

Recent research in children's brain development has proven that the first three years in a child's life are the most crucial to intellectual, emotional and physical development. During this period in a child's life, 80% of the adult brain develops (90% by the age of five), mainly due to the rapid production of connections between brain cells, known as synapses. The connections are formed and strengthened by introducing a child to a mixture of multi-sensory experiences, actions, emotions, and environments. However, if a child lacks a variety of stimulating experiences during their first years, the brain will begin to "prune" the unused synapses (Zero To Three: National Center for Infants, Toddlers, and Families (ZTT), n.d.). Therefore, parents have a huge opportunity to help their child's brain develop to its full capacity.

There are many ways in which parents can facilitate healthy development and assist their children in maximizing their potential. Early childhood experts at Zero to Three: The National Center for Infants, Toddlers, and Families (2004), emphasize that a parent's relationship with their child is the foundation for his or her healthy development. Zero to Three also stresses that children's experiences shape their development as they adapt to the world (2004). One of the primary ways in which children experience and interact with their surroundings is through play. Biological research has indicated that brain stimulation received while playing directly influences the formation and growth of neural synapses; thus, concluding that play positively affects and encourages brain development (Brown et al., 2001). Furthermore, Schappet, Malkusak, and

Bruya (2003) state that engaged play provides children the developmental substance to:

- Build their neurological framework and intellect
- Advance their movement skills
- Become proficient at integrating sensory information

During this cognitive development period, young children, especially infants, are active learners because they are learning through the use of their senses and their physical abilities. They can begin to understand ideas through repetition of activities such as object permanence, pretend play, babbling, or singing (Frost, Wortham, and Reifel, 2001). Play also leads to the progression of a child's motor development abilities. Through playing, a child can expand his physical capabilities from primarily using his reflexes to mastering both his gross-motor and fine-motor skills (Frost, Wortham, and Reifel, 2001). These skills are improved through exploration and repetition.

There are several other advantages of play for children during early childhood that have lasting effects. The array of benefits of play as we understand them today continues to be heavily influenced by several aspects of social and psychological theories. The applicable features of these theories teach us that:

- "play tells us who the child uniquely is, as a constructor of her own life history;
- children resolve problems through play;
- feelings or affect is an important part of play;
- who we are as individuals is shaped by play;

- our developmental or life histories are important for understanding who we are” (Frost, Wortham, and Reifel, 2001: 41).

In addition to these significant features, play also begins a period of communicative and social development which evolves as the child’s interaction with play partners increase (Calabrese, 2003). Infants begin to learn the sounds of words and the rhythm of language when parents or caregivers talk to them (Zero To Three: National Center for Infants, Toddlers, and Families (ZTT), 2004). Before long, infants will learn to communicate more effectively with gestures, sounds, and words.

Another area of growth in which the power of play is linked is the development and enhancement of multiple intelligences. There are eight types of intelligences which all people possess, but to different capacities. The eight intelligences are:

- Linguistic
- Logical-mathematical
- Spatial
- Bodily-kinesthetic
- Musical
- Interpersonal
- Intrapersonal
- Naturalist

(Armstrong, 2000).

These intelligences function together in complicated, unique ways within each person. All humans possess these eight features, but individuals have different functioning levels for each intelligence. However, most people are able to develop each intelligence to an adequate level (Armstrong, 2000). Since there is also no standard set of qualities associated with any particular intelligence, there are numerous possible ways to be intelligent within a category. This component allows for a diverse array of methods in which people show strengths and weaknesses within their intelligences. All of the intelligences are continuously interacting with each other in complex ways; therefore no intelligence can exist by itself (Armstrong, 2000). It is extremely beneficial for children’s growth and

development to explore and expand their intelligences.

One of the primary ways in which to encourage healthy development, both physically and mentally, is through frequent exposure to a wide variety of stimulating activities and environments. Therefore, an effective play environment needs not only to incorporate multi-sensory stimulating aspects (Brown, et al., 2001), variety in form and structure, creative opportunities, and spaces for free-play, but it is vitally important to integrate natural aspects as well. For that reason, it is crucial for play settings and their elements to include the true content of a child’s physical world, natural ingredients, such as trees, animals, dirt, and water.

There are numerous developmental and educational benefits that are achieved through incorporating nature into the landscapes of play environments for children. The Natural Learning Initiative, a research and extension program of North Carolina State University, highlights many of the advantages that derive from playing and learning in natural settings, including the following:

- Stimulates all aspects and stages of child development
 - Offers multi-sensory experiences
 - Stimulates informal play experiential learning, and natural learning cycles.
 - Stimulates imagination and creativity in a special, boundless way
 - Helps children feel good about themselves, enhancing self-esteem
 - Centers children in the environment where they live
 - Helps children understand the environment where they live
 - Helps children understand realities of natural systems
 - Teaches that nature is regenerative
- (North Carolina State University College of Design, n.d.)

All of these points help support the theory for integration of play and nature, which yields many different educational rewards that filter into the everyday lives of children. According to

Schappet, J. and colleagues (2003), play environment is summed up as an “interesting dichotomy- one part simplicity and one part laboratory.”

Children are incredibly inventive and they can create and discover unique aspects of their world if given the chance. At the same time, parents need to be able to ensure a child’s safety while giving them the opportunity for exploration and discovery. Thus, it is important to allow children enough freedom to interact with a safe, natural environment in order to grasp a better understanding of themselves and the world around them.

Kronkosky's Tiny Tot Nature Spot

An excellent example in Bexar County of a play environment that incorporates nature as an educational tool is the San Antonio Zoo. The exhibit provides a playful setting which encourages young children to explore and learn about nature, fostering an appreciation for the natural environment while stimulating cognitive and social development. Parents who visit the zoo with their children consistently comment on the Nature Spot as “a great place to interact with young children” and “perfect for small children” (Kronkosky Charitable Foundation, 2007).

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