# CREATING INCLUSIVE OUTDOOR PLAY ENVIRONMENTS; DESIGNING FOR ABILITY RATHER THAN DISABILITY

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## ABSTRACT

Creating playgrounds for children with disabilities has become increasingly fashionable. Unfortunately, overly eager to create 'accessibility,' many designers have created barrier-free environments for wheelchairs with little regard for the child who sits in it. This paper seeks to help designers understand the difference between accessibility (the removal of physical barriers) and inclusion (the removal of social barriers). Appropriate design recognizes that a child with a disability is a child with abilities, and that activity, rather than appliance, oriented design creates a setting where all children may be included in the fun.

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## Introduction

The most common effects of any child's disability is peer isolation. As landscape architects involved in the design of children's play environments, the inclusion of children with disabilities among their peers should be one of the principal goals of the design of outdoor play settings. Understanding children with disabilities, and what they are capable of is the first step toward designing truly 'inclusive' environments.

This article first looks briefly at the importance of play in the development of children, especially those with disabilities. It then proposes a play environment design model based on opportunities for types of play activities, rather than an equipment oriented approach, and emphasizes the importance of such in ensuring social integration as a standard, rather than physical access only.

## The Importance of Play

While the importance of play in a child's healthy development has long been appreciated, until the 1900s play was seen as auxiliary to developmental activities. Contemporary theorists have since elevated the importance of play to that of a method for understanding the world and an indication of cognitive development (Frost and Klein 1979, p. 6). An important distinction to be made, however, is that children experience play at two levels: one that merely occupies the child, the other that contributes to development (Parry and Archer 1975, p. 10). Play may be structured, required, and uninteresting, and children may only be allowed to play beneath their cognitive level. Free play, on the other hand,

occurs at the child's discretion, according to the child's developmental level and individual pace of learning, and evolves as the child does. In order to differentiate between the two it is useful to understand and recognize the elements that exist in developmentally beneficial free-play. Free-play meets the following five conditions. (1) Free play is voluntary - whether or not to participate, and at what level, is based solely on the individual's discretion. (2) Free play is spontaneous - the ebb and flow of play is determined by the individuals involved. (3) Free play involves a pretend element – while it may be in the form of an everyday experience, the events and individual roles are different from everyday experience and are determined by the players rather than outside influences. (4) Free play is engaging – the players are engaged in the activity and separated from surrounding activity. (5) Free play is fun and pleasurable – participation is stimulating and enjoyable (Frost, Wortham and Reifel 2001).

Play and Children with Disabilities

While free play better meets the developmental needs of the child, whether disabled or able-bodied, opportunities for free play are doubly important for children with disabilities. "The... [disabled] human has greater need for recreation or play services because their limited circumstances to some extent prevent their exploring for opportunities for themselves" (Ellis 1973. P. 147). Additionally, "many [children with disabilities] spend a disproportionate part of their time in [an] environment, such as a school or institution, where play tends to be structured, organized and restricted. Such children have been shown to be particularly slow in language development and social skills" (Wolff 1979, p. 87). Ample free play opportunities establish children's disposition to take risks and to believe that they are competent, capable learners. Sadly, even a cursory examination of current play environments shows that children

with disabilities are often merely occupied in the play environment. In order to provide meaningful play opportunities for all children, especially those with disabilities, it is necessary to understand the needs of children and the implications of a disability on the child.

The Developmental Needs of Children with Disabilities

The development of children starts at birth and continues into adulthood. Children need to develop in five crucial areas for proper growth: social/emotional, intellectual, sensory, perceptual-motor, and physical development (Ministry of Education 1993, pp. 11-12). All children, regardless of their abilities, pass through the same developmental stages in the same sequence, only the timing and rate vary (Federlein 1981, p. 37). The crucial concept to understand is that the similarities between children with disabilities and able-bodied children are far greater than the differences. At the same time, differences in the rate of development may occur in one, or more, developmental areas according to the child's disability: social-emotional disabilities, perceptual-intellectual disabilities, and physical disabilities.

Social-Emotional disabilities affect a child's ability to deal with others and are often manifest as withdrawal, aggressive behavior, and difficulty in dealing with abstract ideas. These children may have a reduced interest in the world and individuals around them. They may experience difficulty learning, be developmentally delayed in a number of areas, and consequently suffer from a poor self-concept. Autism is the most severe of social-emotional disabilities (Frost and Klein 1979, p. 221; Moore et al. 1979, pp. 10 and 13).

Perceptual-Intellectual disabilities are the most common disabilities, which make internal-to-external expression and external-to-internal interpretation of the world difficult. Commonly referred to as learning disabilities, this category includes visual, hearing and

communication impairments, and mental retardation (Frost and Klein 1979, p. 221; Moore, et al. 1979, pp. 10 and 12).

Physical disabilities, which have received the majority of attention in regard to play environment design, are actually the least common type. Physical disabilities range from simply being 'clumsy', to moderate forms that may require the use of a prosthetic, wheelchair or other mechanical aid, to severe forms where there is extremely limited motor control. While many physical disabilities are relatively easily overcome with assistive devices (Frost and Klein 1979, p. 221; Moore et al. 1979, pp. 10-11), depending on their severity they may lead to varying developmental delays.

Understandably, playgrounds that emphasize one or two developmental areas will be barren to the child whose disabilities effect their development in those areas. Studies of community parks indicate that “no distinction is made for different developmental or age groups… thereby reducing opportunities for creative play" (Frost and Woods 1998, p. 236). As a result of the absence of appropriate outlets for the abilities of the disabled child, the most common effects of the disability is peer isolation. The inclusion of children with disabilities among their peers should be one of the principal goals of the design of outdoor play settings.

Access, Inclusion and Integration

A great deal of energy has been spent in the last fifteen years endeavoring to include children with disabilities in play settings by ensuring equal access. The principal achievement of this effort is the Americans with Disabilities Act (ADA), which provides comprehensive civil rights protections to individuals with disabilities in public accommodations (U.S. EEOC and DOJ 1991, p. III-1). Its chief focus is to remove physical barriers that would otherwise

keep people with disabilities from participating in the public aspects of society. The resultant guidelines (ADAAG), which further define the intent of the ADA, provide guidance on removing physical barriers to participation. However, a distinction must be made between accessibility (the removal of physical barriers) and inclusion (the removal of social barriers). As "play is a social experience as well as a cognitive and physical experience… the social experience must be accessible to everyone" (Recreation Access Advisory Committee 1994, p. 89). The removal of physical barriers does not necessarily promote the removal of social barriers. Indeed transfer systems, the most common means of meeting ADAAG guidelines, not only do little to improve physical access but may also form social barriers between children. Research shows that fewer than 10 percent of children with disabilities are able to use a typical transfer system (Owens 2000, p. E6). Those who are able to transfer, "often must crawl, making [playgrounds] places of humiliation and, thus, places to avoid" (Louisiana Assistive Technology Access Network 2000). Additionally, providing greater physical access within a play environment, without creating similar social access, may serve to emphasize a child's disability by placing the child in a situation where their inability to participate is significantly more noticeable.

While physical access is necessary and important, it does little to promote the inclusion of the majority of children with disabilities. How then, do you promote greater social access, or inclusion in a play environment? The key to a quality, socially accessible play experience for both disabled and able-bodied children is a diversity of types of play opportunities (Oestreicher 1990, p. 53), which stimulates a wider range of developmentally appropriate play activity (Frost and Klein 1979).

Types of Play Activities

Types of play activities should not be confused with specific types of equipment (i.e. slides versus swings). Play activity types may be best defined as the stimulus of a specific facet of the child. Each type of play activity meets a number of distinct developmental needs, and may be provided by playground equipment, setting, sounds, fragrances, textures, and other elements that stimulate the child. The greater the number of activity types which a playground setting or piece of equipment supports, the greater the play value or ability of the same to meet the child's developmental needs. When a playground presents a diversity of types of play activities, a greater diversity of children, both with and without disabilities, are better able to find play opportunities appropriate to their abilities.

Play activities may be defined according to the following types: Dizziness, Passive Resting, Exploratory, Dramatic, Interactive, Practice, and Cues.

Dizziness Activities (Physical Stimulus). For kids, anything that moves is more exciting than anything that does not. Dizziness activity engages the large muscles and allows the child to experience sensations of movement that may not be experienced during normal life routines. Traditional playgrounds are predominately composed of dizziness activities. They include climbing, swinging, bouncing, balancing, jumping, crawling, hopping, skipping, sliding, rolling, pushing, pulling, hand-over-hand routines, hanging by the arms, spinning (Figure 1) (Moore, Goltsman, and Iacofano 1992, p. 69). Dizziness may also be experienced by activity that creates the illusion of movement: being in a high place, on a slope, in a tunnel, or in a maze (Senda 1992, p. 137). These latter activities are especially important for children

with physical disabilities, who may be unable to accomplish the large muscle activities associated with dizziness.

Passive Resting (Meditative Stimulus). In a well-balanced play environment, dizziness should be closely associated with an equal opportunity for passive resting (Senda 1992, p. 21). Passive resting may be best defined as a nonactivity, or the absence of activity (Figure 2), during which a child can experience the glow of the previous stimulus, process the acquired information, and rest. Passive resting is not associated with a particular type of equipment, but rather the characteristics of the setting.

While passive resting should correspond to other activities, it also should be sufficiently removed to allow the child to escape the adjacent activities. At the same time, when areas for passive resting are too far removed from the activity, the time needed to physically transition to an area may be greater than that required for resting. In such cases, the experience partially occurs in transit, and the destination becomes a non-place, effectually the same as not having provided for passive resting areas. This situation, as well as the lack of private spaces for passive resting, has been shown to correlate with occurrences of aimless wandering and aggressive behavior (Phyfe-Perkins 1982).

Passive resting is particularly important for children with disabilities, who may have limited stamina and simply require more rest. Additionally, as the opportunity to experience dizziness in a free play setting is not often available to the child with a disability, the child may require more time internalizing the effects of the stimulus. Further, children with social-emotional disabilities, particularly autism, require spaces where they may withdraw themselves from the social experience of the playground to internalize the experience.

Exploratory Activities (Cognitive Stimulus). Exploratory activities stimulate children's cognitive skills by fostering new insight not available during normal life routines, causing them to act and think in ways beyond their normal performance zone (Bodrova and Leong 1996). Quite simply, exploratory activities offer surprises and a sense of discovery (Figure 3).

A variety of methods may be used to stimulate exploratory activities during a child's play. On a traditional playground, games and equipment activity panels are most common. While these methods are successful to varying degrees, depending on the quality of the equipment, they quickly become repetitive and no longer offer a sense of discovery or surprise. While children show a strong preference toward this type of equipment, return play is very low due to its static nature.

Children show a similar preference for playing in natural landscapes (White 1997, p. 3), which are not static. Moreover, the less manicured and more "wild" the setting appears, the more inclined children are to play in it, the variability of the setting being directly proportional to the possibility of discovery (Nicholson 1974 p. 223).

Children with disabilities benefit more from exploratory play in natural environments as well, which is the antithesis of the common method of creating an artificially engineered solution for meeting the needs of the disabled child. Simply put, while the engineered solution typically solves a particular problem, natural environments allow for investigation and discovery by children with a variety of different learning styles (Moore and Hong 1997). "Research shows, too, that children who have behavioral or learning difficulties often perform much better in an outdoor nature setting" (White 1997, p. 3).

Dramatic Activities (Imaginative Stimulus). Dramatic play activities are closely associated with exploratory activities, the essential difference being that while exploratory play is focused on internalizing stimulus, dramatic play is focused on externalizing the surrounding world. In essence, dramatic activities may be described as those where the child assumes a different role than that of their normal life routine, and/or outwardly reinterprets previous experience (Figure 4). Dramatic activities may be instigated by elements in the play setting, but the activity itself is child generated. As such dramatic play is the best developmentally for all children (Hart 1993, p. 2).

On typical playgrounds, the majority of dramatic activities occur in "the 'miscellaneous area' (space between all major pieces of playground equipment where children played without the use of any equipment)… for both [disabled and able-bodied] children" (Rogers-Warren et al. 1980, p. 6). However, dramatic activities are better facilitated by providing appropriate and diverse settings as "the degree of inventiveness and creativity… are directly proportional to the number and kind of variables in it" (Nicholson 1974, p. 223). Settings, which best support dramatic activities, are characterized by moveable and action-oriented equipment rather than fixed apparatus (Hartle and Johnson 1993, p. 24). Referred to as the “theory of loose parts,” settings that may be manipulated according to the needs of the child are beneficial for children in all developmental stages (Hartle and Johnson 1993, p. 25). These loose parts may be used as tools, props, or creative materials, focused around themed construction at a child's scale. Generally, dramatic activities are promoted by highly encapsulated settings (Hartle and Johnson 1993, p. 26). Care must be taken, however, to maintain the physical accessibility of such spaces for children with moderate to severe physical

disabilities.

Interactive Activities (Social/Emotional Stimulus). Special attention should be paid to fostering interactive activities when creating play spaces for children with disabilities. Interactive activities are those which favor interchange between two or more children (Figure 5). Of all the types of activities, opportunities for interactive activities are the least common for children with disabilities. Consequently, "[children with disabilities], especially, can profit from the opportunity to observe, interact with, and imitate their normal and perhaps more skilled peers" (Rogers-Warren et al. 1980, p. 3). "[Children with disabilities] typically showed delays in social interaction skills commensurate with their general developmental delays. [Studies] suggest that altering either the settings or consequences for social interaction will result in increased interactions. Activities that bring the children into physical proximity and play equipment that require more than one child can enhance social interactions" (Rogers-Warren et al. 1980, p. i.).

While the above sounds simple enough, providing opportunities for interactive activities that encourage able-bodied children to interact with children with disabilities, and vice versa, is often difficult. Generally, "[children with disabilities] most frequently select [disabled] playmates, and [able-bodied] children usually select [able-bodied] playmates" (Rogers-Warren et al. 1980, p. i).

Forcing children into close proximity with other children may increase interaction, but it also increases corresponding negative interactions. Because of the increase in negative interactions, densities of less than 20 square feet of space per child are not recommended (Hartup and Laursen 1993, p. 63). Likewise, decreasing the amount of equipment or other

activities available on a playground may increase interactive activities while simultaneously increasing the occurrences of aggression (Smith and Connolly 1980), both of which are likely to have a greater impact on the child with disabilities. Consequently, interaction should never be forced, either by limiting options for play or space for play. Children should have opportunities for solitary play without the interaction of peers (Hartle and Johnson 1993, p. 28). However, should a child wish to take part in an interactive activity, the opportunity must be available. If a child with a disability should wish to participate, not only should the opportunity be available, but also the child's level of involvement and participation should not be limited by their disability. For example, child-scaled tables encourage interactive activities. Should a child find it difficult to fully access the table without drawing unnecessary attention to his/her disability, the table does not promote interaction with the child with disabilities. Similarly, a game event, such as tic-tac-toe, may be the focus of an interactive activity. However, should the equipment not have a tactile element, the event will not offer an interactive experience to the child with a visual impairment. Interactive activities should downplay differing abilities, and highlight the similarities between children. Quality interactive activities involve the whole child: gross motor, fine motor, senses, emotion, intellect, and individual growth (Haas 1996). A diversity of play opportunities that meet these criteria is key to both the quality of an interactive activity and the inclusion of all children (Hartle and Johnson 1993, p. 26).

Practice Activities (Developmental Stimulus). Practice activities facilitate the development of skills that will be necessary during normal life routines (Figure 6). Arguably, every type of play activity develops these skills. However, this type of activity is mainly

concerned with physical development, such as developing balance, strengthening large muscles, increasing fine motor control. The reason for further defining and including this type of activity is the enormous therapeutic value of such for children with disabilities, as well as the overall developmental necessity for children in general. That having been said, practice activities usually take place in conjunction with, and are accomplished through, another type of activity, such as dizziness. And rightfully so, as the play value of practice activities is relatively low when compared with other activity types.

Regrettably, many playgrounds developed with disabled children in mind mistake practice activities for dizziness activities. It should be remembered that while practice activities develop skills necessary for normal life, dizziness activities provide experiences that are not common in normal life routines. While the therapeutic value of such play spaces is high, the play value is low. Additionally, practice activities are likely to generate competition between children (Senda 1992, p. 12). This competition is likely to segregate children according to level of physical skill, negatively influencing the self-image and integration of children with disabilities (Barbour 1999, p. 95). As a result, many playgrounds that are developed for children with disabilities do the disabled child a disservice. While practice activities, which provide graduated challenges appropriate to differing developmental abilities, focus on the shared skills between children and are appropriate, practice activities should not be the principle emphasis of free play settings.

Cues (Sensory Stimulus). Cues are not an activity per se, but rather sensory stimulation. Similar to practice activities, cues have little play value by themselves, but do increase the play value and experience of associated activities (Figure 7). Cues become

increasingly important for the child with a sensory-related disability, such as visual or hearing impairments and low mobility. Further, for children with visual impairments, sensory-rich environments are a necessity (Frost and Klein 1979, pp. 225-226).

Children with cognitive disabilities may also be assisted by using cues to create an understandable environment. The use and absence of sights, sounds, colors, textures, and/or smells can highlight important elements and areas, distinguish areas for passive resting, provide enhanced accessibility, and generally improve the play experience. However, care must be taken not to overly clutter the sensory environment. Such sensory overloads may make understanding the environment difficult and cause anxiety. Particularly, "noisy, reverberant environments cause stress in adults and even more stress in children" (White 1997, p. 5). Anyone familiar with the indoor playgrounds associated with fast-food restaurants should be familiar with these conditions.

Summary

Settings that support the above activities provide opportunities for children with disabilities to express and expand on their abilities in a free play environment. These activities are Dizziness, Passive Resting, Exploratory, Dramatic, Interactive, Practice, and Cues. Settings that are designed to support multiple activities, are flexible, adaptable, linked to complementary activities, and offer graduated challenges, are more valuable than those which do not, and provide greater developmentally appropriate play opportunities for all children. Without thoughtful attention to such, provisions for greater physical access are not only meaningless but may be socially detrimental. To provide developmentally appropriate free play opportunities for children of all abilities, play settings should support the greatest possible

diversity of play activities, of the highest possible quality, and be accessible through the least limiting of means. "While not all outdoor play environments can provide for all of the above opportunities, adequate planning based on theory and research that considers those who will use the facility can provide for all forms of developmentally appropriate cognitive and social play. It is not always the amount of money that makes the best play environments, but the quality of time and energy in planning for play opportunities of children of all ages" (Hartle and Johnson, 1993, p. 35).

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NOTE

1. This paper summarizes some findings of the research conducted by Keith Christensen for his master's thesis, Inclusive Outdoor Play Space Development for Children with Special Needs.

# FIGURE CAPTIONS

Figure 1. Dizziness activities are typical of public playgrounds. Photograph by Keith Christensen.

Figure 2. Passive resting may occur in a number of settings, as needed. Photograph by Keith Christensen.

Figure 3. Exploratory activities provide a sense of discovery (Jonathon's Dream, in West Hartford, CT). Photograph by Keith Christensen.

Figure 4. A dramatic activity at Hadley's Park in Potomac, MD. Photograph by Keith Christensen.

Figure 5. This swing requires more than one individual for the full effect. Photograph by Keith Christensen.

Figure 6. This structure is designed for children in wheelchairs to practice maneuvering. Photograph by Keith Christensen.

Figure 7. Cues help children, and adults, determine the activities appropriate to a space. Photograph by Keith Christensen.

Figure 1.

Figure 2.

Figure 3.

Figure 4.

Figure 5.

Figure 6.


Figure 7.