



LOG STRUCTURES MATTER

**They are More than Purely
a Place for Children to Play**

JAIME BLACKLOCK & BEVERLIE DIETZE

Educators often think of Friedrich Froebel as the Father of Kindergarten, a man who emphasized the importance of children playing and learning in gardens. What is less known is that Froebel had a major influence on the formation of community playgrounds, with the first being established in Berlin in 1850. Froebel identified that children's overall development flourishes by playing in gardens, and so the first playgrounds in Germany were initially known as 'Sand Gardens'. Froebel believed that children were attracted to soft surfaces and the sensation of sand comforted them, resulting in their learning to play fairly and become play partners with peers. There have been many iterations of playgrounds over the centuries, including design features, types of materials used, construction standards and, most recently, the importance of universal design features.

While many municipalities, schools and local communities have invested in establishing playgrounds over the years, there appears to be a renewed interest in finding ways to support children in engaging in outdoor play due to the reduction in physical activity levels and the increase in mental health challenges that children are facing in today's world.

Playground structures offer children more than a place to climb and 'work off steam,' but all types of playgrounds are not necessarily equal. This article highlights some of the child-development attributes that children may acquire from playing on innovative log play structures.

CHILDREN AND PHYSICAL ACTIVITY

The results of the Canadian 2022 ParticipACTION Report Card on Physical Activity for Children and Youth indicate that children's levels of physical activity and play have deteriorated, resulting in a D grade across Canada. Meanwhile, Dr. Daphne Korczak (2020), a child and adolescent psychiatrist at Sick Children's Hospital in Toronto, found that 66 percent of preschool-aged children (2-5 years) have experienced a deterioration in at least one of the following mental health domains: depression, anxiety, irritability, attention span, hyperactivity and obsessions/compulsions. Children who have sedentary lifestyles during their early years are prone to this being a biological and behavioural imprinting for the rest of their lives (Tortella & Fumagalli, 2021).

Outdoor play that is rich in physical activity has many benefits to children that can reduce areas of concern for mental health and sedentary lifestyles. For example, physical activity is associated with improved: motor development, many aspects of cognitive development (including language), executive functioning, attention, pro-social behaviour, aggression and cardiometabolic health (Birken, Maguire, Vanderloo, 2022). Because physical activity influences many aspects of children's development, educators, families and community leaders have a responsibility to work collaboratively to create environments that support children in active play. Playgrounds where the "structures of different sizes and designs provide affordances and possibilities of action" (Tortella & Fumagalli, 2021, p. 470) can connect children to various aspects of movement and connect physical activity to place. Log play structures offer many values to a child's development that may not be visible

initially. Below, we outline how they contribute to children's development, including mental wellness and physical activity.

THE IMPORTANCE OF PLAYGROUNDS AND LOG PLAY STRUCTURES WITHIN THE SPACE

Emerging evidence in the built and health literature suggests that design features of outdoor space influence lifestyles and health outcomes (W.H.O., 2008, 2019). Research clearly shows that exposure to the outdoors and access to playgrounds with challenging structures help enhance various aspects of children's health and overall development (Carson, et al., 2017). Playgrounds are intended to be places where children engage in open-ended, unscripted play. Ideally, playgrounds and the play structures within those spaces become children's 'testing sites' of opportunity. The spaces encourage children to want to test their ideas. They combine previous learning with new ideas. The more they play on the play structures, the more they gain confidence to believe *I think I can*, which gradually moves toward the excitement of *look what I can do*.

Playground structures with the most benefit to children's development and wellness, challenge them to think, to move, to wonder and to experience and experiment with new body movements. These structures should require children to stretch, reach, move from side to side and use simple stepping motions with their feet. Then they may advance to more sophisticated foot movements, such as gripping the edges of the climber with their toes or using their feet to push off and propel themselves.

Design features strongly influence children's creativity, imagination, play, movement and overall development. Play structures built with logs tend to offer children more unscripted play opportunities and kinesthetics than traditional playground structures because of their unique design features. Below, we describe how and why log structures support an array of positive aspects of children's development, including the mental health domains outlined above.

1. **Calming Spaces.** Log structures, combined with their natural settings, provide children with a calming effect. The natural look and feel of wood can be particularly soothing to children who may be sensitive to overstimulation. The simplistic colour of the natural materials give children a sense of calmness, which helps them think, imagine new ideas and interact more with the attributes of the structure. Log structures offer children sensory stimulation, such as the feel of rough or smooth wood, and may inspire new body movements. Calmness and challenge contribute to a sense of satisfaction. In essence, the aesthetic appeal of the logs offers children a sense of calmness, thus reducing the stress and irritability that may lead to aggressive behaviours.
2. **Concentration Skills.** Often, the designs of log play structures capture children's attention and imagination and challenge them to focus and concentrate on details needed to accomplish their intended goal, advancing

the depth of their engagement. For example, as children climb on the rounded logs, they must determine what body movements are required, how to achieve them and how to coordinate all their body movements; ranging from simple to more complex movements as they try new ideas. Features such as bridges that have movement built into them encourage children to slow down and become familiar with the sensations they are experiencing.



3. **Physical Movement and Stress Reduction.** The use of logs to build play structures allows for innovative designs, such as uneven surfaces that challenge children as they maneuver their bodies. For example, in the photo above, the asymmetrical placement of the logs influences the level and types of physical movement children need to execute and master their play ideas. The logs challenge the children to balance and coordinate their movements, strengthening their gross motor skills. Development such as this during the early years sets the foundation for later-life balancing skills. Climbing strengthens children's arm, shoulder and back muscles and improves cardiovascular health. These types of physical play burn up energy, thus reducing stress and anxiety, while contributing to an array of developmental domains.
4. **Socialization and a Sense of Belonging.** Depending on the intricacies of the design, children will often interact with other children as they climb, leading to co-investigation and cooperative play. Children develop plans of how to execute movements. They start by observing others, gradually trying aspects of the structure themselves. Once they are comfortable with one part of the structure, they move to the next section or challenge. Children might ask their peers questions such as, "How did you do that?" or "How did you get there?" Unscripted play structures, such as those constructed from logs, are drivers for boosting children's confidence, resilience and sense of self-worth. Learning from mistakes and developing relationships with playmates contribute to children becoming familiar with and regulating their emotions, developing emotional intelligence and showing empathy. Children use these skills when play situations become uncomfortable with others or the space. Playing with other children can reduce feelings of isolation, which is associated with anxiety and depression.

5. **Cognitive Development.** The more unique a play structure design is, the more cognitive skills children will tap into. The structure design influences the depth and breadth of thinking, creativity and problem-solving that children must employ to navigate space. For example, when children move their bodies to climb up or over, or move from one area to the next, they develop an understanding of spatial relationships and balance. Memory and attention skills are strengthened as they recall the layout of the structure and the sequence of body movements required to navigate the features successfully. The unique and unpredictable nature of log structures offers these opportunities in abundance. Playground equipment with minimal play options limits children's play and creativity in advancing play (Dietze & Kashin, 2019).

A significant part of children's outdoor play experiences includes learning how to assess hazards and manage risks. Children begin to develop these skills when they engage in challenges such as jumping and climbing. Log structures help them learn to test the conditions of the wood. For example, they figure out how to move their feet on wet versus dry wood and on rounded logs versus flat, linear surfaces. They learn how to adjust their maneuvering on the structure when their hands are in mittens and their bodies in snowsuits. They develop observational and testing skills to determine answers to their questions, such as whether the structure is too icy or how high is too high for them on that day. These skills are learned through their play and having the freedom to test their limits on the structure.



THE ROLE OF ADULTS

Some classify playing on more complex climbers, such as the ones built with logs, as risky fun play, whereas others use the terms adventurous or challenging play (Dietze & Kashin, 2023). As identified by Eager & Little (2011), when adults use and hear the word "risk" they associate it with negative thoughts and consequences. For this reason, Dietze & Kashin, (2019), use the terms adventurous and challenging, especially at a time when it is vital to increase children's outdoor play experiences. Educators benefit from having discussions as a group to determine the terminology they use, particularly with families.

Many adults are concerned about potential accidents that can occur when children play on the climbing apparatus. Much research indicates that children who spend significant time on challenging playground structures build the capacity to assess their own abilities and strategies for engaging with the equipment to avoid injuries (Dietze & Kashin, 2019). The frequency of accidents is far less with children who have ongoing exposure to equipment than with new users (Tortella & Fumagalli, 2021).

Children fundamentally require freedom to explore. They

need adults who will provide them with opportunities to climb, stretch and embrace challenges, to make mistakes and try again. These opportunities can best be achieved by adults ensuring that they do not hover around the children or use language such as 'be careful or you're too high ... you are going to fall'. Adults who take on the role of a 'hummingbird' (staying on the periphery and only

appearing when children ask for help or observations) would only suggest to children that a potential hazard is present, contributing to children's overall development.

CONCLUSION

The experience that children get from playing on log structures is crucial for their development. These types of structures intrigue children because of their design features. They provide opportunities for children to explore and develop many aspects of their connections to nature, as well as their physical, social, cognitive and emotional skills. Because of the aesthetics and natural attributes of the structures, there is less chance of children feeling overstimulated. Children who are calm and curious can engage in creative and imaginative play on the structure.

Furthermore, log construction provides children with opportunities to engage in challenging adventurous play, problem-solving, decision-making and leadership. Their language skills, communication skills, teamwork, cooperative play and physical strength, balance and coordination are advanced through play that occurs on log structures. The research is clear: providing children with unique, unscripted, open-ended log play structures offers countless benefits to their sense of curiosity, desire for exploration and experimentation and for their overall health and wellbeing that can have lifelong effects.

Foot movements that children use when on climbers require a combination of stepping, gripping and pushing off with their feet. Specific foot movements include:

1. Toe or heel hooks

Children use their toes or heels to hook onto a hold or edge on the climber to pull themselves up.

2. Smearing

Children press the sole of their foot against a flat surface to gain traction and support.

3. Edging

Children use the edge of their shoes to grip onto small holds or edges.



ABOUT THE AUTHOR

JAIME
BLACKLOCK

Jaime works for KinsolPlay, a natural playground company on Vancouver Island. As a parent herself, it was not difficult to develop a passion for unscripted, natural play after starting with the company and joining the playground sales team was a natural fit.



ABOUT THE AUTHOR

BEVERLIE
DIETZE

Beverlie has a passion for early childhood education and has spent her career as an educator, researcher, and writer on an array of topics, including play, programming, and outdoor pedagogy.

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