Special Education Professionals’ Perceptions Toward Accessible Playgrounds

Tina L. Stanton-Chapman¹ and Eric L. Schmidt²

Abstract
The perceptions and beliefs of 303 special education professionals toward currently available playgrounds in their school or community were examined. Survey respondents (a) indicated that their students with a disability could not fully participate in their school or community’s playground offerings, (b) discussed the need for a peer buddy program on the school or community playground setting, and (c) dreamed of a fully inclusive playground that meets the needs of all students with and without disabilities. Implications of these findings for playground developers and special education professionals are discussed in terms of universal design facilities and a need to also include social-emotional intervention.

Keywords
perceptions, playgrounds, recreation, disabilities, special education professionals

The construction and architectural design of playground equipment are often criticized for their lack of accessibility and play value despite the Americans With Disabilities Act (ADA) Accessibility Guidelines for Play Areas (2000) and the ADA Standards for Accessible Design (2010), which both advocate for full inclusion. Critics of current playground equipment contend that it is systematic barriers created by society rather than the actual disability that impairs many individuals with disabilities (Jeanes & Magee, 2012; Oliver, 1990). Imrie (1996) argues that public spaces such as parks and playgrounds are designed in ways that maintain and extend the dominance of individuals without disabilities. For example, Ripat and Becker (2012) indicate that many playgrounds have one or more accessible features that are required by law but are not necessarily usable: “A ramp may exist but no play opportunities exist at the top of the ramp” (p. 449). Thus, children with disabilities can access the higher levels of the play equipment by means of a ramp, but have nothing to do once they get there.

Typical playground equipment, including structures meeting ADA mandates, has been under close investigation for its play value. Prior studies have explored general spatial features that affect children’s play behaviors and promote various types of play. For example, Frost, Wortham, and Reifel (2011) found that semiprivate spaces (e.g., places where children felt that they were hidden from others) encouraged more dramatic play. Linked sets of equipment (e.g., bridges or tunnels connecting one side of the playground equipment to the other) also led to more dramatic play (Susa & Benedict, 1994). Playground structures that

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include sandbox areas encourage children to gather together and socially interact in small groups (Czalczynska-Podolska, 2014). Altogether, these playground features encourage typically developing children to develop their social interaction skills with peers and to transition from more solitary play styles to more cooperative play styles.

While the value of playground equipment for typically developing children is evident, it is important to recognize that such equipment does not automatically lead to positive outcomes for all children, especially those with disabilities. Existing literature suggests that children with disabilities are frequently marginalized with current playground equipment (Yantzi, Young, & McKeever, 2010). For example, Jeanes and Magee (2012) reported that children with sensory and physical disabilities often could not use typical playground equipment, as it does not meet their developmental abilities. Using a qualitative study examining caregivers’ perceptions of needs for an inclusive playground for their child with disabilities and his or her typically developing siblings, Stanton-Chapman and Schmidt (in press) reported that many caregivers desire a playground that meets the sensory needs of their child with autism. Specifically, caregivers reported that their child with autism picks grass or wanders around aimlessly as typical playground equipment does not meet their child’s interests. Furthermore, playground equipment that has adapted pieces often singles individuals with disabilities out as being different from everyone else (Jeanes & Magee, 2012). For example, wheelchair swings and adapted swings look different and children, in general, know that they are made for children with disabilities (Stanton-Chapman & Schmidt, in press).

In addition to limited access for play on typical playground equipment, the play behavior of children with disabilities varies from the play behavior of typically developing children. For instance, children with intellectual disability and specific language impairments participate in less conversation and social interactions with peers on the playground (Fujiki, Brinton, Isaacson, & Summers, 2001; Patterson & Pegg, 2009). Children with autism and attention deficit hyperactivity disorder (ADHD) tend to have difficulties interpreting social cues and lack the needed social skills to engage in cooperative play with peers (Cordier, Bundy, Hocking, & Einfeld, 2010; Cosbey, Johnston, Dunn, & Bauman, 2012). These social interaction difficulties may lead to a lack of a best friend in children with severe disabilities (Frankel, Gorospe, Chang, & Sugar, 2011). Disability status (e.g., category of disability; how the disability affects the individual) is one of many factors that may influence children’s play and social participation on typical playground equipment (Shikako-Thomas, Bogossian, Lach, Shevell, & Majnemer, 2013). A clearer understanding of the relationship between play behaviors and typical playground equipment is necessary to develop fully inclusive playground equipment that is appropriate for children of all abilities.

This study is part of a larger study examining the social participation patterns of children with disabilities and their peers. The current study was designed to address four research aims. First, we queried teachers on the type of playground equipment available on their school or local community playground. Because previous research indicated that most playgrounds or recreational facilities only offer equipment that meets minimum ADA guidelines for play areas (Czalczynska-Podolska, 2014), we expected respondents to list typical playground equipment (e.g., slides, swings, ramps, monkey bars) that does not meet the needs of children with sensory needs or physical disabilities. Second, we asked teachers for their opinions for students’ non-participation on a school or community playground. The third aim examined teachers’ beliefs regarding the types of experiences their students have on a school or community playground. The fourth aim asked participants to describe how they would design a fully inclusive playground for students with disabilities (i.e., “their dream playground”). As participants worked closely with students with disabilities, we expected all respondents to describe a playground that was more inclusive than what was currently offered in their school or local community.

**Method**

A survey was conducted with special education teachers and early interventionists in the Commonwealth of Virginia to determine their perceptions and beliefs toward currently available playgrounds in their school or community.
Participants

The Virginia Department of Education was approached to request contact information for all directors of early intervention and special education programs in both private and public agencies. In total, 387 early intervention and special education program directors were consulted. Directors were asked if they would be willing to provide information about an anonymous survey to all early interventionists and kindergarten through sixth-grade (K-6) special education teachers in their programs. Three hundred forty-nine (90%) program directors agreed to assist with the survey. The first author, at the request of one program’s special education director, also attended 30 teacher workdays or professional development days to recruit additional participants.

Participants included early intervention professionals, early childhood special education (ECSE) teachers, and K-6 special education teachers who volunteered to complete an anonymous survey of their perceptions, beliefs, and school needs for inclusive playground equipment. A total of 303 participants agreed to participate and completed the whole survey. Half of the participants were ECSE teachers (n = 152, 50%), and approximately a quarter of the participants were early interventionists (n = 79, 26%) and K-6 special education teachers (n = 72, 24%). The participants were primarily female (n = 268; 88%) and Caucasian (n = 177; 57%) with 31% (n = 94) African American, 5% (n = 16) Hispanic, 1% (n = 4) Asian, and 6% (n = 12) biracial. Most participants (n = 193, 64%) were middle aged between 35 and 55 years. Years of professional experience varied among participants with 168 (55%) having more than 10 years, 72 (24%) having 5 to 10 years, and 63 (21%) having less than 5 years.

Survey Measure

The Playground Attitude and Perception Survey (Stanton-Chapman & Schmidt, 2014) was designed to gather information on special education teachers’ perceptions of their school or community’s playground equipment, and their perceptions regarding the participation of individuals with disabilities in the use of playground equipment. The survey contained open- and closed-ended questions. To strengthen external validity, an initial version of the survey was reviewed by five special education teachers who did not participate in the survey, a nationally certified playground inspector with knowledge of ADA laws, and three university professors with expertise in special education, inclusion, and playground equipment. The survey was revised based on their input (e.g., revisions in the wording of the questions, deleted “leading” questions, added more answer choices to reflect the early intervention population). Twenty-five ECSE and K-6 grade special education teachers who did not participate in the current study piloted the revised survey. Final revisions were made to the survey based on input provided from the pilot (e.g., minor changes in the wording of the questions).

The final survey consisted of 21 questions. Sixteen of the questions were closed-ended and focused on demographics. These questions asked participants to select the most appropriate answer from a list of choices. Five of the questions were open-ended where the respondents provided a written response. The current study reports data on two closed-ended questions (e.g., categories of children served by the participants; the type of playground equipment available) and three open-ended questions. The open-ended questions were as follows: (a) If your student(s) with a disability is not able to fully participate on your school or community playground, what are the reasons for nonparticipation on this playground? (b) Based on your professional experience, describe the types of experiences your students have on your school or community playground? (c) If you could design a fully inclusive recreational facility for students with disabilities, what would it look like (i.e., your dream playground)? While most teachers rated their school’s playground, the term “community playground” was included for early intervention teachers who work with the birth to 2-year population and their families in natural environments.

Data Collection

Data were collected during a 3-month period. Directors who agreed to assist with participant recruitment were sent a link to the anonymous, online survey and were provided with paper surveys and stamped
envelopes addressed to the first author’s research office. Email reminders containing a link to the survey and a statement indicating paper-based surveys were available upon request were sent to program directors every 4 weeks until the end of the data collection period.

To be included in the study, participants had to provide educational services to a child with a disability (birth to Grade 6) and/or his or her family. Participants who chose to complete the online survey clicked on the link and were taken to an electronic consent letter. The survey appeared after the participant agreed to participate. Participants were permitted to complete the online survey one time. It was not possible to control how many paper-based surveys each participant completed, as special education directors distributed these surveys. The survey took approximately 15 to 20 min to complete. Survey respondents were not compensated for their participation.

**Data Analysis**

Paper-based and online survey results were entered into an Excel spreadsheet. Excel’s summation function conducted a frequency count of responses. There were no demographic differences between participants who completed the paper-based or online surveys.

Open-ended responses were also entered into an Excel database. Two research staff with Master’s degrees in ECSE and more than 5 years classroom experience coded responses. A qualitative methodology expert provided feedback on methodological issues during the analysis. Using a content analysis procedure, responses were coded at the word or phrase level to capture the perspective that respondents were describing. It was possible that one response contained multiple key ideas. For example, a response to the question about a dream playground (e.g., incorporates playground equipment that allows children with physical disabilities to go up the structure and has tactile panels) was coded in two different categories (ADA compliant, sensory).

To develop initial categories, one research staff member randomly selected and reviewed 25% of participant answers (77 responses) for each open-ended question and noted key ideas that were represented in each of the responses. The same two research staff then reviewed remaining participant responses looking for similarities across participants to develop initial themes. Once themes were identified, research staff defined the themes using exemplars from answers. Responses that represented discrete units of thought and answered the question were categorized by the theme they exemplified. Incomplete responses or answers that did not answer the question posed were sorted into a miscellaneous category that was analyzed after initial themes were developed.

After developing initial themes, research staff reviewed an additional set of 77 responses (25%) to determine the extent to which these themes were evident in this additional sample. They independently coded the responses using the previously identified categories. Additional categories were developed, while others were combined based on a review of the miscellaneous categories (e.g., incomplete answers; responses which did not answer the posed question). These revised categories were then used to code all of the responses using the NVivo 7 qualitative software program (QSR International Inc, 2007). Twenty percent (n = 61) of the surveys were double coded through random selection for reliability purposes, yielding an interrater reliability of 85%. Disagreements were resolved through discussion to achieve mutual consensus among the coders.

**Results**

A total of 303 surveys were completed. Most survey participants (n = 300, 99%) completed the online survey although a few (n = 3, 1%) completed a paper-based version. Table 1 reports the categories of children served by survey respondents. The most frequent disabilities were as follows: (a) autism (n = 265, 87%), (b) specific language impairment (n = 238, 79%), and (c) developmental delay (n = 214, 71%). None of the participants worked with students with deaf/blindness or visual impairments.

The equipment currently available on participants’ school or community playgrounds is reported in Table 2. As early intervention teachers are home-based professionals, they answered the question by
describing a community playground that was within 10 miles of their Infant-Toddler Agency office. Activity panels (e.g., tic tac toe; spinning wheels), also known as reach range panels, had the most frequent response among all special education professionals \((n = 300, 99\%)\). Activity panels are panels with varying activities that allow children seated in wheelchairs to reasonably extend their arm or hand to touch, manipulate, move, or interact with an object or play component (U.S. Access Board, 2015). Activity panels can be ground or deck level and meet the minimum ADA requirements for accessibility purposes. Other frequent responses included steps \((n = 297, 98\%)\), slides \((n = 279, 92\%)\), and swings \((n = 254, 84\%)\). Equipment reported as least frequently available included wheelchair ramps \((n = 12, 4\%)\) and wheelchair swings \((n = 0, 0\%)\).

Participants were asked to consider reasons why they thought their students with disabilities were not able to fully participate on their school or community’s playground equipment (see Table 3). Most participants \((n = 299, 99\%)\) believed that the facility was not appropriate for their students. Other concerns included worries about their students’ safety \((n = 282, 93\%)\), students not interested in the equipment structure \((n = 201, 66\%)\), and the playground not offering activities the student likes \((n = 162, 53\%)\).

When asked to describe the types of experiences participants’ students have on the school or community playground, three themes emerged: (a) a need for a playground facility to meet the needs of all students, (b) the segregation that takes place on the playground between children with disabilities and typically developing children, and (c) accessible playgrounds and how they can be boring to children. The first theme centered on a need for a playground facility to meet the needs of all students. This was defined as a playground facility where all children, including those with disabilities, can come and play together. A teacher noted, “A few of my students are not interested in the school’s playground. They wander around by themselves because there is nothing they like to do.” Another teacher mentioned the lack of accessible equipment for students with severe disabilities: “My school provides services to students with significant disabilities [severe disabilities]. They expect us to take these kids outside, but the playground [equipment] doesn’t have any ramps for them to use it. Outside time is useless for them.” A third teacher discussed a safety concern with the school’s playground swings: “I have a student with cerebral palsy who has difficulty maintaining her balance while sitting. We have toddler swings available, but I am afraid she will flip out of them.” Safety concerns such as these greatly limit what special education professionals allow their students with disabilities to do while outside.

A second theme revolved around the segregation that takes place on the playground between children with disabilities and typically developing children. This theme was defined as a playground facility or experience that separates children with disabilities from their typical peers (e.g., areas of the playground some children cannot access or use; surfacing which slows down some children). One participant commented,

<table>
<thead>
<tr>
<th>Disability categories</th>
<th>Number of participants</th>
<th>Percentage of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism</td>
<td>265</td>
<td>87</td>
</tr>
<tr>
<td>Specific language impairment</td>
<td>238</td>
<td>79</td>
</tr>
<tr>
<td>Developmental delay</td>
<td>214</td>
<td>71</td>
</tr>
<tr>
<td>Orthopedic impairment</td>
<td>127</td>
<td>42</td>
</tr>
<tr>
<td>Intellectual disability</td>
<td>114</td>
<td>38</td>
</tr>
<tr>
<td>Behavior disorders</td>
<td>101</td>
<td>33</td>
</tr>
<tr>
<td>Other health impairment</td>
<td>98</td>
<td>32</td>
</tr>
<tr>
<td>Learning disability</td>
<td>65</td>
<td>21</td>
</tr>
<tr>
<td>Multiple disabilities</td>
<td>47</td>
<td>16</td>
</tr>
<tr>
<td>Hearing impairment</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td>Deaf/blindness</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Visual impairment</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note. Participants could respond to multiple categories, so percentages do not equal 100%.
"Our community playground is new and meets ADA criteria, but wood chips [surfacing material] prevent children with wheelchairs or walkers from moving around." Another teacher added, "Kids run away from [name of child]; not because they don’t like him, but because he can’t keep up with them. [Name of child] gets frustrated and shouts at them to wait. It’s painful to watch." Another example comes from a teacher who must transfer a child from her wheelchair to the playground structure to give her access to her peers:

Every day I take [name of child] out of her wheelchair and I carry her up the steps [of the playground structure] so she can be with her peers who are playing up there. This is the only way she can make friends.

The third theme focused on accessible playgrounds and how they can be boring to children. This theme was defined as playgrounds that are uninteresting, lack equipment that challenge children, and do not keep children engaged for extended periods of time. A teacher noted, “We have an accessible playground in our community, but older kids don’t want to play on it because they say it is boring.” A second teacher added, “... it’s like we traded one problem for another. Now we have a playground that only kids with disabilities want to use.” Within this theme, participants expressed their concern that accessible playgrounds were built with additional ramps that allowed children with physical disabilities to access the equipment structures but the ramps were built at the expense of other challenging components. As one teacher noted, “There are ramps to nothing. Kids don’t want to use a structure that doesn’t challenge them.”

When asked how they would design a fully inclusive playground for students with disabilities (i.e., their “dream playground”), three themes emerged. The first theme was the need for a playground to meet the needs of children who have sensorimotor concerns. One teacher reflected, “Our playground has a gear board and a solar system board for kids with disabilities to use. The gear board was interesting on the first day, but kids don’t play with it now.” A second teacher discussed the need for a sandbox: “I have a sand table in the classroom that is popular with my students with autism. Our playground doesn’t have a sandbox or anything else that they want to do.”

<table>
<thead>
<tr>
<th>Recreational activity</th>
<th>Number of participants</th>
<th>Percentage of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity panels</td>
<td>300</td>
<td>99</td>
</tr>
<tr>
<td>Steps</td>
<td>297</td>
<td>98</td>
</tr>
<tr>
<td>Slide</td>
<td>279</td>
<td>92</td>
</tr>
<tr>
<td>Swings</td>
<td>254</td>
<td>84</td>
</tr>
<tr>
<td>Tunnels</td>
<td>233</td>
<td>77</td>
</tr>
<tr>
<td>Vertical climbers</td>
<td>192</td>
<td>63</td>
</tr>
<tr>
<td>Bridges</td>
<td>155</td>
<td>51</td>
</tr>
<tr>
<td>Towers</td>
<td>142</td>
<td>47</td>
</tr>
<tr>
<td>Toddler swing</td>
<td>101</td>
<td>33</td>
</tr>
<tr>
<td>Rock climbing wall</td>
<td>93</td>
<td>31</td>
</tr>
<tr>
<td>Incline climbers</td>
<td>87</td>
<td>29</td>
</tr>
<tr>
<td>Tire swing</td>
<td>87</td>
<td>29</td>
</tr>
<tr>
<td>Swing with safety restraint</td>
<td>69</td>
<td>23</td>
</tr>
<tr>
<td>Balance beam</td>
<td>66</td>
<td>22</td>
</tr>
<tr>
<td>Monkey bars</td>
<td>65</td>
<td>21</td>
</tr>
<tr>
<td>Climbing structure</td>
<td>61</td>
<td>20</td>
</tr>
<tr>
<td>Teeter totter</td>
<td>44</td>
<td>15</td>
</tr>
<tr>
<td>Musical equipment</td>
<td>35</td>
<td>12</td>
</tr>
<tr>
<td>Level ramps</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>Wheelchair ramp</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Wheelchair swing</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note. Participants could respond to multiple categories, so percentages do not equal 100%.

Table 2. Currently Available Equipment on Respondents’ School or Community Playground (N = 303).
A second theme focused on the need for peer buddies on playground settings. A respondent noted, “You can have the best accessible playground in the world, but students with disabilities need to be supported on the playground. A good peer model is needed to help them play.” Another teacher mentioned how she uses a peer buddy system on the playground to help children with disabilities make friends:

The first 10 minutes of recess is peer buddy time. I ask students without disabilities to play with a child with a disability during this time. This is the way I make sure that all kids have fun on the playground.

The final theme centered on the need to focus on young children with disabilities when developing new school or community playgrounds. For example, participants specifically mentioned how playground equipment currently available is not appropriate for children 5 or younger. Common responses include the following: (a) “My school only has a playground for the older kids. The preschool kids play on a grassy area [during outside time]. We don’t get to go to the playground because it is for kids 5 and up”; (b) “It’s like the pre-k playground was an afterthought. Ours is tiny and has very little to do compared to what the older kids have. It’s January and the kids are bored when we go outside”; and (c) “We bring bikes, balls, and jump ropes outside for the kids, but those with disabilities have little to do. The PTA is raising money for a preschool playground . . . That will be a long time from now.”

**Discussion**

The findings from this study contribute to the literature in several ways. First, these data confirm previous research that special education professionals view current school and community playgrounds as problematic in meeting the needs of children with disabilities, especially those with sensory needs. While the majority of special education professionals supported children with high-incidence disabilities, some also supported children with severe disabilities and more significant levels of disability (i.e., orthopedic impairment, multiple disabilities, intellectual disability). Overall, special education professionals serving both populations of children indicated that children with disabilities have less access to and/or interest in the playground equipment structures at their school and community playgrounds despite federal regulation supporting more accessible facilities.

The ADA Accessibility Guidelines for Play Areas (2000) and the ADA Standards for Accessible Design (2010) advocate for full inclusion of children with disabilities on playgrounds by ensuring the development of play areas that are accessible and usable by individuals with disabilities. These guidelines mandate at least one type of a play component be provided at ground level in a play area on an accessible route. Different types of play components are based on the general experiences that they provide and include, but are not limited to, experiences such as rocking, swinging, climbing, spinning, and sliding (U.S. Access Board, 2015). Playground equipment that meets the play component guidelines includes swings, activity panels, water tables, slides, and playhouses.

<table>
<thead>
<tr>
<th>Reasons given</th>
<th>Number of participants</th>
<th>Percentage of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility not appropriate</td>
<td>299</td>
<td>99</td>
</tr>
<tr>
<td>Worried about child’s safety</td>
<td>282</td>
<td>93</td>
</tr>
<tr>
<td>Not interested</td>
<td>201</td>
<td>66</td>
</tr>
<tr>
<td>Doesn’t offer activities child likes</td>
<td>162</td>
<td>53</td>
</tr>
<tr>
<td>Child’s peers socially isolate him or her</td>
<td>111</td>
<td>37</td>
</tr>
<tr>
<td>Child receiving related services during outside</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No other kids with disabilities present</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>No playground equipment available</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

**Table 3. Reasons for Nonparticipation on a School or Community Playground (N = 303).**

Note. Participants could respond to multiple categories so percentages do not equal 100%.
Playground developers, by law, only have to ensure that these experiences are offered on the playground site, but they do not have to provide evidence that all children are able to fully use this equipment, have an interest in using it, or ensure that the items have any play value. Given that special education teachers and caregivers of children with disabilities desire developmentally appropriate playground facilities for all children with and without disabilities (Stanton-Chapman & Schmidt, in press), it is important for playground developers and playground equipment companies to create a playful and social environment for all individuals including those with severe disabilities and sensory disabilities. This requires that special educators, caregivers, and policymakers demand playground developers and playground equipment companies go beyond what is minimally required by law and focus instead on meeting the principles of Universal Design (UD) where every child, regardless of ability or disability, is welcomed and benefits physically, developmentally, and socially from the playground environment. Suggestions include (a) inviting families who have children with disabilities, special education teachers and related services providers (e.g., speech-language pathologists, occupational therapists, physical therapists), physicians, and policymakers to product development meetings; (b) eliminating or limiting the sales representative’s profit to be made from the sale of playground equipment; and (c) requiring playground equipment designers to take child development and special education professional development courses, so that they have the knowledge needed to create equipment that is sociable and playable for children of all abilities.

Second, these data expand our understanding of special education professionals’ dream playgrounds for their students. As expected, these findings indicate that participants described a school or community playground that would meet the needs of all children in their classroom or on their caseload. A small, but noteworthy, percentage of participants made a conscious decision to actively ensure full participation of children with severe disabilities, usually by removing children from their wheelchairs and physically carrying the children up the playground structure. These results emphasize the value of providing playground facilities that meet the unique needs and play behaviors of students with severe disabilities. For example, Cosbey et al. (2012) observed children with sensory needs on the playground and reported that they tended to engage in more solitary play that was relatively immature for their chronological age. Indeed, in the current study, special education professionals who work with students with autism consistently mentioned how these students tended to engage in solitary play while on the playground and often did not use the equipment provided. Thus, children with sensory needs have different intervention needs on the playground setting, and these sensory needs ought to be a focus in future playground intervention studies. Possible ideas for sensory equipment, which can be added to the playground setting, include musical equipment, architectural panels consisting of vibrant colors and pictures for visual needs or varying textures for tactile needs, and potent smelling plants for olfactory needs (Cosbey et al., 2012).

Third, participants described the need for peer buddies or supports for students with disabilities. We learned that many special education professionals use peer buddies to connect children with severe disabilities to their typically developing peers. Some of these peer support systems are school-wide programs, whereas others are teacher-implemented programs within the classroom. Carter, Hughes, Guth, and Copeland (2005) document the importance of peer buddies in increasing the frequency of peer interactions among secondary students with intellectual disability. These findings, along with those of the current study, reinforce the importance of teachers making deliberate efforts to promote the social participation of students with disabilities on playground settings.

Finally, many respondents reported the need for school and community playgrounds for the toddler and preschool populations. Several participants indicated that equipment for children younger than 5 years was not available in their school or community, with grassy areas and recreational equipment such as balls or jump ropes as the only options for play. Cardon, Labarque, Smits, and DeBourdeaudhuij (2009) provide evidence that open fields and loose playground toys do not support adequate physical, cognitive, and social play in preschoolers as they do for older children. In its Handbook for Public Playground Safety, the U.S. Consumer Product Safety Commission (2015) discuss how preschool and school-aged children differ dramatically in physical, mental, and social ability, and thus, age-appropriate playground designs should accommodate these differences with regard to the type, scale, and layout of the equipment. The U.S. Access Board (2015) recommends preschool play areas to include areas to crawl, low platforms with multiple
access such as ramps and ladders, ramps with pieces attached for grasping, low tables for sand, water and manipulation of materials, tricycle paths with various textures, flexible spring rockers, sand areas with covers, and shorter slides (usually no taller than 4 feet). Playground equipment, therefore, should meet the needs of children below 5 years by providing different opportunities to engage in appropriate developmental play.

Limitations
This study has several limitations. First, this study involved heterogeneous groups of participants, including early interventionists, ECSE teachers, and K-6 special education teachers. It is likely that those who responded to the survey tended to be special education professionals who were more invested in the topic as their students had more negative experiences on playground settings, had limited options for playground play, or had no playground equipment appropriate for their given age. Given that the majority of participants were early childhood professionals or served students with autism, this phenomenon is quite possible. Special educators who have students with more positive experiences on the playground may have had very different points of view. Second, the sample only represents the perspectives of special education professionals in one state. Although the state is quite diverse, survey parameters did not allow for data analysis to focus on geographic location. Third, one of the challenges with survey responses is the accuracy of respondent reporting and whether given responses reflect actual experiences and beliefs or socially desirable answers. The use of multisource and multimethod strategies for needs assessment including interviews and observation is recommended to provide a more reliable dataset to guide the development of fully inclusive playgrounds. Fourth, none of the participants worked with students with deaf/blindness or visual impairments. These students may have sensory needs that vary from students with autism. This population of students must also be considered when designing and building inclusive playground facilities.

Implications
Caregivers and teachers of children with disabilities often report challenges in locating playgrounds that accommodate the range of ages, skills, and interests of all children (Jeanes & Magee, 2012) and find that play equipment designed to foster creative play in typically developing children is not sufficient to support such play in children with disabilities. Existing literature suggests that children with severe disabilities are often marginalized within typical play spaces, especially if such children have sensory needs (Yantzi et al., 2010). Since the release of the ADA Accessibility Guidelines for Play Areas (2000) and the ADA Standards for Accessible Design (2010), playground developers have replaced their quest for building playgrounds that have social value to building play spaces that comply with the minimum accessibility standards as set forth under the Americans With Disabilities Act. Cosbey et al. (2012) advocate that playgrounds for children with severe disabilities should incorporate activities that involve vestibular, proprioceptive, and tactile input, and follow the principles of UD, so that every child, regardless of ability or disability, is welcomed and benefits physically, developmentally, and socially from the environment.

If our goal is to support the recreational play of all individuals with and without disabilities, research suggests that playground developers, special educators, researchers, and policymakers consider several critical factors when developing playgrounds. One essential factor is being cognizant of the sociability and playability of the playground. The sociability of a playground is essentially the social potential for children to engage in social play and apply social skills such as cooperation, demonstrate understanding of social rules, and participate in social interactions with others (Czalczynska-Podolska, 2014). Similarly, the playability of a playground is the play potential for children to engage in actual play (e.g., dramatic play, play with peers) and nonplay activities (e.g., wandering around the playground; Czalczynska-Podolska). Both sociability and playability can be achieved by including spatial features in the playground that generate both social integration and interactions between children. Devine and Parr (2008) advocate that playgrounds should allow all children to attain goals, be active participants in play, and have autonomy and choice over their play experiences. By enhancing children’s playground experiences through the consideration of
sociability and playability of the equipment, including UD in the overall design, and going beyond what is
minimally required by law for children with disabilities, we can promote play in children of all ability levels
within an inclusive setting.

A completely inclusive playground that meets the ability levels of all children is not enough to support
the social-emotional development of children with disabilities. Evidence indicates that social skills inter-
vention and support is needed to develop the social skills of children with disabilities (e.g., Frankel et al.,
2011). Without such intervention and support, we may be setting up children with disabilities for failure.
For example, Jeanes and Magee (2012) highlight the importance of having trained play workers who can
facilitate social interactions between children with and without disabilities while on a playground setting;
they found that this approach helped bring children together and facilitated shared play experiences. Other
researchers advocate for the importance of including typically developing siblings in the development of
social skills in children with disabilities in the home setting (El-Ghoroury & Romanecz, 1999; Tsao,
Davenport, & Schmiege, 2012), but this intervention practice could also be considered for a recreational
facility play space setting.

Because research provides fairly clear guidelines for improving children with disabilities’ experiences
on playgrounds, it is important for playground developers and policymakers to build playgrounds that con-
sider play and social potential, follow the principles of UD, and incorporate activities that involve vestibu-
lar, proprioceptive, and tactile input. Special educators and researchers should consider providing children
with disabilities, their siblings, and typically developing peers with social-emotional skills training to com-
plement the inclusive playgrounds. Future research should focus on developing social-emotional interven-
tions that target UD play spaces. These interventions may result in outcomes that enhance overall family life
and quality, strengthen the sibling bond, and allow children with disabilities the opportunity to socially
interact with same-age peers and typically developing siblings, develop new skills, and gain some indepen-
dence (Mactavish & Schleien, 2004).

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