

Implications

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Children with Disabilities: Opportunities in the Home Environment

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Introduction

Over the last ten years, a significant body of research has emerged on the need for, and development of, self-determination for children with disabilities. For young children, some of the skills and behaviors that are the building blocks of self-determination include expressing preferences, participating in decision-making, displaying engagement and persistence, and exercising increased appropriate control over the environment. Whether young children are typically developing or not, they need to engage with friends and family, make choices and decisions, control and regulate their surroundings, and develop self-efficacy. How can and do families, housing professionals, educators, and designers promote these opportunities?

Previous research has focused mostly on school-aged children, teachers, and classroom environments and less on young children in their family and home. However, new investigations examine the

foundation for self-determination early in life and in early childhood environments. This article is about young children (i.e., ages birth to eight years) with disabilities and opportunities for self-determination in their home environments and strategies that families can and do employ to promote those opportunities.

Home, Family, and Child Characteristics as Design Context

Our research suggests that improving opportunities for youngsters to become self-determining in the designed environment involves strategies developed in children's families and their home environments. Family values and beliefs are the contextual underpinnings for all young children. Parenting styles, norms regarding the use of space, lack of knowledge about barriers contained in the home, and discomfort with noisy, active, or messy activities may result in restricted home environments for children. Families' fears for their children's safety or lack of knowledge and/or resources also shape the context in which young children with disabilities develop.

It is necessary, of course, to recognize a child's characteristics, such as age and the nature and severity of the disability, to maximize opportunities for self-determination. Inside and outside the home, the design and arrangement

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Related Research Summaries



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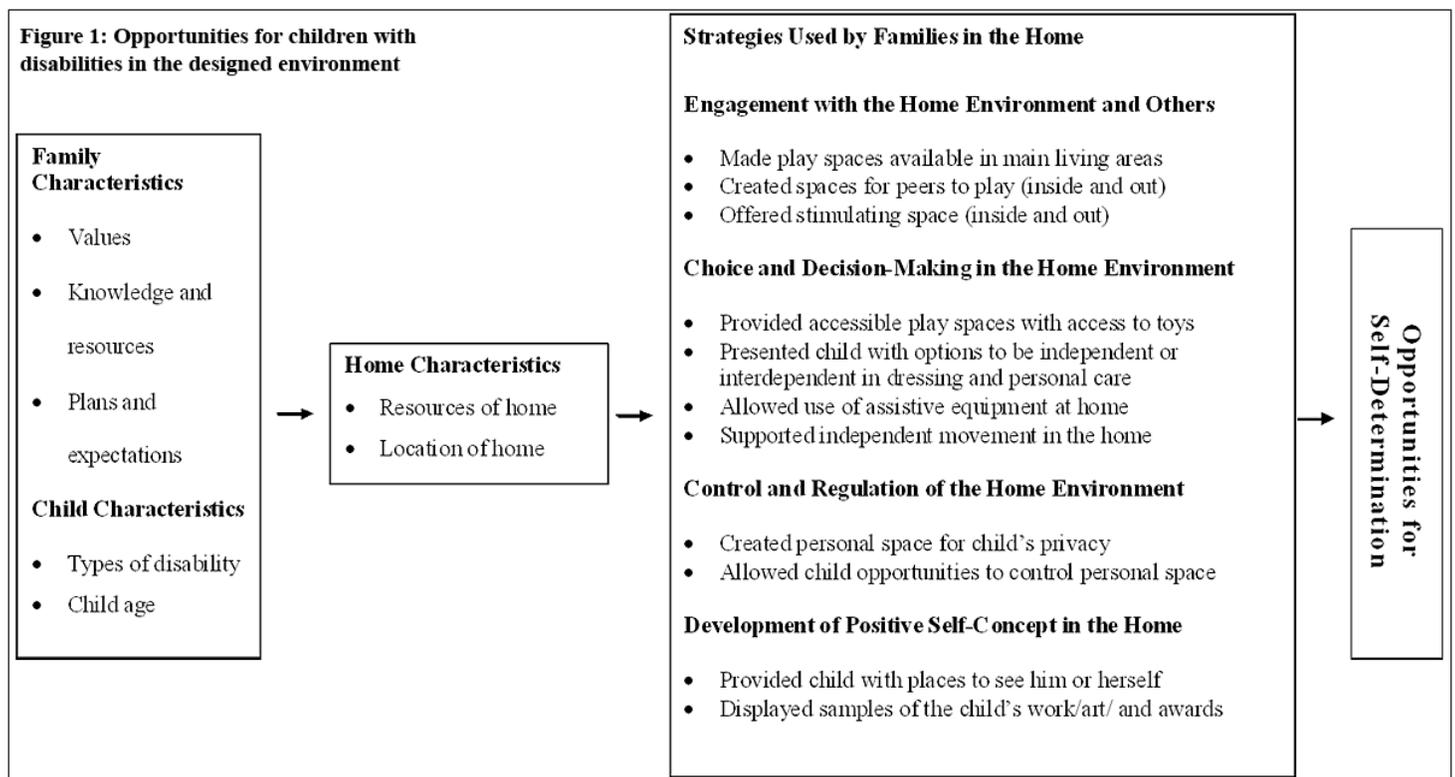
of space and furniture and the availability of purposively-selected toys, books, and games shape children’s opportunities. These elements of design can constrain or facilitate their life chances.

Translating Self-Determination Opportunities into Design Strategies

As suggested earlier, the strategies used by families will vary according to family, child, and home characteristics. To identify these characteristics, we interviewed families about their child’s use of the home, modifications to the home, and their views on self-determination for young children with disabilities. Detailed observations of the children’s home environments were undertaken, including looking at the arrangement of space and furnishings, the availability of toys and books, and the adaptive/ assistive technologies in use. We identified and organized strategies around four broad categories of activities that provide opportunities to develop self-determination skills: (a) engagement with the

home and others, (b) choice and decision-making in the home, (c) control and regulation of the home environment, and (d) development of a positive self-concept in the home (see Figure 1). These categories are not mutually exclusive but give us a way to convey the meaning and importance of the choices families make and the design solutions they employ.

a) Engagement: Engagement refers to a child’s sustained attention to an activity or an interaction in a positive, age-appropriate way and is considered one of the most important elements of self-determination. What kinds of floor plans and spatial arrangements best enhance engagement with others and sustain independent activity? Play spaces easily available in the main living and family rooms of the home, including low shelves for easy access and toy bins within reach are beneficial. Engagement with peers is enhanced when playing outside if a child with limited mobility uses his/her walker or wheelchair, or can simply sit or lay on the





Low cabinets arranged with children's toys allow children to play independently yet still be engaged with activity in the kitchen or family room.

surface to play with cars, trucks, sidewalk chalk, etc. In these instances hard surfaces may work better than grassy areas. Motorized cars are 'kid magnets' and result in lots of happy hours playing with neighborhood friends.

b) Choice and Decision-making: Think of all the ways that the physical environment allows children to practice making decisions and choices. Something as simple as turning on the light, getting into and out of bed, and selecting clothes for the day give children opportunities to develop skills necessary to become self-determining. Modifications that allow children to reach their clothing by providing a lowered clothing rod or placing baskets on the floor work well.



Some surfaces and outside toys are 'kid magnets.'

Promote independence by providing step stools to help access kitchen and bathroom sinks or make modifications to the toilet and tub for easier access. Make snack foods available by placing items in lower cabinets or in the door or bottom shelves of the refrigerator. Remove rugs or doors and arrange furniture for easy movement through the home to give children more chances to move unimpeded inside and outside the home. Obviously, safety is a key issue for families with young children. Parents work to identify the real hazards in the home and at the same time encourage autonomy.

c) Control and Regulation: Children typically take control and attempt to regulate the environment. Exploring kitchen cabinets and going up and down stairs are everyday control and regulation experiences. For children with physical and cognitive disabilities; however, parents must play a more active, purposeful role in planning opportunities for them to control and regulate the environment. Play spaces in protected alcoves or behind a couch provide a measure of control over a defined territory. Children who have access to and are permitted to use assistive devices can move more freely through the home than children whose devices are restricted. Help children shut out unwanted interaction with the use of head phones, tents, and



'Territory' behind the couch has child-controlled access.

personalized cubbies. Regulating lighting, sound, and social interaction gives children a degree of control over their immediate environment. Children who can reach toys, light switches, snacks, or their beds achieve some control in regulating the near environment. Simply the ability to choose to spend time looking out a window and being able to move to that location unimpeded and independently gives children a measure of control.

For parents of children with disabilities, enabling control over personal care and grooming is difficult to achieve. Legitimate fears exist; the bathroom and kitchen are among the most dangerous places for children with or without disabilities. Older children sometimes achieve a degree of privacy when the bathroom is visually/auditorially accessible and near the kitchen so that parents can monitor bathroom activities while working in the kitchen.

d) Positive Self-concept: Positive engagement with other children, making choices and decisions independently and regulating one's environment are the steps to self-efficacy. As children become more self-reliant, confidence is boosted. Some parents are very thoughtful about providing opportunities for their child to see him/herself and to see their work. Placing full-length mirrors, bulletin boards,



Children seem to love a full length mirror to see themselves.

family photos, and children's artwork sends an important message to children about their value and the value of their work. To make the biggest impact these items need to be at a child's eye level. One mother of a child with limited mobility put a full-length mirror horizontally over her bed so that the child could see her whole body.

Privacy is also important in the development of self-concept because it involves setting up and controlling boundaries between the self and others. Even small spaces devoted to getting away from the home's activity that can be personalized by the child provide meaningful opportunities for gaining independence, autonomy, and a positive self-concept.

Conclusions

Self-determination is an important concept in current research in early childhood development and has important implications for designers working with families whose children have disabilities. Designers must be cognizant of families' values and beliefs as well as the unique abilities and challenges faced by the children themselves. Whether asked to work with existing housing or new construction, designs must be carefully crafted to promote opportunities for self-determination. Though sometimes seen as simplistic or unworthy of attention in early childhood development literature, the physical environment speaks volumes about what we hold dear. The choices of color, lighting, textiles, furnishings, and spatial configurations in well-designed homes are both aesthetic and pragmatic, communicating the importance and worth of residents. As we know, designers must carefully shape spaces because the designed environment shapes human activity. This is especially true in the home environments of children with disabilities.

References

- Brotherson, M., Cook, C., & Parette, H. (1996). A home-centered approach to assistive technology provision for young children with disabilities. *Focus on Autism and Developmental Disabilities, 11*(2), 86-95.
- Brotherson, M., Cook, C., & Weigel-Garrey, C. (2000, December). *Self-determination in the home environments for young children with disabilities*. Paper presented at the Division for Early Childhood Conference, Albuquerque, New Mexico.
- Brotherson, M., Cook, C., Erwin, E., & Weigel, C. (2007). *Understanding self-determination and families of young children with disabilities in home environments*. Manuscript submitted for publication.
- Brown, F., & Cohen, S. (1996). Self-determination and young children. *Journal for the Association for Persons with Severe Handicaps, 21*, 22-30.
- Cook, C., Brotherson, M., Weigel-Garrey, C., & Mize, I. (1996). Homes to support the self-determination of children. In D. Sands & M. Wehmeyer (Eds.), *Self determination across the lifespan: Independence and choice for people with disabilities* (pp. 91-110). Baltimore, MD: Brookes.
- Erwin, E., & Brown, F. (2003). From theory to practice: A contextual framework for understanding self-determination in early childhood environments. *Infants and Young Children, 16*(1), 77-87.
- Lee, S., Palmer, S., Turnbull, A., & Wehmeyer, M. (2006). A model for parent-teacher collaboration to promote self-determination in young children with disabilities. *Teaching Exceptional Children, 38*(3), 36-41.
- Weigel-Garrey, C., Cook, C., & Brotherson, M. (1998). Children and privacy: Choice, control and access in home environments. *Journal of Family Issues, 19*(1), 43-63.

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“Playground Hazards Increase the Risk of Injury”
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“Environmental Interventions for Students with Disabilities” —*Journal of Learning Disabilities*

“Including Children’s Perspectives on Design”
—*Children, Youth and Environment*

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“Neighborhood Environment Affects Children’s Independence” —*Journal of Environmental Psychology*

“Effects of Children’s Hospitals on Families and Staff”
—*Journal of Developmental and Behavioral Pediatrics*

“Using Technology to Accommodate for Disabilities”
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“Children’s Neighborhood Wayfinding Ability”
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