



FROM BIRTH TO AGE 3: THE BRAIN IS SHAPED FOR LANGUAGE

Brain Research: Literacy Depends on Experience in the First 3 Years

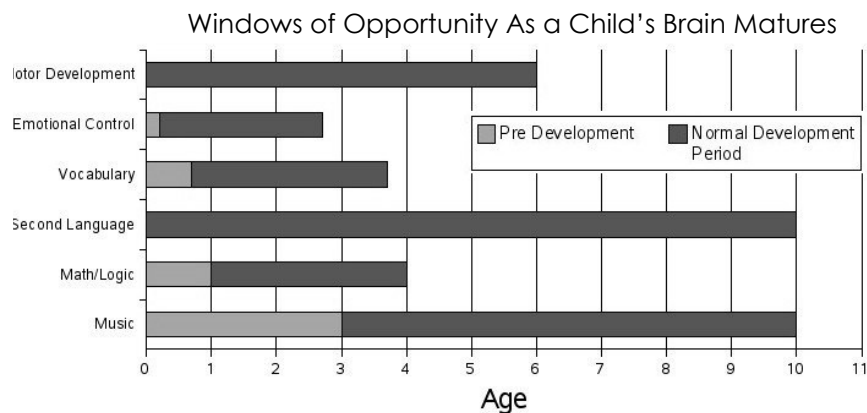
Scientists and educators have long believed that reading with children creates a context in which learning can occur. Today, however, they have evidence that reading actually influences the way young brains develop.

At birth, children are born with most of the brain cells (neurons) they will need for a lifetime of learning, but these brain cells are not yet linked with the complex networks needed for mature thought processes to take place.

What causes these connections (synapses) to be formed? Genes play a role, but experience is also a crucial ingredient.

Every time a caregiver interacts with an infant or toddler, new synapses form. Nurturing interactions — like being talked and read to—cause new neural pathways to form and strengthen existing ones.

In the first years of life, children form many more synapses than



The “window of opportunity” for building permanent brain connections for language is open widest in the first 3 years of life. After that, far fewer new brain connections are created, and with far greater difficulty.

they need; a three-year-old has twice as many as an adult. In fact, by the age of three, a child’s brain is apt to be twice as active as that of his or her pediatrician!

In the second decade of life, as children move toward adulthood, trillions of extra connections are eliminated. This is not a random process. Connections that have

been used repeatedly in the early years have become stronger and tend to remain; those that have not are shed.

By the age of three, 90% of a child’s brain has grown. The brain’s permanent “circuitry” for literacy—reading, writing, communication—is now established.

Did You Know?

In the time it takes to read “Goodnight Moon” to a young child, thousands of new brain connections are made.



A Child Read To From a Young Age...

Has heard more than 30 million words by age 3 and has a vocabulary of 20,000 words by age 6.