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The Social Participation of Young Children with Developmental Disabilities in Inclusive Early Childhood Programs

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Abstract

The study reports an analysis of the social integration of six focus children with developmental disabilities in four preschool programs and their relative competences in relation to the typically developing children in the early childhood programs. For the 85 children in the preschool programs, including the children with developmental disabilities, peer acceptance was measured with sociometric interviews; social competence was rated by teachers; and observations of play activities and social engagement were made during four free play periods. A social constructivist analysis focuses on how learning was supported in the settings and implications are drawn about how opportunities for learning could be extended in inclusive early childhood programs.

Keywords: social competence, inclusive programs, early childhood

A major benefit of inclusive early education for children with developmental disabilities is expected to be a significant gain in social and cognitive competence. Through participation in early childhood programs, children with developmental disabilities are expected to have extended opportunities to engage in social interactions and acquire the requisite skills that lead to increased social acceptance and engagement in learning activities. However, social acceptance is not always the outcome for children with developmental disabilities in inclusive programs (Guralnick, Hammond, Connor, & Neville, 2006). There is evidence that these children may be socially excluded or isolated within early childhood settings. Compared to typically developing children, preschool children with developmental disabilities exhibit lower levels of socially interactive play (Guralnick, Connor, Hammond, Gottman & Kinnish, 1996; Hestenes & Carroll, 2000); form very few reciprocal friendships (Guralnick & Groom, 1988; Guralnick et al., 1996); and are less accepted by both their typically developing peers and other peers with developmental delays (Guralnick & Groom, 1988; Guralnick et al., 1996; Hestenes & Carroll, 2000). Thus, if inclusion is to be successful for these children, new understandings are needed by teachers about how social engagement can be facilitated.

It is an expectation that young children with developmental disabilities should be able to engage meaningfully in all aspects of an inclusive program through a supportive environment that enables these children to form relationships with peers. Social competence difficulties experienced by children with developmental disabilities and the resultant social isolation within inclusive settings are critical issues to be addressed if these children are to reap the benefits of inclusion and access the range of learning opportunities available to their peers. It can no longer be assumed that, a priori, a child is limited in capacities to learn by the presence of developmental limitations. Instead, greater understanding is needed about, and why, children learn as a function of their participation in shared interactions with peers and adults in inclusive settings.

Social competence and social integration of young children with disabilities

Social competence is defined as adaptive functioning within the social environment. Such competence requires abilities to achieve personal goals while maintaining positive relationships with others (Howes, 1988; Rubin & Krasnor, 1992). According to Guralnick (2002), the level of social integration in inclusive programs of young children with developmental disabilities is largely a function of their peer-related social competence. However, understanding the mechanisms though which social competence develops is not well understood for these children. Within inclusive settings, young children with even mild developmental delays exhibit difficulties with peer interaction over and above what might be expected by their developmental status (Guralnick, 1999). Problems in peer-related social competence are evident for many of the important social tasks of early childhood, including peer group entry, conflict resolution and maintaining play, and for broader aspects of social competence such as emotional regulation and social information processing (Guralnick, 2005). These difficulties inhibit opportunities to fully participate in the early childhood programs.

The social separation experienced by young children with disabilities in inclusive settings is the result of two powerful forces. First, child characteristics, in terms of general cognitive, communicative and behavioral problems associated with the child's disability, impact on the child's ability to engage in positive social interactions with peers (Guralnick, 2000). Second, the perceptions or beliefs of typically developing children about children with disabilities may influence the likelihood that they will seek engagement with children with additional needs.

Thus, the teacher has an important role to create a learning community in which all children are valued. Associations have been found between the quality of a teacher-child relationship and peer acceptance of that child (Birch & Ladd, 1997; Hughes, Cavell, & Wilson, 2001). Children are aware of teachers' differential interactions with others and use this information to develop their judgments about their peers' competencies and desirability as social and play partners. Young children are aware of how teacher interactions with their peers differ and use this information to make inferences regarding the teacher's attitude towards other children.

Ecological factors that play a role in successful social integration include the nature of play activities provided by teachers in the setting, as well as the amount of structure and active support for engagement that teachers give. Nabors Willoughby and Badawi (1999) found that children with special needs were more likely to be engaged in play with typically developing peers when the play activities provided made fewer demands on language or cognitive skills. Similarly, Malmskog and McDonnell (1999) reported that increased adult involvement in the play of young children with disabilities resulted in greater engagement of these children in the physical and social environment. However, despite these emerging insights on how ecological factors may impact on social integration, there is limited theorizing that provides a strong conceptualization about how young children with developmental disabilities learn in inclusive programs.

Social constructivist theory and inclusion in early childhood programs

Over the last decade, social constructivist theory has had a considerable impact on early childhood educational practice (Penn, 2005). A social constructivist perspective, the term used to describe the cognitive theory of Vygotsky, focuses on the interdependence of social and individual processes in the development of knowledge (Palinscar, 1998). Vygotsky (1978) emphasized the social orientation of cognitive development: "what the child is able to do in collaboration today, he will be able to do independently tomorrow" (p. 206). Social constructivist theory provides a framework to inform best

practice about inclusion in early childhood programs. Such a perspective has had limited discussion in the inclusion debate (Mallory & New, 1994). It can explain the processes for understanding children's learning and provide guiding principles for teachers in their practices. While naturalistic intervention strategies (Bricker & Cripe, 1992) reflect practices grounded in the theories of Vygotsky, a more explicit recognition of the tenets of social constructivism could inform the manner in which teachers understand children's learning in inclusive settings.

Features of social constructivist theory that contribute to understanding how children might learn within inclusive programs include: the role of social activity in learning; the contributions of the active learner to his or her own development; and the importance of supporting learning through the Zone of Proximal Development (ZPD). Vygotsky (1978) described the ZPD as "the distance between the actual developmental level and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers" (p. 85). Children with developmental disabilities can be supported to engage in increasingly more complex levels of play with peers that can be charted from mere sociability to cooperative play characterized by reciprocal verbal and non-verbal interactions that lead to new social and cognitive understanding. Teachers have the opportunity to understand children's learning through their social interactions with peers and adults.

Rogoff (1990) elaborated the features of social constructivist theory through her conceptualization of apprenticeship, guided participation and participatory appropriation. In optimal circumstances children live in ecological contexts that actively support their apprenticeship role which facilitates their physical, cognitive and social-emotional development. All children regardless of individual differences belong to and should be valued as members of the community. Interactions with companions, adults and children, in social settings such as early childhood programs can provide guidance, support, challenge, and the impetus to learn. Thus the social construction of knowledge (i.e., learning) requires understanding by teachers about guided participation and how children's skills and conceptual knowledge can be enhanced through their social interactions which might be child- or peer-initiated and through the planned activities provided by the adults. Through transactions with more skilled partners children, including those with developmental disabilities, ultimately internalize shared understanding about the norms, practices and values in the setting and increase their ability to function at a more independent level. Teachers can arrange for children's participation in activities and offer resources that support and challenge their thinking. The inclusion of children with developmental disabilities in a community of learners provides all participants with opportunities to learn.

Social constructivist theory can inform understanding about how play interactions with peers support the learning of young children with developmental disabilities in inclusive programs. The potential exists through play for children to learn through their interactions with their peers. Through cooperative play activities, reciprocity between peers develops, as language and actions become more complex. Increased cognitive demands are placed on participants to provide explanations of their actions to peers, negotiate shared understanding of the goals of the play, and solve problems that lead to new learning for all participants. While learning can occur through engagement in solitary play, it is the cognitive challenges afforded through cooperative play that have the potential for significant learning to occur for individuals.

Through the theoretical lens of social constructivism, teachers observe children's level of social and cognitive understanding in their play and plan opportunities to increase the level of social engagement and the cognitive challenges. Teachers can look for teachable moments to provide encouragement or assist the child to sustain engagement (Brown, Odom, & Conroy, 2001). When environments enable

frequent participation in shared activities in which children take responsibility for directing those activities children become skilful in their own right to marshal and build their own scaffolding to enhance their learning (Claxton & Carr, 2004).

Social integration is achieved when young children with disabilities receive sufficient support to make social connections with typically developing children. Thus, it is important to examine the degree of social integration that occurs within inclusive early childhood programs and the conditions under which social connections are made. Increased understanding of the nature of play interactions of young children with developmental disabilities in inclusive settings can inform teacher education and professional development about how the social competencies of children with language and cognitive delays can be enhanced to increase social participation.

Aims of the study

The overall aim of the present study was to investigate the play and social interactions of children with disabilities in inclusive early childhood programs. Specific objectives of the study were to explore the level of social competence of the children with developmental disabilities and the degree of their social acceptance by peers. The extent to which children, with and without disabilities, show a preference for playmates within a group serves as key index of social integration. Additionally, the study examines the nature of the play and social engagement of young children with developmental disabilities with their typically developing peers through an observational analysis of the play activities and the learning environment.

Method

Identification of focus children in inclusive programs

In Queensland, Australia, Special Education Developmental Units (SEDUs) provide early childhood special education programs, including playgroups for very young children, as well as more structured small group programs for children aged 3 to 6 years. Children who attend SEDUs have a diagnosed disability (or are in the process of obtaining a formal diagnosis of disability) in the areas of physical or sensory impairments (visual, hearing), intellectual impairments (II), autistic spectrum disorders (ASD), or language impairments (SLI). The level of impairment of children attending SEDUs can be mild to profound. Children usually attend SEDU programs on a sessional basis. Each week a child is likely to attend for two or more sessions which are generally of three hours duration. On the other three days of the week, these children are likely to attend an inclusive early childhood setting.

Two SEDUs were approached to identify focus children with disabilities in their programs who were also attending regular preschool programs. Criteria for identification of the children in the SEDU to be included in this research project were: children had global developmental delays (likely to be children with diagnoses of II, ASD and SLI); without any sensory or physical impairments; and mild to severe levels of developmental delay.

Four preschools that had children from SEDUs attending were then approached and asked to participate in the project. The preschool teachers negotiated relevant parental permissions for all children in the program to also participate in the study. The final sample comprised 6 focus children who attended an SEDU and 79 children who did not participate in any special education program. In three preschools,

there was one focus child with a disability. In the fourth preschool, there were three focus children attending, including two siblings.

Preschool settings

Preschools in Queensland provide play-based programs in the year before children enter Year 1 of primary school. Children attend preschool in the year that they have their fifth birthday. Preschools offer a part-time and non-compulsory program - either with sessional programs (usually of 3 hours) on five days per week or whole day programs (usually 6 hours) for five days per fortnight. Preschool programs are staffed by a qualified teacher, with a degree in early childhood education and a teacher aide who may hold a certificate level qualification as a teaching assistant.

Preschools usually provide extended periods for free play activities, indoor and outdoor, during the daily program. Preschools in this study typically had indoor activity centers which included an area with props for dramatic play (e.g., home corner); areas for sensory play (e.g., play doh, clay, collage, painting); areas with construction materials (e.g., blocks or lego); and a book corner and activity areas for accessing writing or drawing materials. In the outdoor play area, there are usually areas for sand and water play, as well as fixed and moveable structures for gross motor activities (e.g., climbing, sliding, and an obstacle course).

Participants

For the total sample of 85 children participating across the 4 preschools, the mean age was 60.2 months (SD - 4.38). This sample represented at least 85% of the children within each preschool group. This is an acceptable group participation rate for the use of the sociometric procedure as used in the study. The sample included 36 boys and 49 girls. The 6 focus children (3 boys, 3 girls) had mild to severe developmental delays and diagnosed disabilities of SLI, ASD and II were confirmed by the SEDU. In three preschools, there was 1 focus child, and, in the fourth preschool, there were 3 focus children, including 2 siblings. This latter situation was not viewed as a difficulty for the study focus since many preschools frequently have a number of children with disabilities included and, therefore, is more typical of an inclusive setting. In actuality, this situation revealed some interesting outcomes related to the research objectives. Descriptive information about the focus children is presented in Table 1.

Table 1. Children with Disabilities: Gender, Age and Description of Disability

Focus children	Gender	Age (months)	Description of Disability
Kassie	Female	72	Severe Speech and Language Impairment
Amy	Female	77	Down Syndrome
Gary	Male	70	Autistic Spectrum Disorder
Kelly	Female	60	Down Syndrome
Mark	Male	64	Speech and Language Impairment
Liam	Male	60	Speech and Language Impairment

Procedure and measures

Data were collected for all participating children through individual sociometric interviews, teacher ratings of children's social competence, and observations of children's social and play activities during free play sessions. The data was collected late in the preschool year in order to ensure that the focus

children were familiar with the setting, peers and teachers, as well to ensure that the typically developing peers were also familiar with the focus children.

Sociometric measure

Sociometric interviews were conducted with all participating children to measure children's social status. Social status is the level of peer acceptance of a child within the peer group. A child's status was assessed using a sociometric technique that requires children to state their preference for other children according to specific characteristics, such as how much they like to play with another child. The advantage of sociometric measures is that they are peer reports, as opposed to parent or teacher ratings of social acceptance, and thus provide information about a child's status from the viewpoint of their peers. In the present study, sociometric data were collected using a three-point play rating scale. Children were asked to rate each other child in the group according to how much they liked to play with them. Sociometric rating scales are reliable and valid measures of peer acceptance with preschool-aged children (Asher & Hymel, 1981; Olson & Lifgren, 1988; Maassen, van Boxtel, & Goossens, & Bokhorst, 2005; Wasik, 1987). The use of rating scales to rate each other child also enabled reciprocal friendships to be identified.

Prior to commencing the sociometric interviews, a photograph was taken of each child in the preschool group for whom parental permission had been obtained for participation. The use of photographs increases the reliability of the sociometric measure for preschool-aged children (Asher & Hymel, 1981). Although the prime purpose in the use of the measure was to gauge the level of peer acceptance of the focus children by the other children in the preschool group, the focus children participated. The experienced research assistant who administered the sociometric measure considered that, through the use of the procedure to teach children about the task (described in the next paragraph), the focus children did understand the intent of the task and completed it successfully.

In the present study, plastic models of a variety of fruit (e.g., apple, banana, lemon) were used to teach children how to rate their preferences. Children were prompted to sort the presented food models into one of three boxes representing "I like this a lot", "I like this a little bit or sometimes" and "I don't like this very much". Once children demonstrated that they understood the task, photographs of each of the children's classmates were presented in turn and children were asked to post the photograph into one of three boxes representing "I like to play with this child a lot", "I like to play with this child a little bit or sometimes" and "I don't like to play with this child". A score from 1 ("I don't like to play with this child") to 3 ("I like to play with this child a lot") was assigned to each box.

For each child an average (mean) play rating was computed from the peer ratings across their preschool group. From this mean play rating, social status categorizations of popular, average and unpopular could be determined. The raw scores for the children within each preschool group were standardized in order to remove the effects for group size variations. A child with a high score, defined as a z score of at least +1.0, was classified as popular. A child with a low score, defined as a z score of -1.0 or lower, was classified as unpopular. Children with z scores between -1.0 and +1.0 were classified as average.

Teacher ratings of social competence

Focus children's social competence was measured by teacher report using the *Profile of Peer Relations*. This inventory is used to assess children's typical social and play behaviors with their peers (Walker, Irving & Berthelsen, 2002; Walker, 2005). Teachers were asked to rate the competence of children on

the identified social and play behaviors. The items assess the frequency of positive and negative play behaviors; strategies used by children when attempting to gain entry into the play of other children; involvement in conflict situations; and use of conflict resolution strategies. There are 23 items on the inventory. Ratings are made on a four-point scale with a range of 1 (rarely) to 4 (almost always). There are three scales derived from factor analyses on the inventory. These are called *Prosocial Behavior* (8 items); *Aggressive Behavior* (9 items); and *Withdrawn Behavior* (6 items). Item ratings are summed and mean scores are derived for each scale.

Observations of social engagement and play activities

Observations of social and play activities were made in each preschool for 4 free play periods, each of 1 hour in duration, across a period of 2 to 3 weeks. Observations were made of all children for whom parental permission had been given who were present in the preschool group on each occasion. A time sampling technique was used to record each child's social and play activities at 5 minute intervals in each observation session. Observations of all children in the group were possible by using a location plan of the physical environment, for indoors and outdoors, and noting additional activities set up in the indoor and outdoor environment on any day, prior to beginning the time-sample observations. The observer then was able to systematically observe each area of the indoor or outdoor environment using a rotational system to observe each location in the preschool environment and the activities of each child at any location within the 5 minute time blocks. A similar observational procedure has been used by Hestenes and Carroll (2000). The research assistant had completed the sociometric procedure with each child prior to the observations, and completed the observation sessions in each preschool on a sequential basis, so she could readily identify each child in the group during the observation sessions.

The observational categories focused on two dimensions of the children's engagement in play activities and recorded at each interval. The categorization scheme was adapted from that used by Hestenes and Carroll (2000). The observational dimensions are *Social Engagement* and *Play Activities.* The *Social Engagement* categories used in this study were titled cooperative play, social conversation, parallel play, onlooker play, solitary play, transition between activities, unoccupied, and teacher interactions. The *Play Activities* categories were pretend play, sensory play, construction play, literacy activities, gross motor play, and functional play. These categories are defined in Table 2.

Table 2. Description of Observational Coding Categories

Category	*Description*
Social Engagement	
Cooperative play	Child is actively engaged in play with others with reciprocal verbal and non-verbal interactions for sustained periods.
Social conversation	Child engages in conversational turn-taking for at least 10 seconds.
Parallel play	Child is engaged in play close to others who have similar activities but is not interacting.
Onlooker play	Children is watching activities of others' without interaction.
Solitary play	Child is engaged with materials but not with other children.
Transitions	Child is moving between activities.
Unoccupied	Child is alone and not actively engaged.
Teacher interaction	Child is interacting with an adult in the setting.

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Table 2 Continued
Play activities

Pretend play	Pretend activities with props including dramatic role play.
Sensory play	Play with materials, such as dough, paint, water and sand.
Construction play	Play with manipulative materials, such as blocks and puzzles.
Literacy activities	Activities with writing, numbers/letters games, including looking at books.
Gross motor activities	Large motor activities with fixed or moveable equipment, including obstacle courses, balls and bicycles.
Functional activities	Child uses simple repetitive movements with or without objects.

The observational schema encompassed both more complex behaviors and low demand behaviors that require different levels of communicative and cognitive competence (Nabors et al., 1999). For social engagement, cooperative play and social conversation could be considered of higher demand because language between peers is required to sustain interactions. Lower social demand categories were parallel, onlooker and unoccupied play. For solitary behavior, the level of cognitive demand in a problem-solving task (e.g., completing a puzzle) may be high so no assumptions were made about the level of demand. For play activities, pretend play was considered of higher demand and functional activities were considered as low demand. There were no assumptions made about the level of cognitive demand for transition between activities, teacher interaction, or the other play categories. It also cannot be assumed that children will engage in high demand social and cognitive activities at all times. The level of social engagement and complexity in the nature of the play in which children engage may vary considerably across any play period. However, it was expected that the focus children with developmental disabilities would spend less time in social and play activities that placed higher demand on their social and cognitive competencies.

Across the 4 observation sessions, the number of observations per focus child ranged from 36 to 44 with a mean number of observations per child of 40. Prior to the start of the observational sessions, the research assistant and one researcher in the study trialed the observational system in a preschool not included in the research and reviewed the categories through discussion after observational sessions to arrive at a final version of the observational measure. Within the main study, the same researcher and the research assistant independently used the observational system for 10% of the total observations obtained in the study. Interobserver agreement for categorizing the behaviors on each dimension for the observation sessions in which two observers participated averaged 80.47% agreement. The data collection was completed by 1 research assistant. She was a qualified early childhood teacher and she had previous experience in observational research in early childhood settings.

Findings

In this section, comparisons between the typically developing group and the focus group of children with disabilities are made on the various measures.

Peer acceptance

Peer acceptance was determined by identification of a child's social status within the peer group and the number of mutual friendships that exist between children using the data from the sociometric interviews. For each child, an average play rating was obtained and social status categorization of

popular, average or unpopular was determined from the standardized play rating score. For all participating children: 11 children were classified as popular, 62 classified as average, and 12 classified as unpopular. Of the 6 focus children with disabilities, 4 were classified as average and 2 were classified as unpopular. Mutual or reciprocal friendships exist when children name each other as preferred play mates. Each of the focus children had at least one reciprocal friendship (i.e., for a child identified as a preferred play mate by a focus child, at least one other child also rated the focus child as a preferred play mate). These findings for peer acceptance and mutual friendships suggest that the focus children in the present study were socially included to a reasonable extent within their peer group.

Social competence

The level of social competence of the children was based on teacher reports from the *Profile of Peer Relations*. Data from teacher ratings were available for 80 children in the study. Children's scores were derived for prosocial, aggressive and withdrawn behaviors. A comparison of means on each factor scale for the focus children and typically developing children indicated that, as a group, the focus children were rated as less likely to engage in prosocial behavior; more likely to engage in aggressive behavior; and more likely to engage in withdrawn behaviors than typically developing children.

Non-parametric tests of significance (Mann-Whitney U, *p < 0.05,* two-tailed) were used to test for differences on the mean scale scores between the groups of typically developing peers and the group of focus children with disabilities. Non-parametric tests require no assumptions to be met about the distribution of scores; involve rank ordering to minimize the possible effects of outliers; and differences in sample size between the groups can be accommodated (Siegel, 1956).

The findings from the tests of significance between the groups are, strictly speaking, not generalizable to any specific larger population which is possible when inferential statistics are used. However, given the manner of recruitment the findings may not be dissimilar to those that would be found with comparable samples of children in similar early childhood settings.

The results from the non-parametric tests, found significant differences between the two groups for all 3 scales on the social competence measure. Focus group children were less socially competent by teacher report for prosocial behavior (Mann-Whitney U = 68.00, *p = 0.017*), more aggressive (Mann-Whitney U = 37.50, *p = 0.002*), and more likely to be withdrawn (Mann-Whitney U = 74, *p = .023*). Means and standard deviations for each of these subscales and the results of the tests of significance for group differences are presented in Table 3. Therefore, from the teacher ratings, the children with disabilities in this study were identified as less socially competent then their typically developing peers.

Table 3. Profile of Peer Relations: Means, standard deviations, and significance of group Differences

Social competences Scales	Focus Children (n=5)		Typically developing children (n=75)		Mann-Whitney U	
	M	SD	M	SD	U	p
Prosocial	2.31	.44	3.01	.61	68.00	.017
Aggressive	2.16	.28	1.34	.50	37.50	.002
Withdrawn	1.94	.26	1.60	.46	74.00	.023.

Social engagement and play behaviors

Social engagement

Observations were made of children's social engagement that reflected, in part, the level of social demand in the observed behaviors. Cooperative play and social conversation were considered of higher demand because language between peers is required to sustain such interactions. Lower social demand categories were parallel, onlooker play and unoccupied play.

The proportion of the number of observations in which each child was observed to be engaged in each type of social engagement to the total number of observations for social engagement for that child was calculated. There was wide variation in the nature of children's social engagement. In Table 4, the proportions for each category for focus children and typically developing children are presented. As discussed in the previous section, non-parametric tests of significance (Mann-Whitney U, $p < 0.05$, two-tailed) were used to test for proportional differences between the groups on each social engagement category. There were no significant differences between groups on any category. While these results must be considered with caution because of the differences in the sizes of the groups compared, they indicate that the focus children were able to participate socially in the preschool settings with comparable engagement levels to typically developing children across all categories of social behavior.

Table 4. Social engagement: Means, standard deviations and significance of group differences

Social engagement	Focus Children (n=6)		Typically Developing Children (n=78)		Mann-Whitney U	
	M	SD	M	SD	U	p
Cooperative play	20.89	9.78	24.97	16.56	216.00	.755
Social conversation	23.47	3.65	25.83	10.76	195.00	.498
Parallel play	22.10	11.67	28.43	16.03	177.00	.322
Onlooker play	4.82	5.51	4.04	5.06	222.50	.836
Solitary play	9.24	7.03	5.18	5.56	149.00	.135
Transitions	2.94	2.97	3.10	4.02	221.50	.817
Unoccupied	3.98	3.79	3.57	5.85	185.00	.345
Teacher interaction	17.05	10.19	11.88	9.47	149.00	.139

Play activities

The proportional frequency for the number of observations in which each child was observed to be engaged in each type of play activity to the total number of observations made for play activities was calculated. Observations made of children's play, in part, reflected the level of complexity of the play, pretend play was considered of higher demand because language between peers was required in such play interactions. Functional play was considered of low cognitive demand. In all other categories, there may be more of less cognitive demand and complexity. As for the observations of social engagement, there was considerable variation in the proportional frequencies in which children engaged in different activities within, and across, the groups. In Table 5, proportional differences for the nature of play are presented. The differences between the proportions were tested using the non-parametric test, Mann-Whitney U. There were no significant differences between the groups on the proportion of time that children engaged in any of the play activities. This indicates that all the focus children were capable of engagement in the various levels of play.

Table 5. Play activities: Means, standard deviations, and significance of group differences

Play Activities	*Focus Children (n-6)*		*Typically Developing Children (n=78)*		*Mann-Whitney U*	
	M	SD	M	SD	U	p
Pretend play	17.53	8.20	18.09	16.39	195.00	.498
Construction play	19.38	16.86	20.49	19.19	218.50	.788
Sensory play	12.52	12.34	27.11	22.45	137.00	.092
Literacy activities	1.22	2.04	5.18	8.12	156.00	.155
Gross motor activities	13.52	8.86	7.61	8.81	130.00	.068
Functional activities	24.30	19.53	12.16	12.14	133.00	.078

Discussion

A current theme in education is 'learning how to learn'. Inclusion in integrated settings can afford such opportunities to children with developmental disabilities. Using a social constructivist perspective can lead to increased professional understanding of how the learning of young children with developmental disabilities can be facilitated in inclusive settings. Previous research has indicated that young children with disabilities are often socially isolated or excluded within inclusive early childhood settings (Guralnick et al., 2006). The present study explored this proposition in Australian preschool settings. While overall, the focus children had fewer reciprocal friendships than the typically developing children, there was enough evidence to support the impression that the focus children were capable of more extensive and productive social engagement than the programs, in general, afforded.

While the sample size of focus children was small, nevertheless there was evidence of their social acceptance by peers. This is in contrast to Guralnick and Groom (1988) who reported that preschool children with even mild developmental delays were isolated within "mainstreamed" programs and rarely formed reciprocal friendships. However, the findings in this study are in line with Hestenes and Carroll (2000) who in an observational study found that typically developing children spent less time interacting with children with disabilities than might be expected given the proportion of children with and without disabilities in the preschool classrooms. While the focus children in the present study all had at least one reciprocal friendship, it is worth noting that several of these friendships were formed with other children who might also be experiencing social difficulties or who also had a developmental disability. Guralnick (1996) suggested that the formation of a reciprocal friendship is both socially and cognitively demanding and highly dependent on children's overall peer-related social competence. Our findings suggest that, in the absence of appropriate intervention, children will be unlikely to develop the skills required to enable them to sustain reciprocal friendships with their typically developing peers.

As a group, compared to their typically developing peers, children with developmental disabilities in this study were rated by their teachers as more likely to engage in aggressive and withdrawn behaviors and less likely to engage in prosocial behaviors. Broadhead (2001, 2006) noted that, for social engagement, children need to draw simultaneously on skills in a number of areas including initiating and sustaining interactions, successfully entering play, and developing a shared sense of direction and goal orientation. For positive social interactions to occur, children must have the skills not only to engage in cooperative behaviors but also to enter play groups and maintain play (Guralnick, 2001). Mahoney, Robinson, and Powell (1992) found that children with disabilities were more likely to initiate play activities with their peers in programs where adults were responsive and child-centered in their practice than in programs that were teacher directed and oriented to direct instruction. Yoder, Kaiser, and Alpert (1991) also

found that child centered teaching practices resulted in greater gains in communication skills for children with severe disabilities than did direct instruction.

A child's learning is not a straight forward progression from sociability to cooperation in learning through reciprocal and cognitive engagement with peers. Progress in learning for the child can be enhanced or impeded by what teachers understand about young children's capacities for learning and the quality of play opportunities afforded to them to engage with others. Through scaffolding, teachers can help to build relationships with peers to nurture reciprocity and sustain interactions. Progress in learning for young children with disabilities can arise from two sources, from within the child and beyond the child. A key factor in drawing these two sources together is the quality of the teacher's knowledge, thinking and decision-making (Bennett, Wood & Rogers, 1997) and the teacher's capacity to take advantage of the teachable moment (Brown et al., 2001) which provides the scaffolding needed for learning.

The key elements in a social constructivist approach is the emphasis on the value of culturally relevant social activities and the recognition of the contributions that individuals make to their own learning. It underscores the important role of teaching for cognitive development. Social constructivism can inform effective practices that are applicable to the broad range of abilities of children who participate in inclusive classrooms. The teaching strategies employed can be driven by common principles. Mallory and New (1994) identify the following principles: the inclusive classroom functions as a community of learners to accommodate and value everyone; children with developmental disabilities require direct instruction on the part of adults so that they acquire functional competence in specific skills; social relationships are the catalyst for learning so that materials and activities provide all young children with opportunities for cooperative play that can accommodate different levels of competencies; and children are provided with opportunities to play together in activities that reflect their interests which, in turn, motivate them to engage in cooperative play.

Social communication is the basis on which an integrated teaching-learning process can take place. The pedagogical implications of social constructivist theories are that teachers need to pay close attention to the learner, the nature of the tasks in which children engage; and to their own role in supporting learning (Wood & Bennett, 1999). Teachers have a responsibility to set the scene, to orchestrate the resources and activities in a way that creates an inviting and potentiating environment for all of the children (Claxton & Carr, 2004). If collaboration is the goal then teachers can arrange situations for engagement as necessary. Teachers can scaffold children's learning trajectories and direct children's attention toward aspects of situations that are judged to be important. A social constructivist perspective entails a view that teachers have a responsibility for understanding the nature and level of each child's learning and to use that knowledge to construct their practices in a way that is relevant for particular children in particular contexts. Such a perspective can inform practices for inclusion that are based on a very dynamic model of children's learning.

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