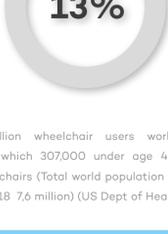


INCLUSIVE PLAY

How children with developmental disabilities play



1 million wheelchair users worldwide from which 307,000 under age 44 use wheelchairs (Total world population March 2018 7.6 million) (US Dept of Health)



About 15% of children aged 3-17 years have one or more developmental disabilities (Center for disease control and prevention)



About 15% of the world's population lives with some form of disability, of whom 2-4% experience significant difficulties in functioning. (World Health Organisation)

RESEARCH

Having a disability places you in the world's largest minority group. Over a billion people live with some form of disability. Between 110-190 million adults have very significant difficulties in functioning. (World Health Organization, 2011)

Recent estimates in the United States show that about 15% of children aged 3 through 17 years have a one or more developmental disabilities.

Developmental disabilities amongst children 3-17 according to the centers for disease control and prevention, 2013:

- o ADHD,
- o autism spectrum disorder,
- o cerebral palsy,
- o hearing loss,
- o intellectual disability,
- o learning disability,
- o vision impairment,
- o and other developmental delays.

HOW CHILDREN WITH DEVELOPMENTAL DISABILITIES PLAY

Children with developmental disabilities can show the same strong mastery motivation in play as typically developing children do, as long as the play is commensurate with their levels of ability (Smidt and Cress, 2007). Research of Glenn et al (2001) points out that some parents rate their disabled children very low, while these children showed the same strong motivation as typically developing children do. Not surprisingly, these parents were more directive in their play interactions than parents of typically developing infants, because they believed their children lacked an internal desire to do this.

Smidt and Cress (2007) point out that over-directing children's play may reduce their desire to play and acquire skills independently. This while engagement in play is a critical factor related to a child's development (Lane & Bundy, 2012; Vandenberg & Kielhofner, 1982). Play provides children with opportunities to develop competence and experience mastery, which motivates them to seek new challenges and develop more advanced skills (Andersen, Kielhofner, & Lai, 2005; Mistrett, Lane, & Goetz, 2000). Intrinsic motivation is thought to be associated with a child's overall well-being and is a key hallmark of play in typically developing children (Andersen et al., 2005).

Several studies suggest that children with developmental disabilities often struggle with decreased motivation to interact with objects in the context of play (Andersen et al., 2005; Mastrangelo, 2009; Mistrett et al., 2000; Reynolds, Bendixen, Lawrence, & Lane, 2011). So a challenge is to find the right balance between structured play and free play for children with developmental disabilities, so that they are intrinsically motivated in their play.

HOW STRUCTURED PLAY HELPS CHILDREN IN DEVELOPING SKILLS

Structured play helps children with developmental problems in developing more advanced communication skills. Structured play is not the same as directing the child's play. Cress et al (2007) investigated the differences in engagement patterns of young children with developmental disabilities between structured and free play. They found that these children demonstrated significantly more complex engagement behaviors in structured play than in free play, including coordinated joint .

An example of structured play was that the examiner paused after a child preferred a certain toy, and continued play with touch feedback if the child repeated its preference signal. This way the examiner reinforced the child's attention. Other studies also concluded that children with developmental disabilities took a more active role and initiated more communicative behaviors during structured play with experimenters than unstructured play (Iacono et al, 1996; Salmon et al, 1998).

Children with developmental disabilities often have difficulty with joint attention that can affect more advanced communication skills. (Arens et al, 2005). The quality of joint attention with adult partners has been found to influence the later communicative development in children with disabilities (Legerstee & Weintraub, 1997; Mundy & Willoughby, 1996). Joint attention allows a child to realize that meanings can be exchanged between people and suggests an understanding that social partners can serve an instrumental function (Arens et al, 2005).



INTRINSIC MOTIVATION IS NEEDED TO OBTAIN FEELINGS OF MASTERY FOR A CHILD

"Play brings feelings of mastery when a child confronts conflict in these hierarchical stages."

Mary Reilly (1974) - prominent leader in the field of occupational therapy

3 PHASES OF PLAY DEVELOPMENT

A) EXPLORATION

This phase arises from an inherent interest in the environment (Reilly, 1974). Intrinsic motivation guides a child through the phase of exploration and sensory experiences enhance this motivation (Reilly, 1974). The sensory aspects of the environment often provide the foundation for play and may include features of the physical and social environment. Some examples of these aspects include lighting, available objects, and the presence of others (i.e., people or animals).

B) COMPETENCY

As children move beyond exploring their environment, they are innately drawn to seek challenges, meet the demands of a situation, and produce effects in order to receive feedback (Reilly, 1974). This second phase, termed competency, may be observed when a child develops a preference for a certain play object and seeks to produce effects with the play object purposefully as well as repeatedly. Children who are operating in the phase of competency seek control of their environment and are active in pursuing their own agendas (Reilly, 1974).

C) ACHIEVEMENT

When children begin to recognize the consequences of their behavior based on successes or failures, they move on to the phase of achievement. Achievement in play requires children to take risks and reflect on their skills (Reilly, 1974). A child in the achievement phase of play will challenge his or her own abilities and the amount of effort needed to bring about a desired outcome.

Coordinated joint involves 3-point gaze shifts. A 3-point gaze shift means that there is a three point attention shift between object-person-object and vice versa, for example: the child looks at the adult, then the object, and back at the adult.

The three phases of play development that Reilly identified have become the cornerstone of one of the most widely used occupational therapy models to explain human engagement in daily activities, which is the Model of Human Occupation (MOHO) (Lee, Taylor, Kielhofner, & Fisher,

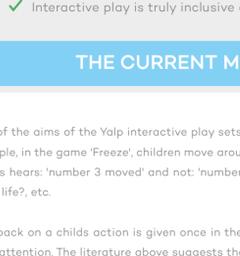
HOW AND WHEN DO CHILDREN WITH DEVELOPMENTAL DISABILITIES SHOW INTRINSIC MOTIVATION?

- Askins et al (2013) investigated how and when children with developmental disabilities spontaneously demonstrated play behaviors indicative of volition, or intrinsic motivation.
- Most of the children in this study were able to spontaneously show preferences, try to produce effects, show curiosity, and express mastery pleasure. Overall, the children demonstrated these behaviors in their natural environments, ones with which they were already familiar.
- The children in this study often required additional support to try new things, seek challenges, remain task directed, and pursue activities to completion, despite familiarity with the social environment, and even when many resources were made available to them (e.g., toys, pets, and siblings).
- Further, the children tended to seek out play experiences that afforded them the opportunity to exercise control over their social environments and create a sense of predictability. An example of having control during play was when a participating boy played with his dog: he could control play and he is able to feel like he has dominance over it.
- The children's hesitancy to try new things and seek challenges supports the notion that children with disabilities tend to have limited play repertoires and require more support from others during play (Missiuna & Pollock, 1991; Mistrett et al., 2000). However, the children's sense of curiosity, their desire to produce effects, and their desire to control their social environments seems to suggest that children with disabilities could have more robust play repertoires given the appropriate supports.

HOW YALP MOTIVATES CHILDREN WITH DEVELOPMENTAL PROBLEMS TO SEEK NEW CHALLENGES

Inclusion means everyone regardless of background, age, gender, and ability should have the same opportunities in life to explore and achieve. Though we have seen that the group with special needs or disabilities is most neglected in playground design, most inclusive play solutions that are being offered are often stigmatizing or not interesting enough.

Several studies suggest that children with developmental disabilities often struggle with decreased motivation to interact with objects in the context of play. A challenge is to find the right balance between structured play and free play for children with developmental disabilities, so that they are intrinsically motivated in their play and have an increasing motor and cognitive development.



Disability is a socially created problem and it is up to all of us to make the environmental changes necessary to allow for the full participation of people with disabilities in all areas of social life. We strive to create completely unique sports- and playgrounds that punctuate, not define a play space, embracing the true meaning of inclusion. The Yalp interactive products have no barriers, are not stigmatizing and will excite everyone.

With over 10 years of experience in product and play area design we are happy to offer practical advice, help identify changes to existing parks, or offer ideas for new designs to make them more engaging and accessible. The result is a range of educational, fun outdoor play products and over 250 play areas worldwide that have been specially designed to excite and intrigue children of all kinds.

WHY INTERACTIVE PLAY?

- ✓ Yalp interactive equipment is completely accessible for wheelchairs, without being stigmatizing
- ✓ Interactive play helps children with developmental problems in developing more advanced communication skills
- ✓ Interactive play removes barriers and will enable children with disabilities to participate in education and social life, reducing their isolation and dependency
- ✓ Interactive play is truly inclusive and intergenerational and allows for great family fun

THE CURRENT MISSION OF THE INTERACTIVE PLAY SETS

One of the aims of the Yalp interactive play sets is to enhance free play of children, not direct that much what children have to do. For example, in the game 'Freeze', children move around when the music plays and when the music stops, they have to stand still. The child that moves hears: 'number 3 moved' and not: 'number 3 is off'. The children themselves can decide what to do: is the child off?, does it get an extra life?, etc.

Feedback on a child's action is given once in the games, to keep up the pace. For typically developing children, this pace is good to keep their attention. The literature above suggests that children with developmental disabilities demonstrate significantly more engagement in structured play than in free play (Cress et al, 2007; Iacono et al, 1996; Salmon et al, 1998). This intrinsic motivation is a condition for any child to explore their environment (phase 1 of Reilly), seek challenges, meet the demands of a situation, and produce effects in order to receive feedback (phase 2 of Reilly) and lastly, to take risks and reflect on their skills (phase 3 of Reilly).

Play brings feelings of mastery when a child confronts and takes an active role in these hierarchical stages. So, the interaction is to set. And, if the play is not too free and the child's attention needs more reinforcement by the play sets. To answer this question, the quantitative popularity of current games is investigated, interviews with pedagogical employees are conducted and observations are done at the locations mentioned below. Important for the further development of children is to find the right balance between free and structured play for children with developmental disabilities, while not overdirecting play, which reduces their desire to play (Smidt and Cress, 2007).

RESEARCH LOCATIONS

REVALIDATION CENTRE "ROESSINGH" IN ENSCHEDE - THE NETHERLANDS

Rehabilitation centre Roessingh is specialized in rehabilitation expert treatment and care, for both adults and children. They have treatment programs for various diagnostic groups, from light to heavy, visible and invisible. The largest group of clients have the diagnosis CVA (stroke). Particular are the treatments for pain, high paraplegia and clinical rehabilitation for children.

Core values: Innovative - thoughtful - together.

SCHOOL FOR CHILDREN WITH LEARNING AND DEVELOPMENTAL PROBLEMS "DE BEYAERT" IN HENGELO - THE NETHERLANDS

Sg. Beyaert is a school for children which cannot stay on a regular primary school, because of learning and developmental problems. They teach children from 4 to 12 years (Dutch: group 1 to 8). The school uses the same methods as a regular primary school, but in smaller groups and in more time. All teacher obtained a Specialist Teacher diploma after their teacher education. Not only learning is key, there is also much focus on wellbeing.

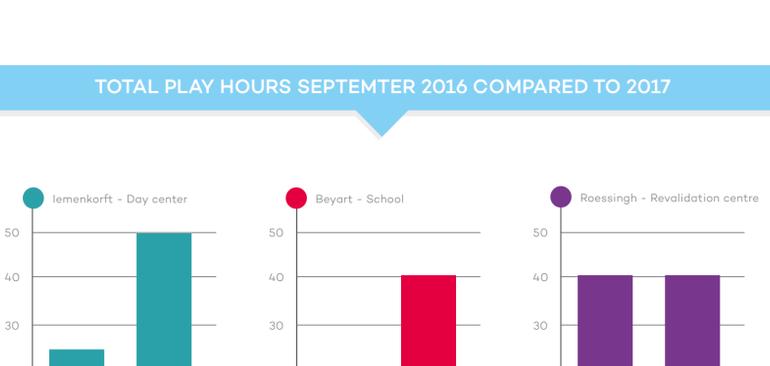
Core values: Pupils can learn from their own positive strength - Not only attention is given to knowledge of language, math and reading, but especially to the socio-emotional development.

CENTRE FOR CHILDREN WITH A DEVELOPMENTAL DELAY, LEARNING AND/ OR MULTIPLE DISABILITIES "DE IEMENKORF" - THE NETHERLANDS

The Iemenkorf is a day center (KDO) for children with a developmental delay and for children with learning and / or multiple disabilities of 2 to 16 years. The Iemenkorf is part of the Twente Zorgcentra (Health centres), which has 1900 clients, 2400 employees and 600 volunteers. The Iemenkorf has different groups, arranging from young to old, difficult to hear to multiple disabled children and mentally restricted to severely mentally disabled children.

Core values: Closeby - simplicity - professional - without taking over the control.

PLAYING HOURS YALP SONA



TOTAL PLAY HOURS SEPTEMBER 2016 COMPARED TO 2017



REFERENCES

- de Iemenkorf
- Stichting BIO
- Onderwijscentrum Het Roessingh

"The Yalp Sona is of great success with the children at our day center and due to the different games and music types suitable for all. The play arch invites everyone to be active at their own level. The children truly love to dance under the arch with the other children and supervisors."

"The play arch is accessible to everyone. The playing bow does not distinguish between players, and children with and without disability can play together. The Sona games offer structure, which is often required by our target group. In addition, there is enough freedom in the games, to play with different levels fun together."

"The Sona play arch is a real success! One of our pupils usually shows no emotion at all, but when she plays underneath the Sona, she immediately feels better and starts smiling! She moves and sways. It is a side of her that none of us had ever seen before... amazing, isn't it?"

Maike Wieskamp-Sak - Iemenkorf day center Kimberly Pastoors - BIO foundation Christian Bruggeman - OCR Roessingh

The Netherlands The Netherlands The Netherlands