

# The Relationship Between Preschoolers' Attitudes and Play Behaviors Toward Classmates With Disabilities

Topics in Early Childhood Special Education  
2015, Vol. 35(1) 40–51  
© Hammill Institute on Disabilities 2014  
Reprints and permissions:  
sagepub.com/journalsPermissions.nav  
DOI: 10.1177/0271121414554432  
tecse.sagepub.com



SeonYeong Yu, PhD<sup>1</sup>, Michaelene M. Ostrosky, PhD<sup>2</sup>,  
and Susan A. Fowler, PhD<sup>2</sup>

## Abstract

This study was conducted to examine the relationship between 32 typically developing preschoolers' attitudes and play behaviors toward their classmates with disabilities or developmental delays. Children's attitudes toward peers with disabilities were assessed using three methods: child interviews, sociometric peer ratings, and a social acceptance scale. Children's play behaviors (e.g., solitary, onlooker, parallel play, associative/cooperative play) and teachers' involvement in children's play were observed during free play over a 10-week period. Results revealed that children's identification of a classmate with an Individualized Education Program (IEP) as having a disability was negatively related to their associative/cooperative play with the classmate. Typically developing children's sociometric ratings of classmates with disabilities were positively related to their associative/cooperative play with classmates with disabilities. In addition, children's sociometric ratings were a stronger indicator of whether a typically developing child would play with a classmate with a disability than was identification of a classmate as having a disability. Suggestions for future research and implications for practice are discussed.

## Keywords

attitude, play, peer relationships, disabilities, inclusion

The inclusion of children with disabilities in classrooms with typically developing peers has become a primary service option in early childhood special education (e.g., Odom, 2000; Sandall, Hemmeter, Smith, & McLean, 2007). However, one of the challenges teachers face is creating a classroom community where typically developing children understand and accept students with disabilities as peers and friends. Research has shown that children in inclusive classes, who had social contact with classmates with disabilities, had more positive attitudes than other children who rarely spent time with their classmates with disabilities (Diamond & Hestenes, 1994; Diamond, Hestenes, Carpenter, & Innes, 1997). These studies suggest that the ways in which children think about and respond to peers with disabilities may influence their play with peers with disabilities (Diamond & Tu, 2009).

A conceptual scheme developed by Triandis (1971) includes three components of attitude formation: cognitive, affective, and behavioral components. In the case of young children's attitude formation toward their peers with disabilities, the cognitive component includes knowledge about disabilities and beliefs about the causes and consequences of having a disability. The affective component refers to emotional reactions that occur in response to peers

with disabilities. The behavioral component of attitude formation refers to a predisposition to act in a certain manner, such as to engage in play or ignore peers. Most of the attitude research has focused on measuring cognitive and affective aspects of attitudes such as children's identification of peers as having a disability, understanding of disabilities, acceptance of peers with disabilities, or reported preference or willingness to play with peers with disabilities. Only a few studies have included behavioral aspects of attitudes (e.g., how children behave toward peers with disabilities; e.g., Diamond, 2001; Hestenes & Carroll, 2000; Okagaki, Diamond, Kontos, & Hestenes, 1998).

Researchers who have studied this relationship have focused on the following research questions: "Do children who interact frequently with peers with disabilities tend to have more positive attitudes?" and "Are children who have positive attitudes toward peers with disabilities more likely

<sup>1</sup>University of Massachusetts Amherst, USA

<sup>2</sup>University of Illinois, Champaign, USA

## Corresponding Author:

SeonYeong Yu, University of Massachusetts Amherst, 211 Furcolo Hall,  
813 N. Pleasant St., Amherst, MA 01003, USA.  
Email: seonyeon@educ.umass.edu

to interact with peers with disabilities?" For example, Okagaki et al. (1998) measured the social play of 36 preschoolers by coding whether the target child was engaged in play behaviors with a peer (including social play and parallel play) and whether the child was playing with a typically developing peer or a peer with a disability. The researchers also assessed children's social acceptance of hypothetical children with and without disabilities and children's willingness to play with hypothetical children. They found that children who were more willing to play with hypothetical children with disabilities were more likely to interact with classmates with disabilities during free play, suggesting that positive attitudes influence play behavior.

A later study by Diamond (2001), examining the play behaviors of 45 typically developing children in inclusive programs, showed that half of the children engaged in social contact with at least one classmate with a disability; social contact was defined as a verbal or physical exchange or sustained visual regard, which indicated that the participants were aware of, and responsive to each other. The children who had social contact with classmates with disabilities were more sensitive to cues associated with different emotions and were more accepting of hypothetical peers with disabilities than were children who were observed interacting only with typically developing peers. Another study by Hestenes and Carroll (2000), however, did not find a positive relationship between play behavior and attitude or knowledge about disabilities. They interviewed 29 typically developing preschoolers attending an inclusive program to assess their overall understanding of hypothetical children with disabilities and to rate their peers on a sociometric measure. In addition, they observed children's play. Results revealed a positive relationship between children's reported preference to play with classmates with disabilities and their overall score for understanding disabilities. That is, affective and cognitive components of attitude were related. In contrast to the other two studies, however, neither children's understanding of disabilities nor their reported preference to play with classmates with disabilities was related to their actual social play with classmates with disabilities.

Although Hestenes and Carroll's (2000) results were inconsistent with the other two research studies (Diamond, 2001; Okagaki et al., 1998), the three studies suggest the possible presence of the following relationships: (a) children's reported willingness to play with hypothetical children with disabilities is related to their play interactions with classmates with disabilities (Okagaki et al., 1998), (b) children's acceptance ratings of hypothetical peers with disabilities are related to their social interactions with classmates with disabilities (Diamond, 2001), and (c) children's understanding of disabilities is related to their reported preference to play with classmates with disabilities (Hestenes & Carroll, 2000). In other words, two of the three research studies (Diamond, 2001; Okagaki et al., 1998)

suggest that positive attitudes toward peers with disabilities may influence children's social interactions with peers with disabilities.

In addition to the inconsistency of research findings, the three research studies also posed several questions that need to be examined in future research. Interestingly, the measurements used by the three research teams focused on preschoolers' attitudes toward hypothetical peers with disabilities. Only Hestenes and Carroll (2000) conducted sociometric ratings to assess children's actual playmate preferences of their classmates with disabilities. In neither of the other studies were children asked to identify classmates with disabilities. Also, a focal area of research on young children's attitudes toward peers with disabilities has been the examination of children's ability to identify disabilities in peers. Research shows that young children are less likely to notice intellectual disabilities and speech delays but they are able to identify physical disabilities, hearing impairments, and visual impairments (Conant & Budoff, 1983; Diamond & Hestenes, 1996). However, there is limited research examining the relationship between children's identification of peers as having a disability and their actual behaviors toward those peers with disabilities.

To facilitate young children's positive attitudes toward peers with disabilities, it is important to understand what children think about their classmates with disabilities and how their ideas affect their acceptance of and behaviors toward classmates with disabilities. Thus, the current study included cognitive (e.g., identification of a classmate as having a disability), affective (e.g., preference to play with classmates with disabilities), and behavioral (e.g., actual play behaviors with classmates with disabilities) aspects of attitudes toward classmates with disabilities to explore the relationship between children's attitudes and their actual play behaviors toward classmates with disabilities. The following research questions were addressed in this study:

**Research Question 1:** To what extent do preschoolers identify disabilities in their classmates?

**Research Question 2:** Is there a relationship between children's identification of a classmate as having a disability and their play behaviors with the classmate?

**Research Question 3:** Is there a relationship between children's sociometric ratings of classmates with disabilities and their play behaviors with the classmates?

## Method

### *Participants and Settings*

This study was conducted in three inclusive classrooms located in two public preschools in a small urban community in the Midwest. The classrooms operated for two-and-a-half hours, 5 days per week with similar schedules that included

**Table 1.** Information About Participating Classrooms and Children.

Variable	Class A	Class B	Class C
AM or PM class	AM	AM	PM
Teachers	Teacher, TA, and personal assistant	Teacher and TA	Teacher and TA
Total number of children	16	15	13
Child gender			
Boy	8	7	7
Girl	8	8	6
Child age (months)			
M	59.6	61	61
Range	51–68	53–68	51–68
Child ethnicity			
Caucasian	6	8	7
African American	7	3	5
Hispanic	3	4	1

Note. Classes B and C were taught by the same teachers. TA = Teaching Assistant.

circle time, table activity, center time, outdoor play, and snack time. Each classroom included one certified teacher and one teaching assistant. The teachers had master's degrees in Early Childhood Special Education. One classroom (A) also included a personal assistant for a child with a health impairment. Each participating teacher received a modest stipend following completion of the study.

A total of 45 children were enrolled across the 3 classrooms and parents of 44 children provided informed consent; 22 boys and 22 girls with a mean age of 60.4 months participated (range = 51–68 months). Children's ethnicity included 21 Caucasian, 15 African American, and 8 Hispanic children. Additional demographic information is presented in Table 1.

Four children with Individualized Education Plans (IEPs) were included in each class. The three children with the most significant disabilities per classroom were selected as target children for observation of play behaviors based on teacher scores on the *ABILITIES Index* (Simeonsson & Bailey, 1991). The *ABILITIES Index* was designed to describe the functional capabilities of individuals with diverse developmental disabilities, using a rating scale to classify functional capability from "normal" (score of "1") to "profound" (score of "6") in nine domains (e.g., hearing, behavioral social skills, intellectual functioning, limbs, intentional communication, muscle tone, integrity of physical health, vision, and structural status). Additional information on the nine target children is presented in Table 2.

## Measurements

**Sociometric Peer Ratings.** To investigate children's preferences to play with classmates, *Sociometric Peer Ratings* (Asher, Singleton, Tinsley, & Hymel, 1979) were conducted with each child. Sociometric peer ratings have been

found reliable with preschool-age children (Balda, Punia, & Punia, 2002) and have been utilized as a tool to indicate the social status of children with disabilities in inclusive programs (Sale & Carey, 1995). Individual photographs were taken of each participating child. All children were asked first to sort pictures of foods and then toys into one of the three boxes, which were created with a corresponding image and label of a happy face ("like to play with a lot"), a neutral face ("like to play with a little"), and a sad face ("do not like to play with"). After practicing this task with pictures of food and toys, children were asked to sort photographs of their classmates into the same three boxes. Each child was shown a photograph of each classmate and asked, "Do you like to play with XX (child's name) a lot, a little, or not at all?" (Diamond, Le Furgy, & Blass, 1992; Odom et al., 2006).

**Social Acceptance Ratings.** The Social Acceptance Ratings was adapted by Diamond (1994) from the *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* (Harter & Pike, 1984). The Social Acceptance Ratings was designed to assess children's acceptance of a child with a physical disability using three items. This scale has been shown to be reliable with test-retest correlations ranging from .78 to .94 (Diamond, 1994). It has been used in several research studies (Diamond, 2001; Diamond & Hestenes, 1996; Diamond et al., 1997; Diamond & Kensington, 2002; Hestenes & Carroll, 2000; Okagaki et al., 1998). For each of the three items, one side of a page shows a line drawing of a child who is engaged in an activity with other children, and the other side shows a line drawing of a child who is apart from the group of children. The placement of the drawings was counterbalanced across items to control for position preferences in children's selections. A doll representing a child in a wheelchair also was used in

**Table 2.** Information on Target Children With Disabilities.

Class	Child No.	Type of disability	ABILITIES Index score	Gender	Age (months)	Ethnicity
A	C1	Health impairment	26	Girl	67	Hispanic
	C2	Autism	19	Boy	58	Caucasian
	C3	Developmental delay	15	Boy	56	Caucasian
B	C4	Down syndrome	28	Boy	53	Caucasian
	C5	Hearing impairment	17	Girl	54	Caucasian
	C6	Developmental delay	15	Girl	58	Caucasian
C	C7	Cerebral Palsy	31	Boy	60	Caucasian
	C8	Autism	22	Boy	52	Caucasian
	C9	Developmental delay	17	Girl	51	Hispanic

this assessment task. For example, the researcher pointed to one line drawing and explained, “This boy does not have many friends to play with.” Then the researcher pointed to the second drawing and stated, “This boy has many friends to play with.” Next, each participating child was asked to point to the drawing which best described the doll with a physical disability (e.g., “If this doll [representing a child in a wheelchair] were a real boy, do you think he would have a lot of friends to play with or not very many friends?”). After choosing a drawing the child was asked if the doll was “a lot like” or “a little bit like” the boy or girl in the drawing selected. Thus, these questions elicited children’s perceptions about how much a hypothetical child in a wheelchair was accepted by his or her peers. Children received a score of 1 if they thought the doll was “a lot like” the boy who was alone, 2 points if they thought the doll was “a little bit like” the boy who was alone, 3 points if they thought the doll was “a little bit like” the boy who was playing with others, and 4 points if they thought the doll was “a lot like” the boy who was playing with others. Children’s scores across the three test items were averaged. Higher scores represented higher levels of acceptance. Separate versions of the scale were used for boys and girls with line drawings and wording that were gender specific. In addition, dolls that matched each child’s gender and ethnicity were used.

**Child interviews.** To assess children’s identification of disabilities in their classmates, each child participated in an individual interview. Individual photographs of all classmates, arranged by alphabetical order, were shown to each child. Each child’s picture was named and then placed on the table until all classmates’ photographs were on the table. Children were asked three questions taken from Diamond (1993): Can you show me if there is anyone in your classroom who (a) does not walk or run the way the other children do, (b) does not talk as well as the other children, and (c) does not behave the way the other children do. If a child pointed to a photo of a classmate in response to the questions, the researcher asked the child for an explanation

about each photograph that he or she selected (e.g., “Why do you think this child cannot walk so well?”). All children’s responses were audio-recorded.

**Play observations.** Children’s play was observed during free-play situations in the classrooms (e.g., center time, free choice time) over a 10-week period. The play behaviors of each target child with a disability ( $n = 3$  per classroom) were recorded during 10-min observation sessions divided into 15-s intervals. Each target child was observed once per day with no more than 3 observations occurring per child during any 1 week. However, a child with autism in Class A (C2) was dropped due to low attendance. The average number of observations for the 8 remaining target children was 21 times (210 min).

Partial-interval time sampling was used to assess children’s play behaviors. During each observation period, each participating child wore a nametag with a numeric code on it. At the end of each 15 s, the researcher recorded the target child’s play behaviors by circling one of the codes representing solitary play (S), onlooker (O), parallel play (P), or associative play/cooperative play (AC). If a child engaged in two different play behaviors (e.g., parallel play and associative/cooperative play) during a 15-s interval, the higher level of play behavior was recorded (e.g., associative/cooperative play > parallel play > onlooker > solitary play). Next, if the target child with a disability engaged in associative/cooperative play or parallel play with one or more peers, the researcher recorded the numeric codes representing the peers. However, if a target child demonstrated a challenging behavior (e.g., hitting, pushing, throwing a toy at a peer) during an interval, the interval was marked “N” (negative behavior) and other play behaviors or teacher behaviors were not recorded. Teacher presence in the same area also was noted. When a target child talked with a teacher and did not engage in any peer play, then only teacher involvement was coded for that interval. The definitions for each play behavior, adapted from Parten (1932), and Pierce-Jordan and Lifter (2005), are provided in Table 3.

**Table 3.** Definitions of Play Behaviors.

Play behaviors	Operational definitions
Solitary play	Child sits, plays, or engages by himself or herself in some type of activity; child gazes at the toys in front of him or her, or gazes away from the play area (e.g., around the room) without looking at or interacting with others; the child may separate from other children and play apart with chosen toys; the child does not look at what others are doing even if they are physically close.
Onlooker	Child gazes at another person or at a person's actions; child's social status is that of observer, not participant; the child watches other children play but does not play or interact with them (e.g., child watches another child build a block tower).
Parallel play	Child plays with the same materials in the same vicinity as peers but does not interact with peers; child plays with the same toys but does not interact verbally or nonverbally with peers (e.g., child plays with puzzles, or draws, side by side with peers without interacting with the peers).
Associative/ cooperative play	Child's verbal and nonverbal behaviors are socially focused, including talking, sharing objects (e.g., gives an object to another child), or making physical contact (e.g., touches another child); includes playing in an organized manner, planning or having roles assigned, having a shared play theme (e.g., children play together with plastic food at a housekeeping area where they are cooking together with plastic food with one child pretending to be the chef while another is serving the food).
Negative behavior	Child demonstrates a challenging behavior (e.g., hitting, pushing, throwing a toy at a peer).
Teacher involvement	A classroom teacher or other adults such as therapists, social workers, or volunteers are engaged in the play or facilitate play with children. Also, code if adult(s) are not engaged in play with children but talk or respond to children within 3 feet.

Source. Definitions adapted from Parten (1932) and Pierce-Jordan and Lifter (2005).

## Procedures

**Play observations.** Classroom observations were conducted during regularly scheduled free-play sessions which included the following play areas: fine motor materials, cars and trucks, blocks, dramatic play, science area, sensory table, computer table, and carpet area. Children were allowed to play in any area with the exception of the computers and sensory tables, which were restricted to no more than two children at a time. All other centers were available to an unlimited number of children during free play. Teachers occasionally worked with a specific child on an art project or an assessment. Observational data were not gathered in these cases or when the target child played on a computer alone.

**Inter-observer reliability.** The first author served as the primary observer for this study. To ensure the accuracy of the researcher's recordings, a doctoral student who was majoring in Special Education and was not aware of the study hypotheses served as the second observer. The two observers practiced recording the selected play behaviors in pre-school classrooms that were not part of this study. Training continued until inter-observer agreement equaled at least 80% on all variables for three consecutive observations. This criterion for terminating training is one frequently used in studies that include behavioral observations (Hall & McGregor, 2000; Odom & Ogawa, 1992). The primary observer wore a MP3 device and an earpiece with pre-recorded signals to indicate the beginning of each 15-s interval. The second observer also wore an earphone connected

to the same MP3 device, so both observers could hear the signal for each 15-s interval. The second observer participated in 20% of the observation sessions for each target child. The reliability sessions were randomly scheduled for each of the eight target children. Inter-observer agreement was calculated on an interval-by-interval basis using the following formula: the number of agreements divided by the number of agreements plus the number of disagreements, multiplied by 100. Mean percentage of inter-observer agreement averaged 94.8% for solitary play, 87.5% for onlooker, 89.7% for parallel play, and 88.3% for associative/cooperative play.

**Sociometric peer ratings, social acceptance ratings, and child interviews.** Child assessments were administered individually to all participating children by the first author over a 4-week period. Each assessment was conducted on a different date in the following order: sociometric peer ratings, *Social Acceptance Ratings*, and the child interview. Each assessment took less than 10 min per child. Children's responses were audio-recorded during the child interviews. Children with disabilities also participated in the assessments following the same procedures described above. However, if a child with a disability did not respond to the questions during an assessment or if he or she had difficulty focusing on the task, the assessment was discontinued and a second attempt was made on another day. If the second attempt was not successful, the assessment was discontinued and a third attempt was made on another day. If the third attempt was not successful, no further attempts were made.

**Table 4.** Children's Identification of a Classmate With an IEP for Each Interview Question.

Class	Children with IEPs	Q1. Difficulty walking	Q2. Difficulty talking	Q3. Difficulty behaving well
A ( <i>n</i> = 12)	C1 with a health impairment	41.7%	41.7%	25%
	C2 with autism	16.7%	50%	—
	C3 with a developmental delay	8.3%	25%	41.7%
	(Child with a developmental delay) <sup>a</sup>	—	8.3%	—
B ( <i>n</i> = 10)	C4 with Down syndrome	50%	60%	30%
	C5 with a hearing impairment	—	—	—
	C6 with a developmental delay	—	—	—
	(Child with a developmental delay) <sup>a</sup>	—	—	—
C ( <i>n</i> = 10)	C7 with cerebral palsy	80%	40%	—
	C8 with autism	20%	90%	70%
	C9 with a developmental delay	20%	30%	50%
	(Child with a developmental delay) <sup>a</sup>	—	—	—

Note. *n* = number of typically developing child participants in each class, C1 to C9 = target children with disabilities. IEP = Individualized Education Program.

<sup>a</sup>Children with IEPs who were not selected as target children with disabilities for play observations.

The authors coded interview data using guidelines described by Johnson and LaMontagne (1993). To assess the integrity of the categories a graduate student majoring in Special Education sorted 20% of the responses that were randomly selected from each category. Reliability was calculated using the following formula: the number of agreements divided by agreements plus disagreements and multiplied by 100. Mean percentage of inter-rater agreement averaged 95.2% for combined responses to the first and second interview question (ability to walk or talk), and 83.3% for responses to the third interview question (ability to behave well).

## Results

Findings indicate that the majority of typically developing children identified at least one classmate with an IEP as “having a disability” but rarely identified *all* classmates with IEPs as “having a disability.” Typically developing children were less likely to play with classmates with disabilities whom they “identified as having a disability” compared with peers who were not identified as “having a disability.” In addition, typically developing children were more likely to play with classmates with disabilities if they rated them on the sociometric peer ratings as someone who they “liked to play with” versus “did not like to play with.” Closer inspection revealed that children’s sociometric peer ratings were a stronger indicator of whether a typically developing child would play with a classmate with a disability than was identification of a classmate as having a disability. Interestingly, children’s acceptance of a hypothetical peer with a disability was not related to any of the variables (e.g., identification of a classmate as having a disability, stated preference to play with a classmate with a disability, actual play behaviors with a classmate with a

disability). A detailed discussion of the findings in relation to each research question follows.

### *Young Children’s Ability to Identify a Classmate as Having a Disability*

The majority of typically developing children (*n* = 29/32) identified at least one classmate with an IEP as having a disability, when asked to point to photographs of classmates who *did not walk or talk* as well as the other children. Many typically developing children (65.6%, *n* = 21/32) identified two or three classmates with IEPs as having a disability whereas one fourth of the children (*n* = 8/32) identified one classmate with an IEP as having a disability. In contrast, the third interview question (children who *had difficulty behaving well*) was not useful for discriminating between classmates with and without disabilities. Only one third of the typically developing children (34.4%, *n* = 11/32) identified a classmate with an IEP as having difficulty behaving well. Many typically developing children identified either typically developing classmates or a mix of classmates with and without IEPs as having difficulty behaving well.

Children’s identification of a classmate who “did not walk or talk as well as the other children” varied according to the types of disabilities of their classmates. Children were more likely to identify classmates with more obvious disabilities (e.g., Down syndrome, autism, cerebral palsy, or health impairment) than they were to identify children with developmental delays. Interestingly, no classmates identified a child who wore a hearing aid but communicated well with others (C5) as having difficulty walking, talking, or behaving differently from her peers. The percentage of typically developing children who identified their classmates with IEPs in response to each interview question is presented in Table 4.

When children pointed to a photograph of a classmate in response to one of the three interview questions, they were asked for an explanation (e.g., "Why do you think this child does not walk or run the way the other children do?"). Ninety-two responses were gathered from the 32 typically developing children, and of these, 17 comments were not related to the questions or provided no additional information (e.g., "She can't."). Thus, those 17 comments were not included in the analysis. Of the 75 comments analyzed, 14 were related to the first interview question (difficulty walking), 20 comments focused on the second interview question (difficulty talking), and 41 comments were related to the third interview question (difficulty behaving well).

Using content analysis, eight categories were created from the 34 responses to the first and second interview questions (difficulty walking or talking). The most frequently mentioned comments fell into the categories of *has difficulty* (e.g., "He has trouble talking," "She has something wrong with her body."), *is immature* (e.g., "She is a baby."), and *has limited function* (e.g., "She can walk but she can't run."). Some of the children stated that their peers *needed some help* (e.g., "He doesn't talk and went down to the other classroom.") or they just *did not want to talk* (e.g., "Mary doesn't talk because she doesn't want to."). Other categories of explanations were related to *difference* ("He is different than us."), an *accident* (e.g., "His legs are broken."), or *equipment* (e.g., "He got a wheelchair.").

The majority of comments to the third interview question ( $n = 41$ ) included a focus on challenging behaviors or social skills. Using content analysis, four categories were identified: *does not follow rules* (e.g., "He puts toys where they were not supposed to be."), *has inappropriate social skills* (e.g., "He doesn't share."), *engages in aggression* (e.g., "He throws toys at me and Matthew."), and *shows behavior related to the disability* (e.g., "Mary [who has a seizure disorder] sometimes froze a little bit when we line up for the gym.").

### Identification of a Classmate as Having Disability and Play Behaviors With the Classmate

Data from the 32 typically developing children's responses to the interview questions and their play behaviors during free-play sessions were analyzed using dyadic analysis procedures in which each typically developing child was paired with a target child with a disability. Across the three classrooms, a total of 84 dyads were identified: 24 dyads in Class A (12 typically developing children and 2 target children with disabilities), 30 dyads in Class B (10 typically developing children and 3 target children with disabilities), and 30 dyads in Class C (10 typically developing children and 3 target children with disabilities). Each dyad was labeled as "0" (*non-identification of disability*) or "1" (*identification*

*of disability*) based on a typically developing child's responses to the first or second interview questions (ability to walk or talk). If a typically developing child selected the target child for either question, then the dyad received a score of "1." Children's responses to the third interview question (ability to behave well) were not used in this analysis because the question did not clearly discriminate between classmates with and without disabilities. Of the 84 dyads across the three classrooms, 36 dyads were labeled as "0" (*non-identification of a disability*) and 48 dyads were labeled as "1" (*identification of a disability*).

To calculate the percentage of intervals that a typically developing child played with a target child with a disability, the number of intervals in which a target child with a disability engaged in associative/cooperative play with the dyadic partner across all observation sessions was calculated. Although the dyadic analysis showed that 85% of the dyads ( $n = 72/84$ ) engaged in associative/cooperative play during at least one 15-s interval over the course of this study, the average percentage of play intervals for each of these 72 dyads was very low, ranging from 0.10% to 13.41% of intervals ( $M = 2.15\%$ ,  $SD = 2.55$ ).

A one-way analysis of variance (ANOVA) test revealed that children's identification of a classmate as having a disability was negatively related to their percentage of *associative/cooperative play* with the classmate with a disability,  $F(1, 82) = 4.33$ ,  $p < .05$ ,  $\eta^2 = .05$  (the significance of effect size was evaluated using guidelines proposed by Cohen, 1988:  $\eta^2 < .06$  is small,  $.06$  to  $.14$  is medium, and  $>.14$  is large). In other words, children who did not appear to notice that a classmate had a disability spent more time in associative/cooperative play with the classmate than children who identified that classmate as having a disability.

### Sociometric Peer Ratings and Play Behaviors With a Classmate With a Disability

Researchers suggest that for sociometric procedures to be valid, typically 70% of the reference group must participate (Crick & Ladd, 1989). In the current study, 40 children (88.9%) completed sociometric peer ratings on their classmates: 4 children with disabilities were unable to participate in the task as they did not appear to understand the directions. Mean sociometric peer ratings that each child received from all other peers in his or her classroom were calculated. Then, children's mean sociometric peer ratings in each classroom were averaged as a class mean. All of these average class scores were very close to, or at 1.0, representing *like to play with a little*. Likewise, five of the nine target children with disabilities were above, or proximal to, their class mean sociometric peer ratings. The remaining four children with disabilities received sociometric peer ratings that were lower than the class average scores.

**Table 5.** ANOVA Results for Children's Identification of Disability, Sociometric Ratings, and Play Behaviors.

Variables	N (dyads)	AC play		F
		M (%)	SD (%)	
Identification of disability				
Non-identification	36	2.80*	2.95	4.33
Identification	48	1.66	2.11	
Total	84	2.15	2.55	
Sociometric ratings				
Does not like to play	44	1.53	1.66	5.78
Likes to play (a little or a lot)	40	2.83**	3.14	
Total	84	2.15	2.55	

Note. AC play = Associative/cooperative play.

\* $p < .05$ . \*\* $p < .02$ .

To analyze the relationship between children's stated preferences to play with a classmate with a disability and their actual play behaviors with the classmate with a disability, each dyad was labeled as "2" (*like to play with a lot*), "1" (*like to play with a little*), or "0" (*do not like to play with at all*) based on the typically developing child's sociometric peer rating of the target child with a disability. Of the 84 dyads, 44 dyads were labeled as "0" because the typically developing child reported that he/she *did not like to play* with the classmate with a disability; 10 dyads were labeled as "1" for children who reported that they *liked to play a little* with the classmate with a disability; and 30 dyads were labeled as "2" for children who reported that they *liked to play a lot* with the classmate with a disability. The average percentage of intervals that the two children in a dyad engaged in associative/cooperative play was analyzed.

Given the fact that most of the dyads were labeled "0" (*do not like to play with*,  $n = 44/84$ ) or "2" (*like to play with a lot*,  $n = 30/84$ ) and the class mean sociometric peer rating was "1" (*like to play with a little*), the categories of "*like to play with a little*" (1) and "*like to play with a lot*" (2) were combined to contrast the negative and positive ratings. An ANOVA indicated a significant relationship between children's stated preference to play with a classmate with a disability and their actual play behaviors with the classmate with a disability,  $F(1, 82) = 5.78, p < .02, \eta^2 = .09$ . Typically developing children who reported that they *liked to play (a little or a lot)* with a classmate with a disability spent significantly more time in *associative/cooperative play* with that classmate with a disability than children who reported that they *did not like to play* with that classmate with a disability (see ANOVA data in Table 5).

An ANOVA was used to examine the interaction effects of children's sociometric peer ratings of a classmate with a disability and the identification of the classmate as having a disability, on their percentages of associative/cooperative play with the classmate with disability as the dependent

**Table 6.** Correlations Among Children's Identification of Disability, Sociometric Ratings, and Acceptance Ratings ( $N = 32$ ).

Measure	Acceptance scale	Sociometric ratings	Identification of disability
Acceptance scale	—	-.04	-.08
Sociometric ratings		—	-.15
Identification of disability			—

Note. All  $ps > .10$ .

variable. The ANOVA revealed significant interaction effects among these three variables,  $F(3, 80) = 3.56, p < .02, \eta^2 = .10$ . A post hoc test using Tukey's honestly significant difference (HSD) indicated that typically developing children were *most* likely to play with a classmate with a disability who they *liked to play with* and *did not identify* as having a disability whereas they were *least* likely to play with a classmate with a disability who they *did not like to play with* and *identified* as having a disability. Results also suggested that children's sociometric ratings were a stronger indicator of whether children played or did not play with a classmate with a disability than their identification of a classmate as having a disability.

### Social Acceptance of a Hypothetical Peer With a Disability and Play Behaviors

Children's responses on the *Social Acceptance Scale* (Diamond, 1994, 2001) showed that the 32 typically developing children were generally accepting of hypothetical peers with disabilities ( $M = 2.7, SD = .89$ ). To analyze the relationship between children's social acceptance of hypothetical peers with disabilities and their actual play behaviors with classmates with disabilities, each typically developing child's average score on the *Social Acceptance Scale* was calculated. Also, the mean percentage of intervals that each typically developing child engaged in associative/cooperative play with target children with disabilities was calculated. Using a linear regression, the typically developing children's data were analyzed. Results showed no relationship between children's social acceptance of hypothetical peers with disabilities and their percentages of *associative/cooperative play* with classmates with disabilities,  $F(1, 29) = .83, \beta = .29, p > .10, R^2 = .03$ . In addition, the regression analysis revealed no relationship between children's acceptance of hypothetical peers with disabilities and their gender or age.

To analyze relationships among the three primary measures (children's identification of a classmate as having a disability, sociometric peer ratings, and social acceptance ratings), Pearson correlations were used. Results showed that none of the three measures were related, meaning that without the play data (e.g., associative/cooperative play), children's responses on the three measures are not related to each other (see correlation data in Table 6). In a separate



analysis, the mean percentage of intervals that a typically developing child engaged in parallel play near a target child with a disability also was calculated. However, none of the three primary measures were related to typically developing children's parallel play near children with disabilities.

In summary, findings indicate that one cognitive component (identification of a classmate as having a disability) was negatively related to the behavioral component (actual play behaviors with classmates with disabilities), whereas the affective component (stated preference to play with classmates with disabilities) was positively related to the behavioral component. In addition, the affective component was more strongly related to the behavioral component than the cognitive component. Another cognitive component, children's social acceptance of a hypothetical peer with a disability, was not related to any of the attitude components.

## Discussion

One of the main findings in this study is that typically developing children were more likely to play with classmates with disabilities who they "did not identify as having a disability" compared with peers who they identified as "having a disability." A possible explanation for this relationship may be that the interview questions to assess children's identification of a classmate as having a disability focused on deficits. Also, many children's responses to the questions about *why* the identified classmates could not walk or talk like other children reflected functional limitations such as "*has difficulty*" or "*is immature*." Therefore, children's perceptions about classmates who they identified as having disabilities or differences might have affected their play behaviors with the identified classmates. Children might see their classmates with disabilities as less competent and, therefore, as less preferred playmates. Indeed, researchers have suggested that both cognition and behavior are critically important, and influential in one's attitudes toward others (Diamond, 2001; Eagly & Chaiken, 1993). However, there has been little research showing how cognition and behavior interact to influence the development of children's attitudes toward peers with disabilities. Understanding young children's ideas about what it means to have a disability and their decisions to include or exclude a peer with a disability from activities is critical to understanding the social environment within inclusive classrooms (Diamond, Hong, & Tu, 2008).

Another main finding of this study indicates that typically developing children were more likely to play with classmates with disabilities if they rated them on the sociometric peer ratings as someone whom they "liked to play with" versus "did not like to play with." This finding contradicts a previous study in which Hestenes and Carroll (2000) reported that 29 preschoolers' playmate preferences (evaluated using sociometric ratings) were not related to children's

social play in the classroom and on the playground. One possible reason for this conflicting finding is that one of the two classrooms observed by Hestenes and Carroll included children with disabilities only during free play and not throughout the class day, whereas the current study was conducted in inclusive classrooms where participating children might have had more opportunities to play with classmates with disabilities. In other words, limited interactions between children with and without disabilities in one of Hestenes and Carroll's classrooms could have resulted in typically developing children's perceptions of peers with disabilities as not being members of their classroom community.

Another possible explanation for the conflicting finding may be related to differences in data collection and analysis. Hestenes and Carroll (2000) averaged each typically developing child's sociometric peer ratings on all classmates with disabilities. They also used a classroom mapping system to record children's play behaviors. Observation in the current study focused on a target child with a disability rather than scanning the classroom. This observation method resulted in the percentage of intervals spent in associative/cooperative play for each dyad. Thus, the dyadic analysis used in the current study allowed for a more fine-tuned examination of the relationship between individual children's stated preference to play with a target child with a disability and their engagement in associative/cooperative play with the dyadic partner.

Interestingly, results from the current study indicate that typically developing children were more likely to play with a classmate with a disability if they rated him or her positively on the sociometric peer ratings regardless of their identification of the classmate as having a disability. To date, many researchers have suggested that young children with disabilities often experience difficulties developing friendships and that they have limited social interactions with peers (e.g., Brown, Odom, McConnell, & Rathel, 2008; Buyse, Goldman, & Skinner, 2002; Guralnick, Hammond, Connor, & Neville, 2006). As a result, young children with disabilities are less accepted, and often rejected by their typically developing peers (e.g., Geisthardt, Brotherson, & Cook, 2002; Odom et al., 2006). However, this does not mean that friendships do not exist for children with disabilities (Freeman & Kasari, 1998). Some researchers have reported that many young children with disabilities have at least one playmate or close friend (Buyse, 1993; Guralnick, 1997; Yu, Ostrosky, & Fowler, 2011). The current study adds support to existing research noting that friendships exist between children with and without disabilities.

## Limitations and Suggestions for Future Research

A few limitations must be considered when evaluating the findings from the current study. First, the sample of

participating children was limited to three classes and may not generalize to a larger number of children and classes. For example, in the current study children's gender was not related to any variables studied (e.g., identification of disabilities, sociometric ratings, acceptance scales, play behaviors), whereas there is research demonstrating that girls have more positive attitudes toward peers with disabilities than boys (e.g., Diamond et al., 1992). Recruiting a larger sample from multiple early childhood settings would allow for more in-depth examinations of the relationship between children's attitudes and play behaviors toward peers with disabilities, while also considering demographic variables.

Another limitation of this study has to do with the measures used to assess children's attitudes toward peers with disabilities. Many attitude measures have been used with older children; research focused on measuring young children's attitudes toward peers with disabilities is limited (Favazza & Odom, 1996). This limitation stems from the methodological challenges that researchers face when assessing young children's attitudes due to their limited ability to explain their thoughts and feelings (Stoneman, 1993; Yu, Ostrosky, & Fowler, 2012). For example, the three items on the *Social Acceptance Scale* used in the current study focus on children's perceptions of hypothetical peers with disabilities instead of directly asking children about their willingness to play with, or accept actual peers with disabilities as friends. In addition to the items on the scale, dolls representing a child in a wheelchair were used to help children understand the hypothetical peers with disabilities. However, this scale only represented children with a physical disability and not children's broader understanding of disabilities. Also, the three child interview questions were useful in assessing children's identification of their peers as having disabilities, but these questions were limited to three areas (e.g., does not walk, talk, or behave). Thus, children's ability to identify classmates as having a disability (in terms of walking, talking, or behaving differently) might not be related to their understanding of classmates' disabilities or difficulties.

### **Implications for Practice**

There are several implications that may be drawn from this study to promote young children's positive attitudes toward peers with disabilities as well as increase social interactions between children with and without disabilities. Participation in inclusive classrooms can provide many opportunities for children to interact with peers with a range of abilities. However, simply including children with disabilities is unlikely to spontaneously enhance interactions between children with and without disabilities or promote positive attitudes toward peers with disabilities (e.g., Diamond & Tu, 2009). Thus, activities or programs such as reading and discussing children's books about disabilities, arranging

inclusive cooperative learning group activities, or assisting parents in the promotion of children's positive attitude development can help children understand and accept their classmates with disabilities (e.g., Cooper, 2003; Favazza & Odom, 1996; Piercy, Wilton, & Townsend, 2002).

In addition, teachers share their values and attitudes with their students through the content and affective tone of their responses, as well as the information they share about individuals with disabilities (Diamond & Huang, 2005). Professional development at both the pre-service and in-service levels is a way to assist future and current teachers in accessing knowledge and skills related to positive attitude development and the promotion of accepting classroom communities. Also, teachers can use strategies in their classroom environments to promote children's positive attitudes toward, and interactions with, peers with disabilities. For example, in the course of a day, early childhood teachers have multiple opportunities to determine the composition of small groups of children; they can encourage positive interactions between children with and without disabilities within these groups. Teachers also may want to help children make connections between what they think about a classmate's disability or differences and their playmate choice when they are attempting to interact with a peer with a disability (Hestenes & Carroll, 2000). If children do not understand why a peer with a disability is having difficulties during play, the teacher might model strategies or problem solve with the children to promote successful interactions. Taken together these strategies may lead to the development of high-quality early childhood inclusive environments that encourage positive attitudes and social interactions for all children.

Successful inclusion is an educational goal for all children. The outcomes of inclusion for children with and without disabilities should include a sense of belonging and membership, positive social relationships and friendships, and development and learning so all children reach their full potential (Division of Early Childhood/National Association for the Education of Young Children, 2009). Therefore, it is the responsibility of educational professionals to make sure that school environments are places in which all children feel accepted, regardless of their differing abilities. For this goal to be achieved, understanding what children think about their peers with disabilities and how their thoughts and ideas affect their play interactions is an important step in promoting social acceptance of, and interactions with, peers with disabilities. Results from the current study contribute to our growing understanding of young children's thoughts about and behaviors toward their classmates with disabilities.

### **Authors' Note**

The contents of this article are solely the responsibility of the authors and do not represent the official views or policies of the

funding agency, nor does publication in any way constitute an endorsement by the funding agency.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This article was made possible by Grant R324A080071 from the Institute of Education Sciences, U.S. Department of Education.

### References

- Asher, S. R., Singleton, L. C., Tinsley, B. R., & Hymel, S. (1979). A reliable sociometric measure for children. *Developmental Psychology*, 15, 443–444.
- Balda, S., Punia, S., & Punia, D. (2002). Peer Rating Scale: A reliable sociometric measure for preschool children. *Journal of Psychometry*, 15, 21–28.
- Brown, W. H., Odom, S. L., McConnell, S. R., & Rathel, J. M. (2008). Peer interaction interventions for preschool children with developmental difficulties. In W. Brown, S. L. Odom, & S. R. McConnell (Eds.), *Social competence of young children* (pp. 141–164). Baltimore, MD: Brookes.
- Buyse, V. (1993). Friendships of preschoolers with disabilities in community-based child care settings. *Journal of Early Intervention*, 17, 380–395.
- Buyse, V., Goldman, B. D., & Skinner, M. (2002). Setting effects on friendship formation among young children with and without disabilities. *Exceptional Children*, 68, 503–517.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum.
- Conant, S., & Budoff, M. (1983). Pattern of awareness in children's understanding of disabilities. *Mental Retardation*, 21, 119–125.
- Cooper, D. G. (2003). *Promoting disability awareness in preschool* (Unpublished doctoral dissertation). Purdue University, West Lafayette, IN.
- Crick, N. R., & Ladd, G. W. (1989). Nominator attrition: Does it affect the accuracy of children's sociometric classification? *Merrill-Palmer Quarterly*, 35, 197–207.
- Diamond, K. E. (1993). Preschool children's concepts of disability in their peers. *Early Education and Development*, 4, 123–129.
- Diamond, K. E. (1994). Evaluating preschool children's sensitivity to developmental differences. *Topics in Early Childhood Special Education*, 14, 49–63.
- Diamond, K. E. (2001). Relationships among young children's ideas, emotional understanding, and social contact with classmates with disabilities. *Topics in Early Childhood Special Education*, 21, 104–113.
- Diamond, K. E., & Hestenes, L. L. (1994). Preschool children's understanding of disability: Experiences leading to the elaboration of the concept of hearing loss. *Early Education and Development*, 5, 301–309.
- Diamond, K. E., & Hestenes, L. L. (1996). Preschool children's conceptions of disabilities: The salience of disabilities in children's ideas about others. *Topics in Early Childhood Special Education*, 16, 458–471.
- Diamond, K. E., Hestenes, L. L., Carpenter, E. S., & Innes, F. K. (1997). Relationships between enrollment in an inclusive class and preschool children's ideas about people with disabilities. *Topics in Early Childhood Special Education*, 17, 520–537.
- Diamond, K. E., Hong, S., & Tu, H. (2008). Context influences preschool children's decisions to include a peer with a physical disability in play. *Exceptionality*, 16, 141–155.
- Diamond, K. E., & Huang, H. (2005). Preschoolers' ideas about disabilities. *Infants & Young Children*, 18, 37–46.
- Diamond, K. E., & Kensinger, K. R. (2002). Vignettes from Sesame Street: Preschoolers' ideas about children with Down syndrome and physical disability. *Early Education and Development*, 13, 409–422.
- Diamond, K. E., Le Furgy, W., & Blass, S. (1992). Attitudes of preschool children toward their peers with disabilities: A year-long intervention in integrated classrooms. *The Journal of Genetic Psychology*, 152, 215–221.
- Diamond, K. E., & Tu, H. (2009). Relations between classroom context, physical disability and preschool children's inclusion decision. *Journal of Applied Development Psychology*, 30, 75–81.
- Division of Early Childhood/National Association for the Education of Young Children. (2009). *Early childhood inclusion: A joint position statement of the Division of Early Childhood (DEC) and the National Association for the Education of Young Children (NAEYC)*. Chapel Hill: FPG Child Development Institute, The University of North Carolina.
- Eagly, A., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich.
- Favazza, P. C., & Odom, S. L. (1996). Use of the acceptance scale to measure attitudes of kindergarten-age children. *Journal of Early Intervention*, 20, 232–249.
- Freeman, S. F. N., & Kasari, C. (1998). Friendships in children with developmental disabilities. *Early Education and Development*, 9, 341–355.
- Geisthardt, C. L., Brotherson, M. J., & Cook, C. C. (2002). Friendships of children with disabilities in the home environment. *Education and Training in Mental Retardation and Developmental Disabilities*, 37, 235–252.
- Guralnick, M. J. (1997). Peer social networks of young boys with developmental delays. *American Journal on Mental Retardation*, 101, 595–612.
- Guralnick, M. J., Hammond, M. A., Connor, R. T., & Neville, B. (2006). Stability, change, and correlates of the peer relationships of young children with mild developmental delays. *Child Development*, 77, 312–324.
- Hall, L. J., & McGregor, J. A. (2000). A follow-up study of the peer relationships of children with disabilities in an inclusive school. *The Journal of Special Education*, 34, 114–126.
- Harter, S., & Pike, R. (1984). The Pictorial Scale of Perceived Competence and Social Acceptance for Young Children. *Child Development*, 55, 1969–1982.

- Hestenes, L. L., & Carroll, D. E. (2000). The play interactions of young children with and without disabilities: Individual and environmental influences. *Early Childhood Research Quarterly*, 15, 229–246.
- Johnson, L., & LaMontagne, M. J. (1993). Research methods using content analysis to examine the verbal or written communication of stakeholders within early intervention. *Journal of Early Intervention*, 17, 73–79.
- Odom, S. L. (2000). Preschool inclusion: What we know and where we go from here. *Topics in Early Childhood Special Education*, 20, 20–27.
- Odom, S. L., & Ogawa, I. (1992). Direct observation of young children's social interactions with peers: A review of methodology. *Behavioral Assessment*, 14, 407–441.
- Odom, S. L., Zercher, C., Li, S., Marquart, J. M., Sandall, S., & Brown, W. H. (2006). Social acceptance and rejection of preschool children with disabilities: A mixed-method analysis. *Journal of Educational Psychology*, 98, 807–823.
- Okagaki, L., Diamond, K. E., Kontos, S. J., & Hestenes, L. L. (1998). Correlates of young children's interactions with classmates with disabilities. *Early Childhood Research Quarterly*, 13, 67–86.
- Parten, M. B. (1932). Social participation among preschool children. *Journal of Abnormal and Social Psychology*, 27, 243–269.
- Pierce-Jordan, S., & Lifter, K. (2005). Interaction of social and play behaviors in preschoolers with and without pervasive developmental disorder. *Topics in Early Childhood Special Education*, 25, 34–47.
- Piercy, M., Wilton, K., & Townsend, M. (2002). Promoting the social acceptance of young children with moderate-severe intellectual disabilities using cooperative-learning techniques. *American Journal on Mental Retardation*, 107, 352–360.
- Sale, P., & Carey, D. M. (1995). The sociometric status of students with disabilities in a full-inclusion school. *Exceptional Children*, 62, 6–19.
- Sandall, S., Hemmeter, M. L., Smith, B. J., & McLean, M. E. (2007). *DEC recommended practices: A comprehensive guide for practical application*. Longmont, CO: Sopris West.
- Simeonsson, R. J., & Bailey, D. B. (1991). *The ABILITIES Index*. Chapel Hill, NC: Frank Porter Graham Child Development Center.
- Stoneman, Y. (1993). The effects of attitude on preschool integration. In C. A. Peck, S. L. Odom, & D. D. Bricker (Eds.), *Integrating young children with disabilities into community programs* (pp. 223–248). Baltimore, MD: Brookes.
- Triandis, H. (1971). *Attitudes and attitude change*. New York, NY: Wiley.
- Yu, S., Ostrosky, M. M., & Fowler, S. A. (2011). Children's friendship development: A comparative study. *Early Childhood Research & Practice*, 13. Retrieved from <http://ecrp.uiuc.edu/v13n1/you.html>
- Yu, S., Ostrosky, M. M., & Fowler, S. A. (2012). Measuring young children's attitudes toward peers with disabilities: Highlights from the research. *Topics in Early Childhood Special Education*, 32, 132–142.