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Measuring Young Children's Attitudes Toward Peers With Disabilities: Highlights From the Research

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Abstract

Young children with disabilities are increasingly attending inclusive early childhood programs with their typically developing peers. Within these programs, research efforts and practice have supported young children's understanding and acceptance of peers with disabilities. However, there is limited information about the measures used to assess young children's attitudes toward peers with disabilities. Therefore, the purpose of this article is to critically review the literature on young children's attitudes toward peers with disabilities with an emphasis on measurement issues. Assessment instruments and the type of information that these assessments provide about the dimensions of attitudes toward peers with disabilities based on a conceptual model of attitude formation suggested by Triandis are highlighted. Implications for future research are addressed following the literature review.

Keywords

inclusion, focus on measurement/instrument/test design, research methodologies, friendship

The inclusion of young children with disabilities in regular education classrooms has become a primary service option in early childhood special education (e.g., Odom, 2000; Sandall, Hemmeter, Smith, & McLean, 2007). Across special education theory, research, and ethical perspectives, there is a strong belief that children with disabilities should have opportunities to interact with their typically developing peers in inclusive school settings (e.g., DEC/NAEYC, 2009; Hestenes & Carroll, 2000). As children with disabilities increasingly attend inclusive education programs, one of the first challenges teachers face is to create classroom communities whereby all children welcome and accept students with disabilities as friends and members of their class. Participation in inclusive classrooms can provide many opportunities for typically developing children to interact with peers with disabilities. Research has shown that children enrolled in inclusive settings tend to have more positive attitudes toward peers with disabilities than children who rarely spend time with peers with disabilities (Diamond & Hestenes, 1996, Dyson, 2005; Tamm & Prellwitz, 2001). However, including children with disabilities in inclusive classrooms is unlikely to spontaneously enhance interactions between children with and without disabilities (e.g., Diamond & Tu, 2009). Thus, some researchers have developed and implemented intervention programs to promote children's positive attitudes toward peers with disabilities (Cooper, 2003; Favazza & Odom, 1996, 1997; Piercy, Wilton, & Townsend, 2002) and to ultimately support friendships between children with and without disabilities.

However, much of the empirical work in special education has focused on the outcomes of children with disabilities as a result of enrollment in inclusive programs. The benefits that typically developing children achieve as a result of participation in inclusive programs have largely been overlooked (e.g., Okagaki, Diamond, Kontos, & Hestenes, 1998; Peck, Carlson, & Helmstetter, 1992). Yet, research has shown that typically developing children may learn about and show greater acceptance of individuals with disabilities as a result of their interactions with peers with disabilities in inclusive classrooms (Hestenes & Carroll, 2000). Therefore, positive attitude development can be a benefit that typically developing children obtain from participating in inclusive programs. Thus, some researchers have focused on young children's understanding about peers with disabilities (Diamond, 1993; Diamond & Hong, 2010; Diamond & Huang, 2005; Diamond & Kensinger, 2002), and the relationship between children's understanding

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and acceptance of peers with disabilities and their actual play behaviors with their peers with disabilities (Diamond, 2001; Hestenes & Carroll, 2000; Okagaki et al., 1998).

Given the importance of and efforts in research and practice to support the social acceptance of peers with disabilities, researchers have used a variety of methods such as scales, questionnaires, interviews, sociometric peer ratings, and behavioral observations to assess young children's attitudes toward peers with disabilities. However, many of these methods have been used with older children; there is limited research on the measurement of *young* children's attitudes toward peers with disabilities (Favazza & Odom, 1996). This limitation is not a result of disinterest in young children's attitudes, but it stems from the methodological challenges of assessing young children's attitudes (Stoneman, 1993). For example, when studying the attitudes of adults or older children, attitudes can be inferred from what people say about a referent or from the feelings they describe. However, it can be challenging to ask preschoolers to express what they think or how they feel about individuals with disabilities.

Research has consistently shown that young children can identify physical and sensory disabilities (Conant & Budoff, 1983; Diamond, 1993; Diamond & Kensinger, 2002); however, findings surrounding children's understanding of intellectual disabilities are mixed. For example, Conant and Budoff (1983) and Diamond and Hestenes (1996) reported that young children do not notice intellectual disabilities. To investigate young children's understanding of disabilities, these two research teams used photographs of unfamiliar children or asked broad questions (i.e., "Do you know anyone who has a disability?"). In contrast, Diamond (1993) demonstrated that when preschoolers were shown photographs of their classmates (familiar peers), the majority of them were aware of their peers' intellectual disabilities (e.g., Down syndrome), although none of the children identified mild–moderate speech and language delays in their peers. Thus, researchers have noted that it is difficult to identify a developmentally appropriate and understandable way to represent the range of disabilities to young children (Diamond & Hong, 2010).

Another important issue is accessing detailed information about the different aspects of the attitude construct. The way that children come to understand and interact with one another infers the formation of positive or negative attitudes. A conceptual scheme for young children's attitude formation that was developed by Triandis (1971) includes three components: cognitive, affective, and behavioral aspects. The cognitive component includes knowledge about disabilities and beliefs about the causes and consequences of having a disability, whereas the affective component refers to emotional reactions (i.e., fear, anxiety, hope) that occur in response to peers with disabilities. The behavioral component of young children's attitude formation refers to a predisposition to act in a certain manner. For example, children may treat their peers with disabilities as helpless. They may assume such roles as assisting and directing peers with disabilities, or they may express gratitude and thankfulness at having the peer in his or her life. However, with these three attitude components in mind, there is limited information about what aspects of the attitude construct have been assessed and what information has been gained from these measures.

Given the need for more information about methodological issues in assessing young children's attitudes, the purpose of this article is to provide a review of the research on young children's attitudes toward peers with disabilities with an emphasis on measurement. Information that each measure provides about dimensions of the attitude construct, based on Triandis's conceptual model (1971), is highlighted. A critical review of the literature can increase our understanding of appropriate ways to assess young children's attitudes toward peers with disabilities as we continue to focus on creating conditions to foster their sense of belonging and membership in inclusive programs.

Literature Review Method

Articles related to young children's attitudes toward peers with disabilities were identified using the ERIC and PsycINFO databases. Along with *disability, acceptance,* and *attitude*, various combinations of keywords related to young children (e.g., preschoolers, kindergarteners) and peers (or classmates) were used. Additional articles were identified from the reference lists of articles retrieved from the databases and from review articles. The search was limited to peer-reviewed journals; therefore, books, dissertations, and other publications that were not peer reviewed are not included in this literature review. The criteria for inclusion in the review were as follows: (a) The article included at least one method to assess young children's attitudes toward peers with disabilities, (b) the participating children were preschoolers or kindergarteners, and (c) the article was published in a peer-reviewed journal in English between 1990 and 2010.

Results

A total of 19 research articles were identified that met the criteria established for this review. A summary of the measures used in these 19 studies related to young children's attitudes toward peers with disabilities is provided in Table 1. The attitude measures used in the studies were reviewed in terms of how they addressed the three components of Triandis's conceptual model of attitude development. A discussion of each component of Triandis's model and how the outcome measures fit under each component follows.

Table 1. Measures to Assess Young Children's Attitudes Toward Peers With Disabilities.

Citations	Participants	Attitude measures	Purpose of the measures	Attitude components
Aguiar, Moiteiro, and Pimente (2010)	1,121 preschoolers	Sociometric peer ratings	Social acceptance of classmates with disabilities	Affective
Diamond (1993)	28 preschoolers	Child interviews	Identification of classmates as having a disability	Cognitive
Diamond (1994)	20 preschoolers (Study 1) 14 preschoolers (Study 2)	*Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* (adapted from Harter & Pike, 1984)	Understanding of peers with disabilities	Cognitive
Diamond (2001)	45 preschoolers	*Social Acceptance Scales* (adapted from Harter & Pike, 1984) Child interviews Observation of peer interactions	Acceptance ratings Measure of emotional sensitivities in certain situations Play observation	Cognitive Affective Behavioral
Diamond and Hestenes (1994)	24 preschoolers	Child interviews	Understanding of hearing, hearing loss, and sign language	Cognitive
Diamond and Hestenes (1996)	46 preschoolers	Child interviews *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children*	Understanding and acceptance of hypothetical peers with disabilities	Cognitive
Diamond, Hestenes, Carpenter, and Innes (1997)	60 preschoolers	Child interviews *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children*	Understanding of immediate and long-term consequences of physical and sensory disabilities Acceptance of hypothetical peers with disabilities	Cognitive
Diamond, Hong, and Tu (2008)	46 preschoolers	Child interviews	Understanding of disabilities and willingness to play with hypothetical peers with disabilities	Cognitive Affective
Diamond and Hong (2010)	72 preschoolers	Inclusion interview (using vignettes)	Decision to include hypothetical peers with disabilities in play	Affective
Diamond and Kensinger (2002)	41 preschoolers	Child interviews (after watching a video segment from *Sesame Street)* *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children*	Children's ideas about Down syndrome and physical disabilities Ratings of motor and language abilities	Cognitive
Diamond, Le Furgy, and Blass (1992)	25 preschoolers	Sociometrics	Playmate preference of classmates	Affective
Dyson (2005)	77 kindergartners	An open-ended survey, *Primary Student Survey of Handicapped Persons* (revised from Esposito & Peach, 1983)	Understanding and acceptance of hypothetical peers with disabilities	Cognitive Affective
Favazza and Odom (1996)	188 kindergartners	*Acceptance Scale for Kindergartners (ASK)* Child interviews (Group)	Acceptance of hypothetical peers with disabilities Understanding of individuals with disabilities	Affective Behavioral
Favazza and Odom (1997)	46 kindergartners	*Acceptance Scale for Kindergartners (ASK)*	Acceptance of hypothetical peers with disabilities	Affective Behavioral
Favazza, Phillipsen, and Kumar (2000)	48 kindergartners (Study 1) 64 kindergartners (Study 2)	*Acceptance Scale for Kindergartners–Revised (ASK-R)*	Acceptance of hypothetical peers with disabilities	Affective Behavioral
Hestenes and Carroll (2000)	29 preschoolers	*Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* Sociometrics Direct observations	Understanding and acceptance of hypothetical peers with disabilities Playmate preference of classmates Play observations	Cognitive Affective Behavioral

(continued)

Table 1. (continued)

Citations	Participants	Attitude measures	Purpose of the measures	Attitude components
Odom, Zercher, Li, Marquart, Sandall, and Brown (2006)	Typically developing peers of 80 preschoolers with disabilities	Peer rating assessment	Social acceptance of peers with disabilities	Affective
Okagaki, Diamond, Kontos, and Hestenes (1998)	36 preschoolers (Study 1) 38 preschoolers (Study 2)	*Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* *Social Problem Solving Test* (adapted from Rubin, 1988) Parent questionnaire Direct observations	Understanding and acceptance of hypothetical peers with disabilities Willingness to play with a hypothetical peer with a disability Parents' influence on children's attitudes or behaviors toward peers with disabilities Play observations	Cognitive Affective Behavioral
Piercy, Wilton, and Townsend (2002)	51 kindergarteners to second graders	*Peer Acceptance Scale* (adapted from Moe, Nacoste, & Insko, 1981) *Social Distance Scale* (adapted from Fenrick & Peterson, 1984)	Acceptance of hypothetical peers with disabilities	Affective Behavioral

Measures Addressing the Cognitive Aspects of Attitudes

Identification of disabilities. Researchers have assessed cognitive aspects of young children's attitudes toward peers with disabilities by considering two variables: children's identification of disabilities and children's understanding of disabilities. These two cognitive aspects have been assessed using interviews or scales. To assess children's identification of disabilities in their peers, researchers have typically interviewed children. For example, Diamond (1993) interviewed 28 typically developing preschoolers to investigate how they viewed their peers with disabilities. She placed photographs of all the children in the class on a table and then asked the participating children to show her anyone who (a) did not walk or run the way the other children did, (b) did not talk as well as the other children, and (c) did not behave the way the other children did. If a child identified a classmate in any of the above questions, the researcher asked for additional information (e.g., "Why do you think he or she can't talk so well?"). Results revealed that the photographs of all children with physical disabilities (e.g., cerebral palsy) and children with intellectual disabilities (e.g., Down syndrome) were selected in response to questions about classmates who did not walk, talk, or behave like other children. However, none of the children with mild–moderate speech and language delays were identified as having a disability.

In another study, Diamond and Hestenes (1996) interviewed 46 preschoolers using five photographs showing preschool-age girls with one of the following disabilities: physical disability, visual impairment, hearing impairment, and Down syndrome. The fifth photograph showed a typically developing preschooler. The researchers presented the children with one of the five photographs in random order and asked two open-ended questions: (a) "Tell me about the girl. Could you be friends with the girl in the photograph; why or why not?" and (b) "Why can't she walk, see, hear, or do things as well as you? How did it happen?" Results revealed that the majority of children (75%) commented on the physical disabilities represented in the photographs. In addition, 41% of the children commented on a child's visual impairment, whereas only 11% of the children mentioned hearing impairment as they looked at the photographs. None of the children commented on the physical characteristics of a child with Down syndrome in the photographs.

In summary, Diamond and colleagues used child interviews to assess preschool children's awareness of disabilities. Both research studies revealed that young children are more likely to identify physical and sensory disabilities than intellectual disabilities or speech and language delays. In Diamond's study (1993), the interview questions focused on children's identification of their classmates with disabilities as having difficulty walking, talking, or behaving well, whereas Diamond and Hestenes (1996) aimed to assess children's recognition and understanding of disabilities in hypothetical peers with disabilities represented in photographs. Given that only a few studies have assessed young children's identification of disabilities, there continues to be limited information about the relationship between

children's identification of disabilities and their acceptance of (or interactions with) peers with disabilities.

Understanding of disabilities. Although research related to young children's identification of disabilities in their peers has been limited, more research has focused on young children's understanding about hypothetical peers or classmates with disabilities (Diamond & Hestenes, 1994, 1996; Diamond, Hestenes, Carpenter, & Innes, 1997; Favazza & Odom, 1996). Young children's understanding of disabilities has been assessed in two ways: (a) children's thoughts or understanding about a specific disability or individuals with disabilities and (b) children's ratings of the competencies of hypothetical peers with disabilities.

To assess preschoolers' understanding about disabilities, Diamond and Hestenes (1994) investigated children's ideas about their peers with hearing impairments. The researchers interviewed 24 typically developing preschoolers at the beginning of year, and again 3 months later, using eight questions designed to assess children's understanding of hearing, hearing loss, and sign language (e.g., "What do we use to hear with?" "Can you think of some times when you can't hear?" "How can you tell if someone can't hear?" "Have you ever heard of sign language?"). A total of 13 children were enrolled in a class that included a child with a severe hearing impairment, and 11 children were enrolled in a class that included 2 children who had disabilities but not hearing impairments. At the beginning of the year, the majority of children in both classes reported that children could speak although they could not hear. Yet, after 3 months, the children in the class that included a child with a severe hearing impairment were significantly more likely to report that having a hearing impairment affected a child's ability to speak than were children in the other class.

To explore kindergarteners' understanding, perceptions, or ideas about individuals with disabilities, Favazza and Odom (1996) conducted group interviews with kindergarteners who completed the *Acceptance Scale for Kindergartners (ASK)*. Children were asked what it meant to have a disability. After a child responded, the interviewers encouraged him or her to elaborate using questions such as, "What else do you know about someone who has a disability?" Using content analysis, the following six categories emerged from children's responses describing someone with a disability: (a) physical attributes, prosthesis, or equipment (i.e., "They use braces," "They have one leg"), (b) ability or inability (i.e., "They cannot catch a ball," "They cannot do everything"), (c) alternative terminology to describe a disability (i.e., blind, deaf), (d) identification of a specific individual (i.e., dad, grandmother, Mike), (e) class enrollment (i.e., "The kids are in Ms. Sara's room"), and (f) a specific or general description (i.e., "They are funny," "They hurt").

In another interview study to examine kindergarteners' understanding of disabilities, Dyson (2005) interviewed 77 typically developing kindergarten children in Canada using a revised version of the *Primary Student Survey of Handicapped Persons* (Esposito & Peach, 1983). The participating children were asked six questions related to people with disabilities. In response to a question about understanding disabilities (i.e., "Tell me everything you know about a person who has a disability or special need"), 25% of the children mentioned physical disabilities and 16% described people with disabilities as ones who needed assistance and equipment. When asked whether disabilities are contagious, 78% of the children replied, "No." Most participants (88%) responded that they thought people with disabilities were different from themselves, citing differences in appearance and abilities. In addition, 83% of the children reported that they liked people with disabilities because of their personality (e.g., "They are nice") or skills (e.g., "I can help them"). Most participants (91%) reported that they were not afraid of people with disabilities, and half of the children reported that they had a friend with a disability. This study showed that overall typically developing kindergarteners had positive attitudes toward individuals with disabilities.

Another way to assess preschoolers' understanding of disabilities is by asking them to rate the competencies of a hypothetical peer with a disability. In fact, several studies by Diamond and her colleagues (Diamond, 1994, 2001; Diamond et al., 1997; Diamond & Hestenes, 1996; Hestenes & Carroll, 2000; Okagaki et al., 1998) included an adapted version of the *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* (Harter & Pike, 1984) to investigate preschoolers' attitudes toward peers with disabilities. This scale is divided into two sections: (a) competency ratings of hypothetical peers with disabilities and (b) acceptance ratings of hypothetical peers with disabilities. Some researchers used both sections (Diamond & Hestenes, 1996; Diamond et al., 1997; Okagaki et al., 1998), whereas other researchers had children rate only the competence of hypothetical peers with disabilities (Hestenes & Carroll, 2000) or acceptance (Diamond, 2001).

Diamond and her colleagues (1997) used the *Perceived Competence Rating Scale* in conjunction with line drawings in the scale and three dolls with different disabilities (physical disability, hearing loss, visual impairment). A fourth doll represented a child without a disability. This scale was designed to assess how preschoolers perceived the dolls in terms of competence in three areas: motor, language, and peer relationships (e.g., "Do you think this girl would be good at running or not so good at running?"). Results showed that children rated the doll with a physical disability as having lower motor skills than the dolls of typically developing children or children with visual impairments, or hearing impairments. The doll with a hearing loss received lower competency ratings for language skills than did the dolls representing other disabilities or a typically developing child.

For the *Social Acceptance Scale for Young Children*, Diamond (2001) used a doll representing a child with a physical disability and two drawings (i.e., a child engaged in an activity with other children and a child who was apart from the group). The researcher explained each of the drawings and then asked children to point to the drawing that best described the doll in a wheelchair (e.g., "If this doll was a real girl, do you think she would have a lot of friends to play with or not very many friends?"). After choosing a drawing, children were asked whether the doll in a wheelchair was "a lot like" or "a little bit like" the child in the drawing. The reliability of this scale, as assessed by test–retest correlations, ranged from .78 to .94. Results show that overall the preschool children's acceptance of a hypothetical peer in a wheelchair was positive.

In summary, researchers have used dolls or pictures when interviewing preschoolers to assess their perceptions and understanding of peers with disabilities (Diamond, 1993; Diamond et al., 1997; Diamond & Hestenes, 1996; Diamond, Hong, & Tu, 2008). Interview questions have varied depending on the purpose of the research studies (i.e., understanding of disabilities, or competency ratings of hypothetical children with disabilities). For the most part, researchers have used semistructured interviews although several researchers have used a survey or a scale to assess children's understanding and perceived competence of hypothetical peers with disabilities. Diamond and her colleagues conducted many of these studies. In most of this research, typically developing children were asked to share their thoughts about hypothetical peers, rather than discus their classmates or real peers with disabilities.

Measures for Addressing Affective Aspects of Attitudes

Related to the affective aspect of attitude formation described by Triandis (1971), researchers have assessed children's stated preference and willingness to play with peers with disabilities (i.e., "how they *feel* about playing with their peers with disabilities"). To assess children's play partner preference, many researchers have used sociometric peer ratings (Aguiar, Moiteiro, & Pimentel, 2010; Diamond, Le Furgy, & Blass, 1992; Hestenes & Carroll, 2000; Odom et al., 2006). Sociometric ratings also have been used in many research studies to assess young children's peer relationships (e.g., Asher, Singleton, Tinsley, & Hymel, 1979; 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). However, as part of this literature review, only research studies that included sociometric peer ratings as a method to assess acceptance of peers with disabilities were reviewed.

For example, Odom and his colleagues (2006) used sociometric peer ratings along with several other measures (e.g., observations, interviews, teacher/parent questionnaire) to examine the acceptance/rejection of preschoolers with disabilities by their typically developing peers. These researchers first taught typically developing peers of 80 preschoolers with disabilities to sort pictures of foods and then toys into one of three boxes along a 3-point continuum of "like to eat [or play with] a lot, a little or not at all." Each box represented 1 of the 3 points on the continuum with a happy face (*like a lot*), neutral face (*like a little*), or a sad face (*don't like at all*). After practicing this task with pictures of food and toys, the children were asked to sort pictures of their classmates, using the same three boxes. The researchers classified children into "accepted" and "rejected" groups based on data from several measures using mixed-method analyses. Results revealed that approximately 28% of the children with disabilities were "well accepted" by peers. None of the children with autism-pervasive developmental delays, social emotional, behavioral, or attention-deficit disorders were in the "accepted" group, and relatively few children with speech delays or orthopedic impairments were in the "rejected" group.

Another way to measure the affective aspect of attitude development is to ask children about their willingness to play with hypothetical peers with disabilities. Okagaki and her colleagues (1998) investigated preschool children's willingness to play with hypothetical peers with disabilities using an adaptation of the *Social Problem-Solving Test–Revised* by Rubin (1988). This scale was designed to assess children's willingness to have a hypothetical child as a play partner in five situations: Two situations included a child with a physical disability, two situations included a child with a language disability, and one situation included a typically developing child. Dolls were used to represent the hypothetical play partners. The interviewer first explained a hypothetical situation with a doll (e.g., "David uses a wheelchair because his legs don't work. He moves the wheels forward and backward to get around the room. This is David's first day at school. He wants to be friends with the other children. He wants to play with you"), and then asked the child whether he or she would be friends with the doll. Results revealed no differences in children's willingness to play with children with and without disabilities.

Diamond and her colleagues (2008) used six different vignettes to assess children's decisions to include hypothetical peers with and without disabilities in an activity. They used two dolls, one representing a child with a physical disability and one representing a typically developing peer. The six vignettes varied in terms of motor skill demands: Two of the vignettes described activities that required substantial motor skills (e.g., kicking a ball, dancing), two vignettes focused on more modest motor skill requirements

(e.g., completing a puzzle on the floor, which required the teacher's assistance to move the peer with a physical disability from a wheelchair to the floor), and two vignettes included activities that required minimal motor skills (e.g., playing with blocks at a table). The researchers began the interviews by describing an activity and offering a suggestion about how each child might participate. For example, in a dancing activity, the doll in the wheelchair could dance by moving his arms, whereas the doll that was standing could dance with his arms and his legs. After choosing a doll to play with, the child was asked to explain his or her reasons for the selection ("Why did you choose this girl/boy?"). Results revealed that children's decisions to include a child with a physical disability were related to the motor skills that were required for the activity. For example, children were more likely to play with a child with a physical disability when the activity required minimal motor skills.

One additional method used to assess the affective aspect of attitude development involves scales or questionnaires designed to measure children's acceptance of peers with disabilities. Researchers have used the following scales to assess how children feel about their peers with disabilities: the *Social Distance Scale* (Hazard, 1983), the *Chedoke-McMaster Attitudes Toward Children With Handicaps Scale* (CATCH; Rosenbaum, Armstrong, & King, 1986), and *the Acceptance Scale* (Voeltz, 1980). These three scales were developed for use with older children so the content of items, test-taking skills (i.e., reading, recording responses), test format (i.e., forms used for recording responses), and administration format (i.e., group size, instruction) are not appropriate for younger children. Given the limitations of existing scales, Favazza and Odom (1996) developed a scale to use with young children by modifying Voeltz's *Acceptance Scale* to create the *ASK*.

The *ASK* includes 18 questions such as, "Would you like to be a good friend with a kid with a disability?" and "Would you like to spend your recess with a kid with a disability?" The vocabulary and expressions in Voeltz's scale were revised to address kindergarten-age children's comprehension. In addition, several changes were made to Voeltz's scale related to the presentation of items (i.e., using a question format), group size for administration (i.e., 6–7 children at one time), and the protocol for recording child responses (i.e., color-coded answer sheets, visual representation of the words *yes, no*, and *maybe*). The reliability and validity of the *ASK* was examined with 188 kindergarteners (approximately 88% of the children were Caucasian). Results showed a substantial correlation for 12 of the 18 items with the total *ASK* score. Reliability analysis of the *ASK* revealed an overall Cronbach's alpha coefficient of .79 and a Spearman–Brown split-half of .76 (Favazza & Odom, 1996).

However, children had numerous problems during the *ASK* testing: difficulty following directions, inattention, and questions about the terminology (e.g., "handicap"; Favazza, Phillipsen, & Kumar, 2000). The researchers revised the original *ASK* and examined the reliability of the *Acceptance Scale for Kindergartners–Revised* (*ASK-R*) with a more diverse group of children, including a larger proportion of African American children and children of low socioeconomic status. Of 48 participating kindergartners, 25% were Caucasian and 75% were African American. Reliability analysis of the *ASK-R* revealed an overall Cronbach's alpha coefficient of .87 and a Spearman–Brown split-half of .91. Favazza and colleagues field-tested revisions to the *ASK-R* over a 3-year period.

While some attitude scales such as the *ASK-R* require young children to listen to questions and respond on answer sheets, other researchers have used photographs, pictures, or dolls when administrating scales or questionnaires to assess young children's acceptance of peers with disabilities. For example, Piercy et al. (2002) used two scales, the *Peer Acceptance Scale* and the *Social Distance Scale*, to examine the effectiveness of cooperative-learning activities on 51 children's attitudes toward peers with disabilities in New Zealand. All participating children were enrolled in kindergarten to Grade 2, and they were randomly assigned to a cooperative-learning group or a social-contact group that participated in activities that were similar to the cooperative-learning group but did not include cooperative-learning strategies (e.g., working together, sharing things, helping each other). The *Peer Acceptance Scale* was adapted from Moe, Nacoste, and Insko (1981). This scale includes five items: (a) "Would you feel like helping this child if the child was hurt at school?" (b) "Would you feel like sharing a secret with this child?" (c) "Would you feel like playing with this child?" (d) "Would you say 'hello' to this child?" and (e) "Would you want to work with this child in class?" As each item was presented, children were shown a photograph of one of their classmates with disabilities. For each item, children indicate a *yes* (score = 2), *maybe* (score = 1), or *no* (score = 0). This process continues until each typically developing child completes the entire scale with photographs of all their classmates with disabilities.

Piercy and her colleagues (2002) also used the *Social Distance Scale* adapted from Fenrick and Peterson (1984) to assess children's acceptance of peers with disabilities. This scale provides an index of the extent to which children without disabilities want to be "close to" their peers with disabilities. It consists of six items (e.g., "I think that the children in Miss Brown's class [special education class] should go to a different school than this one," "It would be alright with me if one of the children from Miss Brown's class worked in my room at school for half of the day"). For each item, children respond by saying *yes, maybe*, or *no*. Results revealed that typically developing children in the cooperative-learning groups demonstrated significant

increases in their acceptance of children with disabilities compared with children in the social-contact group.

In summary, researchers have used sociometrics, interviews (using with vignettes), and scales to assess the affective aspect of the attitude construct by considering children's preference and willingness to play with peers with disabilities. Scales such as the *ASK-R* (Favazza & Odom, 1996, 1997) include affective (i.e., "Would you like to play with a child with a disability?") and behavioral (i.e., "Have you helped someone who has a disability?") aspects of attitudes. In addition, many researchers have used pictures, photographs, or dolls in an effort to assess young children's acceptance of peers with disabilities. Although researchers have used many scales and questionnaires, only a few studies include reliability data (e.g., *ASK-R*). Thus, future research needs to examine the reliability and validity of the scales used to assess acceptance.

Measures for Addressing the Behavioral Aspects of Attitudes

Some researchers have assessed behavioral aspects of young children's attitudes toward peers with disabilities by asking questions about their behaviors toward individuals (or peers) with disabilities (i.e., "Do you play with kids even if they look different?" "Have you ever talked to a kid with a disability?"). However, information about behavioral aspects of attitude development is limited when compared with research findings about the measurement of cognitive and affective aspects of attitude development. Researchers have cautioned that methods such as scales, sociometric peer ratings, and interviews rely on children's self-report (e.g., Diamond et al., 2008; Favazza & Odom, 1996), causing concern that children might provide responses they believe would please an examiner or that are socially appropriate. To address this issue, several researchers have conducted direct observations of peer interactions to determine whether young children's self-reports on such measures are consistent with their actual behaviors toward children with disabilities (Diamond, 2001; Hestenes & Carroll, 2000; Okagaki et al., 1998). These research studies have included an examination of the relationship between young children's stated acceptance of, and their actual social interactions with, peers with disabilities

For example, Okagaki and her colleagues (1998) measured the social play of 36 preschoolers toward their classmates with and without disabilities using a 2-s look and 15-s record sweep method. A total of 50 observations were conducted per child in three inclusive preschool classrooms during free play periods. Data were gathered on whether target children were engaged in play behaviors with peers (including social play and parallel play) and whether target children were playing with typically developing peers or peers with disabilities. The researchers also interviewed participating children to assess their social acceptance of hypothetical children with and without disabilities using the *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* (Harter & Pike, 1984, adapted by Diamond, 1994). The children's willingness to play with hypothetical children as play partners was assessed using the *Social Problem-Solving Test–Revised* (Rubin, 1988). A major finding in this study was that children who were more willing to play with hypothetical children with disabilities were more likely to interact with their classmates with disabilities in free play situations.

Diamond (2001) also examined the relationships among young children's ideas, emotional understanding, and social contact with classmates with disabilities. In this study, 45 typically developing preschoolers were observed during free play activities over a 6-week period. An average of 49 10-min observations were conducted for each child. Social contact was defined as a physical or verbal exchange or sustained visual regard, which indicated that the participants were aware of and responsive to each other. Children and adults who were engaged in social contact at the time of the observation were recorded on a class map. In addition to class observations, children were assessed on the following three measures: (a) social acceptance of hypothetical peers with disabilities using the *Social Acceptance Scale* adapted from Harter and Pike (1984), (b) using helping strategies in certain classroom situations with six short vignettes and questions adapted from Rubin's *Social Problem-Solving Task–Revised* (1988), and (c) emotional sensitivity to certain social situations using interview questions adapted from the work of Hoffner and Badzinski (1989). Results showed that half of the children engaged in social contact with at least one classmate with a disability. In addition, 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.

In the third study that focused on the relationship between young children's attitudes and behaviors toward peers with disabilities, Hestenes and Carroll (2000) observed 29 preschoolers using a scan sampling technique. They first selected one area of the classroom or playground to begin each scan and then proceeded in a clockwise direction until the map was complete. During free play periods, observers watched each area containing one or more children for 10 s and then recorded children present, each child's level of play (e.g., solitary, cooperative), and whether a teacher was present. At least 43 observations were collected for each child. The researchers also interviewed the children to assess their overall understanding of hypothetical children with disabilities using the *Competency Ratings for Disabilities* adapted from the *Pictorial Scale of Perceived Competence and Social Acceptance for Young*

Children (Harter & Pike, 1984). The children also rated their preference for playing with each classmate using sociometric ratings. One of the main findings was a positive relationship between children's reported preference to play with classmates with disabilities and their overall score for understanding disabilities. However, they also found that actual social play with classmates with disabilities was not related to children's understanding of disabilities or reported preference to play with classmates with disabilities. Possible reasons for the inconsistent results compared with previous studies (Diamond, 2001; Okagaki et al., 1998) included the following: (a) Hestenes and Carroll did not include parallel play as an observational category, whereas Okagaki and colleagues merged parallel and social play, and (b) one of the two classrooms observed by Hestenes and Carroll only included children with disabilities during free play, whereas Diamond (2001) and Okagaki et al. (1998) conducted their studies in inclusive classrooms.

Although Hestenes and Carroll's (2000) results were inconsistent with the other two research studies (Diamond, 2001; Okagaki et al., 1998), the three studies together suggest the possible presence of the following relationships: (a) children's reported willingness to play with hypothetical children with disabilities may be related to their play interactions with classmates with disabilities (Okagaki et al., 1998), (b) children's acceptance ratings of hypothetical peers with disabilities may be related to their social interactions with classmates with disabilities (Diamond, 2001), and (c) children's understanding of disabilities may be related to their reported preference to play with classmates with disabilities (Hestenes & Carroll, 2000). 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, whereas Hestenes and Carroll (2000) questioned the relationship between children's attitudes and their actual behaviors toward peers with disabilities.

Conclusions, Limitations, and Implications

One purpose of this article was to highlight attitude measures that are based on Triandis's conceptual model (1971). Results of the literature review reveal that cognitive aspects of attitude development have been assessed by considering children's identification of disabilities and their understanding of disabilities. For the affective aspect of attitude development, researchers have assessed children's stated preference (or willingness) to play with peers with disabilities, using sociometric ratings, interviews, or scales. An acceptance scale, the *ASK-R* (Favazza & Odom, 1996), included affective and behavioral aspects and has been used by some researchers. A limited number of researchers observed young children's play behaviors to examine the relationship between attitudes and play interactions with peers with disabilities (Diamond, 2001; Hestenes & Carroll, 2000; Okagaki et al., 1998).

Theories of attitude development suggest that cognitive, affective, and behavioral characteristics interact in the development of attitudes toward individuals with disabilities (Stoneman, 1993; Triandis, 1971). However, Triandis cautioned that there is not always a direct relationship between attitudes and behavior; attitudes are related to behaviors in complex ways. Interestingly, compared with the research measuring cognitive and affective components of attitude development, only a few studies have included behavioral observation with a link to attitude development. In addition, there is limited information on how these three components are related to each other. Thus, future research should examine how these components, alone or in combination, contribute to the development of positive attitudes toward peers with disabilities and what measures can be used to assess each of these components. Indeed, the research reviewed suggests that young children's recognition and understanding of peers with disabilities can be influenced by their observations of, or interactions with, their peers with disabilities in inclusive classrooms (e.g., Diamond & Hestenes, 1994). In addition, the ways in which children think about peers with disabilities may influence their willingness to play with peers with disabilities (Diamond & Tu, 2009). Added to these findings is the fact that young children may not recognize a peer's disability because during the early childhood years, children exhibit such a range of skills (e.g., speech and language issues are common and may not be noticeable as a disability as many children may stutter, mispronounce words, express their thoughts with limited vocabulary, etc.). Additional research should examine the relationship between young children's attitudes and play behaviors toward peers with disabilities, with the ultimate outcome being the development of interventions to promote positive peer relationships leading to friendships between children with and without disabilities.

Another challenge in measuring attitude development is that most measures require children to talk about their thoughts, understanding, and acceptance of hypothetical peers with disabilities using dolls or pictures. This is more abstract than discussing their classmates, peers, or individuals who have disabilities. Thus, replicating the research findings, with a focus on authentic relationships (i.e., peers and classmates with disabilities), would add to the current literature on young children's attitudes toward peers with disabilities. In addition, most researchers have used dolls to represent a child in a wheelchair in an effort to help children understand hypothetical peers with disabilities. These measures have been limited to representing only children with physical disabilities while ignoring intellectual or socioemotional disabilities. Due to these methodological challenges, much of the research in this area suggests a need to develop more appropriate methods for eliciting young

children's understanding of issues related to disability as an important direction for future research.

As we reviewed articles published between 1990 and 2010 that measure young children's attitudes toward peers with disabilities, we focused on research aimed at measuring typically developing children's attitudes toward peers with disabilities. Thus, our review contained very limited information about what children with disabilities thought about, or how they accepted, other children with disabilities. In the field of special education, researchers and educators have worked diligently to include children with disabilities in academic assessment procedures. However, these efforts have mainly focused on monitoring progress in areas such as math and reading with less attention paid to assessing social aspects of development (e.g., peer relationships). Therefore, researchers and educators need to consider what accommodations and supports are necessary so that children with disabilities can participate in attitude measures such as interviews, scales, and sociometric peer ratings.

This article is one step toward gaining a better understanding of the research on measuring young children's attitudes toward peers with disabilities and suggestions for future research on this important topic. Strategies that build and support positive attitudes toward children with disabilities hold promise as one way to effectively welcome and create a sense of belonging for children with disabilities in inclusive programs. If attitude development in turn influences positive peer relationships and the formation of friendships, then the field will have another tool for helping all children reach their full potential.

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