Creating Inclusive Playground Environments Following the Principles of Universal Design

Collaborative Strategies to Promote Family Participation in the Design and Development Process

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Megan and Jonathan took their children, Nathan, a 2-year-old with autism spectrum disorder, and Maddie, a 7-year-old who is developing typically, to their community playground. “Maddie is having so much fun going up and down the slide,” said Jonathan. “Where is Nathan?” asked Megan. “I don’t know, but let me look.” Jonathan then searched for his son. “He is over here by the fence picking grass,” Megan answered, “He never seems to play on the playground equipment or with his sister. I wish he would do more than wander around.”

An important component of early childhood inclusion is the recognition that every child and his or her family has the opportunity, regardless of ability, to fully participate in a broad range of activities and opportunities in the local community, including playground settings (Division for Early Childhood [DEC] & National Association of the Education of Young Children [naeyc], 2009). This requires playground developers, designers, and manufacturers to understand and be responsive to the differences in children’s abilities, skills, and behaviors and also be cognizant of the varying needs of families, especially those who have a child with a disability and a child who is typically developing. Although there has been an increased interest and investment in building accessible playgrounds for children with disabilities, the vignette shows that many families have unmet needs.

The construction and architectural design of the overall playground environment (i.e., play equipment, ground surfacing) is often criticized for its accessibility and play value for all children with disabilities despite such guidelines
as the Americans with Disabilities Act (ADA) Accessibility Guidelines for Play Areas (2000) and the ADA Standards for Accessible Design (2010) advocating for full inclusion. Accessibility guidelines, in general, provide the minimum accessibility requirements for a public playground, but these guidelines do not ensure that all children benefit from the playground environment. When playground developers target the minimum standards, play value is ignored and children with disabilities miss out on the potential social, emotional, and communication benefits that playground play has to offer.

Playgrounds should be more versatile and usable to all populations of children. Rather than focusing on meeting minimum requirements to achieve usability, playground developers, builders, and manufacturers should apply 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 (Center for Universal Design, 1997). UD has seven founding principles: equitable use, flexibility in use, simple and intuitive use, perceptible information, tolerance from error, low effort, and size and space for approach and use. These principles are consistent with the DEC Recommended Practices (2014) and the dec/naeyc (2009) position statement on inclusion. Specifically, they address DEC Environment practice E2, which is that professionals should consider UD to create accessible environments.

**Results From Prior Studies Regarding the Play Value and Usability of Current Playgrounds**

Inclusion is a federal policy that promotes the integration of children with disabilities into the mainstream educational and community settings (Baker, Wang, & Walberg, 1994; Nisbet, 1994). Physical proximity with peers who are typically developing on accessible playground equipment is thought to be critical in assisting children with disabilities to develop social and communicative skills, but physical proximity of children with disabilities on accessible playgrounds alone is not sufficient for successful socialization. Furthermore, an accessible playground may meet the legal ADA mandates for playground accessibility but still exclude access to some or all playground equipment for some children with disabilities.

Prior observational studies examining the play behaviors of children with disabilities suggest that children with disabilities, particularly those with physical disabilities, may not be able to participate on an accessible playground to the same extent as their peers who are typically developing (Parkes, McCullough, & Madden, 2010). Children with autism spectrum disorder (ASD) may also find playground time to be a challenging and overwhelming experience because of its large, undefined space; its lack of predictable and structured play routines; and varied play styles exhibited by peers (Flynn & Kieff, 2002; Nabors, Willoughby, Leff, & McMenamin, 2001). They are also less engaged in moderate-to-vigorous physical activity than peers who are typically developing and less likely to socially interact with peers (Pan, 2008). Research investigating stress levels of children with ASD during playground play may provide a clue as to why children with ASD find typical playgrounds aversive. Edmiston, Merkle, and Corbett (2015) found that cortisol levels in children with ASD increased once they entered a
playground facility and levels became extremely high when the children were asked to interact with a peer.

Parent report studies using survey and/or interview data also indicate a lack of equity between children with disabilities and their peers who are typically developing on accessible playgrounds. Darcy and Dowse (2013) questioned caregivers of children diagnosed with an intellectual disability about the constraints they faced in locating appropriate playgrounds and sporting activities for their children. Caregivers indicated there was a lack of appropriate playgrounds in their geographic location and little information available to them that indicates where they can take their children to play. In a survey asking caregivers about their families’ playground needs, caregivers of children with disabilities consistently mentioned how their child plays alone on a typical playground and often does not use the equipment provided (Stanton-Chapman & Schmidt, in press-a). Furthermore, caregivers mentioned the need for a playground that met their child’s sensory needs and suggested such a structure be built near typical playground equipment so they could bring all of their children to one setting. Finally, Estell et al. (2009) reported that families were apprehensive in taking their child with a disability to a typical playground because of the possibility of their child being teased or bullied.

Several studies also have sampled special educators about their opinions on the play value of their school playgrounds or their beliefs on the supports students with disabilities require on the playground. Stanton-Chapman and Schmidt (in press-b) interviewed special education teachers regarding the experiences their students had on the school playground. They overwhelmingly discussed how the school playground was boring for most children and lacked play equipment that met the needs of all children and kept them engaged. In a literature review exploring school recess time and play behaviors of students with ASD, Lang et al. (2011) concluded that students with ASD may need additional social and communicative supports on the playground to benefit fully from what an accessible playground has to offer. O’Hara and Hall (2014) concurred with the findings of Lang et al. by demonstrating that structured work systems could be used by special education teachers to keep students with ASD engaged with playground equipment during recess on school playgrounds.

Finally, recent observational studies exploring the play value of playground equipment provide interesting feedback to special education professionals and families who have children with disabilities. In a study examining the types of playground equipment most frequently used by children on school playgrounds, Anthamatten et al. (2014) indicated that playground structures and swing sets
Successful playgrounds are not simply ordered from a manufacturer’s catalog, built from a playground installer, and left. Inclusive UD playgrounds require careful thought, planning, continued maintenance, and frequent updates to make sure they continue to meet the needs of the community.

were more popular than hard-play surfaces without equipment. Other studies (Czalczynska-Podolska, 2014; Norðdahl & Einarsdóttir, 2015) found that children prefer to play in sand areas where they can use water, sand, sticks, and sand toys to explore during play. In an investigation studying the type of play equipment children with disabilities prefer to play with on the community playground, Stanton-Chapman and Schmidt (2016) found that children with disabilities preferred to play with musical equipment, go down slides, and hide in tunnels, and they rarely used or ignored activity panels (tic-tac-toe, spinning wheels). This is an interesting finding because activity panels are typically marketed as a sensorimotor activity for children with disabilities and are ADA compatible.

**Collaborative Strategy Cycle to Promote Family Participation in the Design and Development of Inclusive UD Playgrounds**

Designing developmentally appropriate, inclusive, and UD environments for play is an ongoing process. Successful playgrounds are not simply ordered from a manufacturer’s catalog, built from a playground installer, and left. Inclusive UD playgrounds require careful thought, planning, continued maintenance, and frequent updates to make sure they continue to meet the needs of the community. Current practice suggests that families and professionals should build relationships and work together to achieve mutually agreed upon outcomes and goals that address families’ priorities and concerns and their children’s strengths and needs (DEC/NAEYC, 2009). Specifically, DEC Family practice F4 states that professionals and the family should “work together to create outcomes or goals [and] implement practices that address the family’s priorities and concerns and the child’s strengths and needs.” Unfortunately, professional–family collaboration does not necessarily occur when accessible playgrounds are designed and built as evidenced in the vignette. The family described in the vignette experienced an accessible playground that failed to meet Nathan’s needs because he did not engage with the playground equipment or his sister.

The purpose of this article is to describe the Collaborative Strategies Cycle communities can use to support the development of inclusive UD playgrounds in their neighborhoods (see Figure 1). Local community governments, playground developers, and construction workers typically use a traditional playground cycle when they build a playground—from beginning to end (Heseltine & Holborn, 1987). Local community governments, however, often proceed through the traditional playground cycle when developing neighborhood playgrounds—without the input of local residents (Stanton-Chapman & Schmidt, 2016). Local community governments have a responsibility to make sure that their playgrounds are settings in which all children and their families feel accepted. For this goal to be accomplished, active participation of families in the playground development cycle is an essential component of high-quality, inclusive early childhood environments. Active family participation in the development and building of new playgrounds addresses DEC Teaming and Collaboration practice TC2: “Practitioners and families work together as a team to systematically and regularly exchange expertise, knowledge, and information to build team capacity and jointly solve problems, plan, and implement interventions.” To ensure that
teaming and collaboration take place between families and professionals in the playground development process, we integrated many of the collaboration strategies discussed in King-Sears, Janney, and Snell (2015) with the playground development cycle discussed by Heseltine and Holborn (1987) to develop our Collaborative Strategies Cycle.

The following steps in the cycle are described in depth using Nathan’s family for further clarification so that local communities can encourage active participation by families in each step of the cycle as well as use family input in supporting the social play of all children on community playgrounds. Tips for applying the strategies are in Table 1. These tips are suggested tasks and activities that communities can use when applying each step within the Collaborative Strategies Cycle.

**Stage 1: Preparation**

The overall success of an inclusive UD playground depends on how well it meets the needs of the families and their children in the community where it is built. Many families who have children with disabilities are unhappy with the accessible playgrounds in their neighborhoods because they do not meet the needs...
of their children with disabilities (as evidenced by Nathan) and sometimes their children without disabilities (Stanton-Chapman & Schmidt, in press-a). Once a community has decided to build an inclusive UD playground, it is important to develop focus groups and engage local families in a conversation about the type of playground that is needed. Focus groups are a form of research in which a group of people are asked about their opinions, beliefs, and attitudes toward a concept (Gibbs, 2012). Questions are posed to the group and the participants are free to talk interactively. For the focus groups, it is important to recruit families who have children with disabilities as well as families who have children who are typically developing. These focus groups can provide input on the needs of the families and their children in their community, the community’s willingness to assist in the long-term maintenance of the playground, and their overall happiness with the final product. Furthermore, this practice addresses DEC Family

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<th>Tips for Applying the Steps and Strategies in the Collaborative Strategies Cycle</th>
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| Preparation and planning | • Recruit families for the focus groups by posting flyers in buildings visited by families (e.g., library, post office, grocery stores, pediatrician offices, churches), sending flyers home with children in schools, and requesting their assistance in community newspapers  
• Serve refreshments during the focus group meetings and offer free child care to encourage maximum attendance  
• Form the steering committee by asking individuals who will best serve the needs of the community and keep the interests and needs of families at the forefront |
| Design | • Observe children of all ages and abilities playing on current community playgrounds (e.g., parks, schools)  
• Consult the professional literature to learn the interests and play preferences of children with and without disabilities (e.g., equipment, surfacing, settings for play)  
• All steering committee members should consider how their beliefs, values, and experiences influence their decisions and reflect on whether their idea or vote is a personal choice or is based on what the community truly needs  
• Consult the services of several playground equipment manufacturers after all data has been collected to ensure that the best decisions are made for the community |
| Construction and installation | • Schedule several site visits by committee members at the beginning of construction and installation and place these dates on the calendar. They can be rescheduled, if needed, but this ensures site visits will not be forgotten as things become hectic  
• Recruit families for the site visits and the volunteer workforce by posting flyers in buildings visited by families (e.g., library, post office, grocery stores, pediatrician offices, churches), sending flyers home with children in schools, and requesting their assistance in community newspapers |
| Opening and use | • For ribbon-cutting ceremonies, invite local disability organizations to the event to make them aware of the inclusive UD playground. These organizations may be potential funders for maintenance and future repairs.  
• Develop a parent social committee whose purpose is to plan events and activities at the inclusive UD playground. Members can be recruited by asking families who frequently visit the inclusive UD playground or through flyers posted throughout the community. |
practice F3: “Practitioners are responsive to the family’s concerns, priorities, and changing life circumstances.”

Several focus group families, if not all of the families identified in the early stages of preparation, should be formally asked to participate in a steering group. A steering group’s purpose is to manage the general course of operations for the inclusive UD playground. At a minimum, at least one family who has a child with a disability and one family who has a child who is typically developing should be invited members of the steering committee.

Given their recent experience with Nathan and Maddie at their community playground, Megan and Jonathan joined their community’s steering committee to develop a new community playground in their neighborhood for children with and without disabilities. Megan and Jonathan represent families who have children with autism. Other members of the steering committee should include playground designers, playground manufacturers, a council member from the representative community who has knowledge of local laws and policies, a parks and recreation representative who will be involved in the maintenance of the playground, and special educators and related service personnel (e.g., occupational therapists, physical therapists) who may offer professional expertise regarding children with disabilities. Together, the steering group team can be more responsive to families’ concerns, priorities, and changing life circumstances and come up with an

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| Maintenance | - The steering committee should meet with local officials to make certain a maintenance budget for repairs to the inclusive UD playground is in its yearly operational budget. The steering committee should also investigate potential foundation or grant funding for maintenance.  
- Recruit families for litter collections and the parent-playground satisfaction committee by posting flyers in buildings visited by families (e.g., library, post office, grocery stores, pediatrician offices, churches), sending flyers home with children in schools and requesting their assistance in community newspapers  
- Recruit high school students for litter collections as part of a service project for a social club or community service hours |
| Update | - Recruit families for the playground satisfaction surveys by posting flyers in buildings visited by families (e.g., library, post office, grocery stores, pediatrician offices, churches), sending flyers home with children in schools, and requesting their assistance in community newspapers  
- Develop paper and pencil and online surveys using questions that focus on family demographics (e.g., ages of children in the household, the types of disabilities the children in their home have, if any), children’s interests, preferences, and abilities; family interest in visiting the inclusive UD playground; and things the family likes and doesn’t like at the inclusive UD playground  
- Conduct informal observations of children of all ages and abilities during play on the inclusive UD playground. Keep track of where children play and don’t play. Observations should take place on multiple days and times (weekends, weekdays, mornings, evenings, afternoons) to obtain a representative sample |
agreed-upon philosophy of how all children in the community can be included within the playground setting (DEC/NAEYC, 2009).

**Stage 2: Design**

Once a steering group is formed, the next step is designing the inclusive UD playground. A series of meetings to discuss what will benefit the community's children the most are needed to ensure that the needs of all families in the community are considered. It is important that the committee starts with the following questions rather than beginning their conversation with what type of playground equipment is needed or browsing through manufacturer catalogs. Quite often, sales representatives from playground manufacturer companies show communities the type of equipment that is available for purchase and typically “push” communities to purchase the more expensive items regardless whether the items are appropriate for the community or beneficial to its children (Stanton-Chapman & Schmidt, 2016). This process can lead to playgrounds that may not be appropriate for the children in the given community and many unhappy families.

Questions to answer during steering group meetings include: (a) What does an inclusive UD playground look like? (b) How should children be engaged on an inclusive UD playground? (c) What do you want children to be doing on an inclusive UD playground? (d) How can adults support children during play on an inclusive UD playground? and (e) How should families feel when they are visiting an inclusive UD playground? The answers to these questions will provide insight to what color schemes, sounds, textures, surfacing, and equipment the children may like and will meet DEC Environment practice E6: “Practitioners create environments that provide opportunities for movement and regular physical activity to maintain or improve fitness, wellness, and development across domains.” Additionally, the answers also will help the steering committee address accessible parking, fencing, and nearby hazards and move on to the construction and installation of the inclusive UD playground.

Megan and Jonathan, as members of their community’s steering committee, state that their community's current playground does not offer equipment that Nathan enjoys and, thus, his physical needs are not met. They recommend that the steering committee consider more sensory equipment and activities (e.g., musical equipment, tactile experiences, olfactory experiences) to meet their son's sensory needs.
**Stage 3: Construction and Installation**

Typically in the construction and installation phase, the playground installer assumes responsibility for the building of the playground. However, it is still critical that the steering committee, especially the family members on the committee, be involved. One strategy to consider is to arrange several site visits with the local community during the construction and installation stage. Frequent on-site visits to the construction site by community members may help create a sense of ownership of the new playground to the community. In addition, inviting families who have children with disabilities to the construction site may develop positive rapport between the families and construction staff, further enhancing recommended practices of building trust and respectful partnerships with the family (DEC, 2009).

*Revisiting the vignette, we learn that Megan and Jonathan frequently visit the new playground site and discuss progress with the construction workers. They hope to prepare Nathan for the “grand opening” by taking many pictures of the playground’s progress over time.*

It may also be possible to enlist the local community in the construction and installation of the inclusive UD playground through volunteer involvement. Provided that all safety concerns are addressed prior to volunteer assistance, it may be possible to reduce labor costs by enlisting family members who are able to donate time to the cause. By using a local volunteer workforce, it is hopeful that community members feel a sense of ownership toward the finished product as well as feel empowered that they contributed to their local community, resulting in a beautifully constructed expression of shared pride.

**Step 4: Opening and Use**

Once construction and installation of the inclusive UD playground is complete, the next step in the Collaborative Strategies Cycle is opening and use. Opening and use of the inclusive UD playground should begin with a ribbon-cutting ceremony. Ribbon-cutting ceremonies bring enthusiasm and pride to the local community. They also provide an opportunity to thank the steering committee, the volunteer workforce, funding sources, and local government officials for their time and effort.

The ribbon-cutting ceremony should be a community fun day where children of all abilities take an active role in play. If planned appropriately (e.g., inviting television and newspaper reporters, providing refreshments), the ribbon-cutting ceremony also can raise the profile of the inclusive UD playground and bring visitors from nearby neighborhoods who may be willing to contribute financially and physically to the overall maintenance of the playground. One strategy to increase the chance of news coverage would be to approach a newspaper or television station well before the ribbon-cutting ceremony and suggest a family they could interview about their involvement in the process and how much they are looking forward to enjoying the new playground.
Megan and Jonathan bring their children, Nathan and Maddie, to the ribbon-cutting ceremony for their new community playground so they can celebrate the first day they are able to play together as a family. After the ribbon is cut, Megan and Jonathan are excited to see Nathan and Maddie play together for the first time on a playground with musical instruments.

Publicity of the inclusive UD playground is critical to its sustainability. Publicity may be occasional or ongoing, depending on the local community’s preferences. The steering committee or a parent committee formed for this purpose may take the lead in planning events and activities at the inclusive UD playground. Family picnics, peer-buddy play groups between children with and without disabilities, and school field trips are just a few examples of the activities or events that can be planned by the steering or parent committee. These activities can help families who have children with disabilities feel comfortable with the environment and more willing to take their children to the playground on a frequent basis. Additionally, memories of positive, quality family experiences may be developed, alleviating previous caregiver concerns of negative situations experienced by their children with disabilities on playgrounds (Stanton-Chapman & Schmidt, in press-a).

**Step 5: Maintenance**

Ongoing maintenance of the inclusive UD playground is crucial to its success. In the early stages of planning and development, the steering committee should make financial plans for maintenance because successful playgrounds tend to have excessive wear and tear. Equipment and surfacing may need to be replaced, and funds need to be readily available to replace these items.

Family members can contribute to this step of the Collaborative Strategies Cycle in several ways. First, frequent and organized litter cleanup events can be planned to keep the inclusive UD playground free of trash. Second, the inclusive UD playground should have signs that indicate the appropriate age range for the playground and contact information for playground patrons to call if there is broken equipment, vandalism, or a possible safety concern. Families should contact the individuals responsible for repairs to maintain a safe environment for their children. Communities should do their best to respond to these concerns in a timely manner; Prompt repair of problematic items is crucial for the community’s morale and pride. Twenty-four to 48 hours is the expected time to have minor repairs fixed (e.g., repairs not requiring equipment to be ordered and installed).

Finally, another parent committee can be established to evaluate the current equipment and surfacing to determine whether it continues to meet the community’s needs. Community residents may come and go, and it is crucial to make a list of needed changes so the community continues to be satisfied with the inclusive UD playground. Additionally, it is possible that children will move into the community and have disabilities that vary from the disabilities previously considered during the preparation and planning step of the playground. Their needs must be addressed, and this process meets DEC Environment practice E3:
“Practitioners work with the family and other adults to modify and adapt the physical, social, and temporal environments to promote each child’s access to and participation in learning experiences.” Any needed changes to the inclusive UD playground will assist the steering committee during the final step of the Collaborative Strategies Cycle.

Megan and Jonathan serve on their community’s safety committee. Their role is to visit the playground weekly and report any issues that need to be addressed, such as broken equipment, graffiti, and/or public nuisances.

**Step 6: Update**

As new residents move into the community and current residents move and/or age, use of the inclusive UD playground will change, requiring the steering committee to evaluate the overall satisfaction of the playground to see whether it is still meeting the families’ needs. Playground satisfaction surveys should be completed every one to three years using paper and pencil and/or online surveys. Observations of children of all ages and abilities on the playground also should be conducted frequently to determine which equipment is preferred or not preferred. The information from the surveys and observations will provide the steering committee with data on what is working and what is not working in terms of the playground equipment, surfacing, and environment. Any needed changes, whether major or minor, can be made during this step. It is critical that the community’s park and recreation agency have a budget for improvements. This budget can come from the local community, state funding, or foundations and grants. This will allow the inclusive UD playground to have continued success rather than fail from neglect or nonuse for not meeting the needs of the community.

In Megan and Jonathan’s community, the steering committee reports that the rubber surfacing needs to be replaced and that the playground would benefit from a community garden with raised planting beds so grandparents with physical disabilities could grow vegetables with their grandchildren. The local parks and recreation agency agrees to these improvements and pays for the project.
Conclusion

Participation in inclusive UD playgrounds can provide many opportunities for children with disabilities to play and socially interact with peers with a wide range of abilities and skills. However, some children, such as Nathan, may have little interest in their accessible community playground because it does not meet their specific needs. Accessible playgrounds alone are not sufficient to promote positive playground experiences in children with varying abilities, skills, and behaviors. However, communities can support the social play of all children in their communities by encouraging family participation in every step of the Collaborative Strategies Cycle when developing inclusive UD playgrounds in their neighborhoods. Ultimately, communities have a responsibility to make sure that their playgrounds are settings in which all children and their families feel accepted. To accomplish this goal, active participation of families in the development of inclusive UD playgrounds is an essential component of high-quality, inclusive early childhood environments.

References


