

part 1 of 2—

Brighter Brains

by Sandy Friesen

What do we know about the brain? Why do we need to know about the brain? What can I do to help the children I work with optimize their brain development?

Educators and parents are asking these questions all over the United States. With the latest breakthroughs in technology, the brain can be more closely examined. Since this technology is relatively new, we should be cautiously optimistic about what we think we're learning from the results of innovative techniques like the PET scan and synapse counting.

What Do We Know About the Brain?

- The brain weighs about three pounds.
- It is gray.
- Each person is born with over 100 billion cells (neurons).
- At birth, the human brain is underdeveloped.
- The brain is designed for learning. (Learning is making connections [synapses] among the brain cells.)
- "Connection making" peaks between three to ten years of age.
- The brain has the ability to

change its structure and function in response to experiences.

- The brain is the most receptive to environmental input during early childhood.
- It is during childhood that the brain matures and the whole set of brain-related capabilities develops in a sequential fashion



(i.e. crawling before walking, babble before talk).

- The process of sequential development is guided by experience.

Why Do We Need to Know about the Brain?

Historically, children have

been considered "less important than adults." The emotional, intellectual, and spiritual worth of a child was not always deemed as valuable as those of his adult counterparts. Those of us in children's ministries will raise our voices with firm conviction that today's children are tomorrow's church. We feel strongly that without the Christ-like nurturing instilled into the lives of the little ones, we would miss the greatest evangelistic opportunity that exists.

With a cultural value system that is saying "we'll worry about children when they are teens or adults," we are not only missing opportunities, we are doing damage. When it is perceived that a person can't really understand until he is at least twelve years old, a teacher or parents literally give up some very important windows of educational and moral training that cannot easily be recovered at this advanced age.

If we understand how the brain functions, we can help shape the experiences of children so that they will be exposed to the necessary brain formation that will bring about healthy, Christ-like character development throughout their lives.



part 2 of 2—

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What Can I Do to Help the Children I Work with Optimize Their Brain Development?

- Look at the windows of opportunity and encourage experiences that let the child exercise or experiment with new tasks or abilities. (See sidebar.)

A window of opportunity is a time frame when the brain is especially receptive to learning a new ability. If the new ability is effectively introduced, the brain will make connection (synapses) that can be lifelong pathways for the person to use. If there is no exposure, then the connections will not be made and brain cells will wither away. Does that mean the child cannot learn that task? No, it just means it will take

more effort after the optimal window is closed.

- Children need loving care—not stress. Research is showing us that children who come from stressful environments are hyper-vigilant. A hyper-vigilant child over-responds or reacts inappropriately to life events. It seems that a child exposed to stress has a brain that is flooded with chemicals that inhibit or curtail the development of “normal” or “healthy” synapse connections. Therefore, he is not able to discern what he should be upset by and what is just one of life’s little irritations. It is important that the classroom be a refuge, a time of consistent, nurturing care and acceptance.

- Touch children. Appropriate, caring touch has been found to sooth premature infants. The babies also had better weight gain, were more alert, and cried less.

- Pay attention to hearing and language. Repetition helps

form connections. When you speak to children (and do so often), describe what you are talking about, label items, express emotions, point, use facial expressions, and repeat information. Use music. One of the biggest pushes in the preschool world is the use of classical music. Technology is showing accelerated brain activity when classical music is played. Mozart’s music is getting the highest grades. Note: Research shows that television does not equal caregiver involvement.

- Look for teachable moments. Let young children explore, explore, and explore! Monitor their exploration and take time to point out colors, sounds, shapes, textures, etc. Describe their environment to them (trees, plants, water, etc.) simply.

- Monitor the emotional environment. Children respond to the emotions of those around them. They can “feel” your acceptance or rejection. They also have their own set of temperaments and learning styles through which they perceive the world. As adults, it is our role to nurture them so they can be all that God intends.

Windows of Opportunity

Motor Development	Birth to age 5
Emotional Development	10 to 18 months
Vision	Birth to 2 years
Vocabulary	Birth to 3 years
Second Language	Birth to 10 years
Math-Logic Development	Birth to 4 years
Music	3 to 10 years

