.16	.47	.31	.14
ID vs TD	-3.85	1.57	-.47*	-3.67	1.82	-.45*
LD vs TD	-3.04	1.49	-.38*	-3.05	1.78	-.38
Unstructured Activities	1.20	.48	-.25*	.97	2.16	.20
ID x Unstructured				1.08	2.28	-.15
LD x Unstructured				-.52	2.26	-.07
R ²	.19***			.21**		
F	5.24			3.95		
ΔR^2				.02		
ΔF				1.30		

* $p < .05$. ** $p < .01$. *** $p < .001$.

Structured activity participation did not significantly influence social competence as measured by the PSTRS. There were no significant interactions between ID status and participation in structured activities. Comparatively, having an LD only significantly influenced social competence scores measured by the ABS, $\beta=-.38$, $p=.04$. See Tables 8 & 9 for a complete list of beta weights using the PSTRS as an outcome, and Tables 10 & 11 using ABS as an outcome. There were no significant interactions.

Table 11. *Influence of Structured Activities on Social Competence Based on ABS*

Variable	ABS Socialization					
	Model 1			Model 2		
	B	Std. Error	β	B	Std. Error	β
Constant	21.60	1.83		22.25	2.25	
Grade	.59	.32	.18	.57	.32	.17
ID vs TD	-4.15	1.57	-.51**	-4.71	1.93	-.58**
LD vs TD	-2.69	1.53	-.34	-3.25	1.90	-.41
Structured Activities	-.98	.46	-.21*	-.03	1.94	-.01
ID x Structured				-1.01	2.09	-.13
LD x Structured				-1.01	2.02	-.16
R ²	.17**			.18**		
F	4.76			3.15		
ΔR^2				.002		
ΔF				.13		

* $p<.05$. ** $p<.01$. *** $p<.001$.

4. DISCUSSION

The main aim of this study was to explore the relationship between extracurricular activity participation and social skill acquisition in children with ID and LD. Given the potential for extracurricular activity participation to influence positive gains in social relationships (Siperstein, Glick, & Parker, 2009; Fletcher, Nickerson, & Wright, 2003; Howie et al., 2010), it was expected that greater time spent in extracurricular activities would predict a greater use of skillful social strategies, as well as higher ratings of social competence. Results provided partial support for the hypotheses. Greater participation in extracurricular activities predicted greater

social competence measured by the PSTRS, after accounting for the child's grade level.

Although a similar effect was not found when using another measure of social competence (ABS Socialization Domain) or when looking at skillful social behavior, this should not discount the current findings. Upon looking at the convergent validity of these three outcomes, it appears that all three outcomes share some similarities (See Table 6) and some conceptual differences. These results may be due to conceptual issues related to measuring social outcomes (Cook & Oliver, 2011; Kavale & Mostert, 2004). For example, although both the PSTRS and ABS measure social competence, the approach is different. Specifically, the PSTRS directly asks parents to rate how successful their child is at seven peer-related social tasks, whereas the ABS approaches social competence by assessing a broader range of functioning, including a child's awareness of others (e.g., knows the names of family members) and interaction with others in their community. The PSTRS is more peer oriented, asking parents to focus solely on how their child behaves around other children with other children and, thus, it might be more directly associated with the types of social gains that result from high levels of participation in social activities with peers.

Although both measures use the parent's perception of their child's social abilities, it is possible that each format is targeting a different aspect of social functioning. It is possible that the PSTRS may provide relatively more insight on how children interact with their peers.

The second aim of this study was to investigate the potential positive impact of structured activity participation in particular, on ratings of social competence. It was anticipated that amount of time spent involved in structured activities would be a stronger predictor of social competence than amount of time spent in unstructured activities, due to the additional scaffolding provided by structured activities. Interestingly, greater participation in unstructured activities predicted greater ratings of social competence based on both the ABS and PSTRS.

Conversely, participation in structured activities predicted lower ratings of social competence based on the ABS, but not the PSTRS. Even though unstructured activity participation was the stronger predictor of social competence, the negative influence of structured activity participation is a unique finding. There have been several documented benefits of participating in structured activities (Gilman, 2001; Siperstein, Glick, & Parker, 2009). Findings from this investigation suggest that further research is necessary to understand the mechanisms behind what aspects of a structured activity aid or hinder a child's social development. Structured activities may be more overwhelming for children due to the higher number of children involved in the activity, and the additional cognitive demands of rules and guidelines. Children with cognitive and learning disabilities may be vulnerable to teasing and other negative peer experiences within structured activities, decreasing their chances for having positive, corrective social experiences. In this way, structured activities may be comparable to mainstreaming within schools, which has been met with limited success in promoting the social development of children with ID and LD (Freeman & Alkin, 2000; Wiener & Tardif, 2004).

In contrast, participation in unstructured activities may provide children with more flexibility in practicing social behaviors. Additionally, unstructured activities may be more centered on building a collaborative social relationship as opposed to competition with another peer. Unstructured activities also might allow relatively greater room for both peer and parent facilitation of the social experience. For example, in unstructured settings parents can select peers who will cooperate and assist their child's social acquisition, which is not the case in structured situations such as sports teams. With careful selection of playmates and activities focusing on the child's strengths, there is an increased likelihood for a child to have a positive social experience. As these positive interactions accumulate, it is possible that children with

cognitive and learning disabilities will build their self-confidence and possibly increase their desire to engage more with peers. Future investigations should probe further regarding parents' motivation for selecting different types of extracurricular activities for their child and the role of peers within these activities.

Previous studies have underscored the importance of the quality of a child's involvement within an activity (Bedell et al., 2013). Through evaluating the different factors (e.g., number of children involved in activity, peer and parent facilitation) that children experience within structured and unstructured activities, there can be an increased understanding of how to provide more effective social interventions. It may be helpful to randomly assign children to unstructured and structured activities and assess their social functioning before and after their participation to better examine the causal impact of activity type on social development. This line of research may benefit from comparing the role of activity participation within other populations, like children with autism spectrum disorders (ASD), that also have social deficits. It may be the case that children with ASD require extracurricular activities that differ from children with ID to foster social development.

The final aim of this study was to explore group differences in activity participation and the influence on social competence. It was predicted that structured activities would have a greater effect on social competence for the ID and LD groups in comparison to the typically developing comparison group. Generally, it was found that, compared to the typically developing group, children with ID performed lower on both ratings of social competence, whereas children with LD performed lower on social competence as measured by the ABS, but not as measured by the PSTRS. Also, as observed in the second hypothesis, unstructured activity participation resulted in higher ratings of social competence whereas structured activities resulted in lower

ratings of social competence. Amount of time spent in unstructured or structured activities had similar effects for children with LD and their typically developing peers.

Of note was one interaction between ID group and activity type. Greater participation in unstructured activities had a stronger impact on the social competence of children with ID than their typically developing peers. These findings partially support the hypothesis that different types of extracurricular activities benefit the social development of children with ID than TD peers. Contrary to the original hypothesis, unstructured activities as opposed to structured activities may be especially beneficial for children with ID. As found in Bedell et al. (2013), children with ID spend more time engaged in activities like getting together with friends as opposed to structured activities. More time spent in unstructured activities may help children with ID deepen existing relationships and improve social competence. Unstructured activities may provide children with ID a safe place to learn and practice social skills while they receive corrective feedback from peers. For example, if a child with ID begins to use unskillful social strategies during a play date, their peer or the parent would have a chance to intervene and offer a more effective strategy to use in the future. Children with ID would also be able to select their favorite games during the play date, making the social interaction more rewarding and less overwhelming. As children with ID spend more time involved in positive social exchanges with peers during these unstructured activities, they may develop a greater sense of efficacy in their ability to relate with others.

It is important to take into consideration the limitations of this study when interpreting the results. First, the methodology of this investigation could be enhanced with standardized measures of activity participation, as well as a standardized measure of social competence (e.g., (SSRS; Gresham & Elliott, 1990). Although the ABS Socialization domain was used in order to

enhance the validity of social competence, this investigation would benefit from using measure that more specifically assess the skills and abilities that come from peer interactions.

Additionally, this study would benefit from additional reporters or naturalistic observations of social functioning to further assess the complexity of social functioning. Future research would be enhanced by assessing the influence of structured and unstructured activities on ratings of social competence based on sociometric status diagrams, and teacher report. For example, Locke et al., (2010) used a friendship survey in order to see who adolescents were spending time with using a free recall list, as well as information regarding the child's social networks. Through this method, researchers not only gain insight on which children are spending time with others but also a child's perception of their social environment (Locke, Ishijima, Kasari, & London, 2010).

This study could also be improved by quantifying the time spent in extracurricular activity participation in different ways. For the purpose of this investigation, information was gathered about how often the child was involved in an activity (e.g., daily, weekly, monthly). More detail should be gathered about the intensity (e.g., hours per day) of activity participation as well as quality of activity participation (Bedell et al., 2013). It is possible that even though a child may participate in several extracurricular activities, they may not be fully engaged in the activity. The number of children involved within each activity could also help further explain differences between structured and unstructured activity participation. It is possible that despite providing scaffolding for peer relationships, structured activity participation may be overwhelming for certain children due to group size or cognitive demands. It may also prove beneficial to look at differences in specific structured activities (sports as opposed to clubs) to gain more detailed information about the influence of different types of structured activities.

Finally, the discrepancy between the sample sizes of the three groups may have reduced the ability to identify a small effect.

To date, there is a paucity of research exploring the influence of unstructured and structured extracurricular participation on the social competence of children with ID and LD. The overall findings from this investigation suggest that generally children's social competence may benefit from unstructured activity participation. Although this study has some promising findings, further research within larger samples will be necessary to understand the relationship between extracurricular activity participation and social development in children with ID and LD.

REFERENCES

- Abells, D., Burbidge, J., & Minnes, P. (2008). Involvement of adolescents with intellectual disabilities in social and recreational activities. *Journal on Developmental Disabilities*, 14(2), 88-94. Retrieved from EBSCOhost. doi:10.1111/j.1468-3148.2009.00525.x
- Achenbach, T. M. (1991). Manual for the child behavior checklist/4-18 and 1991 profile. Burlington, VT: University of Vermont, Department of Psychiatry.
- Bauminger, N., Edelsztein, H., & Morash, J. (2005). Social information processing and emotional understanding in children with LD. *Journal of Learning Disabilities*, 38(1), 45-61. Retrieved from EBSCOhost. doi: 10.1177/00222194050380010401
- Bedell, G., Coster W., Law, M., Liljenquist, K., Kao, Y., Teplicky R., ... Khetani, M.A. (2013). Community participation, supports, and barriers of school-age children with and without disabilities. *Archives of Physical Medicine and Rehabilitation*, 94, 315-323.
- Bellanti, C. J., & Bierman, K. L. (2000). Disentangling the impact of low cognitive ability and inattention on social behavior and peer. *Journal of Clinical Child Psychology*, 29(1), 66-75.
- Bielecki, J., & Swender, S. L. (2004). The assessment of social functioning in individuals with mental retardation: A review. *Behavior Modification*, 28(5), 694-708.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, NJ: L. Erlbaum Associates.
- Cook, F., & Oliver, C. (2011). A review of defining and measuring sociability in children with intellectual disabilities. *Research in Developmental Disabilities*, 32(1), 11-24. Retrieved from EBSCOhost. doi: 10.1016/j.ridd.2010.09.021
- Embregts, P., & van Nieuwenhuijzen, M. (2009). Social information processing in boys with autistic spectrum disorder and mild to borderline intellectual disabilities. *Journal of Intellectual Disability Research*, 53(Part 11), 922-931.
- Eriksson, L., Welander, J., & Granlund, M. (2007). Participation in everyday school activities for children with and without disabilities. *Journal of Developmental & Physical Disabilities*, 19(5), 485-502. doi:10.1007/s10882-007-9065-5
- Fletcher, A. C., Nickersan, P., & Wright, K. L. (2003). Structured leisure activities in middle childhood: Links to well-being. *Journal of Community Psychology*, 31(6), 641. doi:10.1002/jcop.10075

- Freeman, S., & Alkin, M. (2000). Academic and social attainments of children with mental retardation in general education and special education settings. *Remedial and Special Education*, 21(1), 3-26. Retrieved from EBSCOhost. doi: 10.1177/074193250002100102
- Ghosh, D., & Datta, T. (2012). Functional improvement and social participation through sports activity for children with mental retardation: A field study from a developing nation. *Prosthetics & Orthotics International*, 36(3), 339-347. Retrieved from EBSCOhost. doi:10.1177/0309364612451206
- Gilman, R. (2001). The relationship between life satisfaction, social interest, and frequency of extracurricular activities among adolescent students. *Journal of Youth and Adolescence*, 30(6), 749-767.
- Gresham, F. M., & MacMillan, D. L. (1997). Social competence and affective characteristics of students with mild disabilities. *Review of Educational Research*, 67(4), 377-415.
- Gresham, F. M., & Reschly, D. J. (1986). Social skill deficits and low peer acceptance of mainstreamed learning disabled children. *Learning Disability Quarterly*, 9(1), 23-32.
- Guralnick M.J., Connor R.T., Johnson C.L. (2009) Home-based peer social networks of young children with Down syndrome: A developmental perspective. *American Journal on Intellectual and Developmental Disabilities*, 114 (5), 340-355. doi:10.1352/1944-7558-114.5.340
- Guralnick, M. J., Neville, B., Hammond, M. A., & Connor, R. T. (2007). The friendships of young children with developmental delays: Alongitudinal analysis. *Journal of Applied Developmental Psychology*, 28(1), 64-79.
- Guralnick, M. (2002). Involvement with peers: comparisons between young children with and without Down's syndrome. *Journal of Intellectual Disability Research*, 46(5), 379-393. doi:10.1046/j.1365-2788.2002.00405.x
- Guralnick, M. J. (1997). Peer social networks of young boys with developmental delays. *American Journal on Mental Retardation*, 101595-612.
- Guralnick, M. J. (1990). Major accomplishments and future directions in early childhood mainstreaming. *Topics in Early Childhood Special Education*, 10(2), 1.
- Gresham, F.M., & Elliot, S.N. (1990). Social Skills Rating System. Circle Pines, MN: American Guidance Service, Inc.
- Grusec, J. E., & Abramovitch, R. (1982). Imitation of Peers and Adults in a Natural Setting: A Functional Analysis. *Child Development*, 53(3), 636. doi:10.1111/1467-8624.ep8588507

- Harper, L. V., & Huie, K. S. (1985). The effects of prior group experience, age, and familiarity on the quality and organization of preschoolers' social relationship. *Child Development*, 56(3), 704. doi:10.1111/1467-8624.ep7252243
- Heiman, T., & Margalit, M. (1998). Loneliness, depression, and social skills among students with mild mental retardation in different education settings. *Journal of Special Education*, 32(3), 154.
- Hetherington, E. M., Parke, R. D., Gauvain, M., & Locke, V. O. (2006). Expanding the social world : peers and friends. *Child psychology :A contemporary viewpoint* (pp. 506-545). Boston : McGraw-Hill.
- Howie, L., Lukacs, S., Pastor, P., Reuben, C., & Mendola, P. (2010). Participation in activities outside of school hours in relation to problem behavior and social skills in middle childhood. *Journal of School Health*, 80(3), 119-125. doi:10.1111/j.1746-1561.2009.00475.x
- Kavale, K. A., & Mostert, M. P. (2004). Social skills interventions for individuals with learning disabilities. *Learning Disability Quarterly*, 27(1), 31. doi: 10.2307/1593630
- King, G., Law, M., King, S., Rosenbaum, P., Kertoy, M., & Young, N. (2003). A conceptual model of the factors affecting the recreation and leisure participation of children with disabilities. *Physical & Occupational Therapy in Pediatrics*, 23(1), 63-90.
- Ladd, G.W. (1992). Themes and theories: Prospectives on processes in family-peer relationships. In R.D. Parke & G.W. Ladd, (Eds.) *Family-Peer relationships: Modes of linkage* (pp. 3-34). Hillsdale, NJ: Lawrence Erlbaum Associates
- Ladd, G.W., Le Sieur, K.D., & Profilet, S.M. (1993). Direct parental influences on young children's peer relations. In S. Duck (Ed.) *Learning about relationships* (pp. 152-183). Newbury Park, CA: Sage Publications, Inc.
- Larson, R. W., & Verma, S. (1999). How children and adolescents spend time across the world: Work, play, and developmental opportunities. *Psychological Bulletin*, 125(6), 701-736. doi:10.1037/0033-2909.125.6.701
- Lamb, M. E., & Roopnarine, J. L. (1979). Peer influences on sex-role development in preschoolers. *Child Development*, 50(4), 1219. doi:10.1111/1467-8624.ep7251780
- Lambert, N., Nihira, K., & Leland, H.(1992). *AAMR Adaptive Behavior Scale School* (2nd ed.). Austin, TX: PRO-ED.
- Leffert, J., Siperstein, G., & Widaman, K. (2010). Social perception in children with intellectual disabilities: the interpretation of benign and hostile intentions. *Journal of Intellectual Disability Research*, 54(Part 2), 168-180. doi:10.1111/j.1365-2788.2009.01240.x

- Locke, J., Ishijima, E. H., Kasari, C., & London, N. (2010). Loneliness, friendship quality and the social networks of adolescents with high-functioning autism in an inclusive school setting. *Journal of Research in Special Educational Needs*, 10(2), 74-81.
- Mahoney, J. L. (2000). School extracurricular activity participation as a moderator in the development of antisocial patterns. *Child Development*, 71(2), 502-516.
- Mahoney, J. L., Cairns, B. D., & Farmer, T. W. (2003). Promoting interpersonal competence and educational success through extracurricular activity participation. *Journal of Educational Psychology*, 95(2), 409-418. doi:10.1037/0022-0663.95.2.409
- Nezu, C., Nezu, A. M., Rothenberg, J. L., & DelliCarpini, L. (1995). Depression in adults with mild mental retardation: Are cognitive variables involved?. *Cognitive Therapy and Research*, 19(2), 227-239. doi:10.1007/BF02229696
- Nihira, K., Leland, H., & Lambert, N. (1993). AAMR Adaptive Behavior Scale-Residential and Community, Second Edition.
- Ochoa, S., & Olivarez Jr., A. (1995). A meta-analysis of peer rating sociometric studies of pupils with learning disabilities. *Journal of Special Education*, 29(1), 1.
- Ramseyer, G. C. (1979). Testing the difference between dependent correlations using the Fisher Z. *Journal of Experimental Education*, 47(4), 307-310.
- Rubin, K., Bukowski, W., & Parker, J. (2006). Peer interaction and social competence. In W. Damon & R.M. Lerner (Series Eds.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol.3* (6th ed.). New York: Wiley.
- Siperstein, G., Glick, G., & Parker, R. (2009). Social inclusion of children with intellectual disabilities in a recreational setting. *Intellectual & Developmental Disabilities*, 47(2), 97-107. doi:10.1352/1934-9556-47.2.97
- Sparrow, S. S., Balla, D., & Cicchetti, D. V. (1984). Vineland adaptive behavior scales (Survey ed.). Circle Pines, MN: American Guidance Service.
- Sparrow, S.S., Cicchetti, D.V., & Balla, D. (2005). Vineland adaptive behavior scales (2nd ed.). Minneapolis, MN: Pearson Assessment.
- Solish, A., Perry, A., & Minnes, P. (2010). Participation of children with and without disabilities in social, recreational and leisure activities. *Journal of Applied Research in Intellectual Disabilities*, 23(3), 226-236. doi:10.1111/j.1468-3148.2009.00525.x
- Stinnett, T. A., Fuqua D.R., Coombs, W.T. (1999). Construct validity of the AAMR Adaptive Behavior Scale-School: 2. *School Psychology Review*, 28(1), 31.

- Vaughn, S., Elbaum, B., & Schumm, J. (1996). The effects of inclusion on the social functioning of students with learning disabilities. *Journal of Learning Disabilities*, 29(6), 598-608.
- Watkins, M. W., Ravert, C. M., & Crosby, E. G. (2002). Normative factor structure of the AAMR Adaptive Behavior Scale-School, Second Edition. *Journal of Psychoeducational Assessment*, 20(4), 337-345.
- Wiener, J. & Tardif, C.Y. (2004). Do peer relationships foster behavioral adjustment in children with learning disabilities? *Learning Disability Quarterly*, 27(1), 21. doi: 10.2307/1593629
- Zarbatany, L., Hartmann, D., & Rankin, D. (1990). The psychological functions of preadolescent peer activities. *Child Development*, 61(4), 1067-1080.