Fact: Research suggests that enriched classrooms – replete with feedback, peer interaction, and meaningful learning – not only produce better learners, but also help the brain grow new synapses and strengthen existing ones (Woodcock & Richardson 2000; Elkind 1999; van Praag, et al 1999).

Animal studies by van Praag and colleagues (among others) suggest that enriched environments tend to stimulate the growth of neural connections in the brain’s frontal cortex, hippocampus, and corpus callosum. Cognitive enhancements in these areas were found to improve learning and problem solving in normal animals and to reduce cognitive impairment in brain-damaged animals. Soffie and colleagues (1999) found that neural growth in rats can continue into old age with proper learning reinforcement. And van Praag found that, in addition to the growth of new synapses, enriched environments actually facilitated the growth of new brain cells in rats. In healthy and learning-disabled humans, significant improvement in learning has also been noted after exposure to enriched environments (Stone & Christie 1996; Grabe 1992).

What causes the brain to respond positively to enriched environments? The brain contains millions of nerve cells that produce and send small electrical signals responsible for mental activity. Each neuron connects to another. Enriched learning environments tend to provide the brain with positive and meaningful reinforcement over an extended period of time, which scientists know strengthens synaptic connections.

Investigation of a protein called Src is also providing insight into how the brain is enhanced by enrichment. Studies have found that the brain’s synapses are strengthened by the activation of Src. Once this protein is triggered by the brain, a cascade of events occurs in the neuron, strengthening synaptic connections and subsequently enhancing the transmission of impulses between neurons – a process that aids learning and memory (Lu, et al. 1999; Salter 1998).

Action Steps:

- Enrich learning environments with frequent feedback, challenge, repetition, peer and teacher interaction, movement, music, color, and stimulating learning materials.
• Augment classroom learning with frequent field trips, guest speakers, outdoor learning, and real-world applications and experimentation with newly learned material. For example, have junior-high and high-school students use their math skills to balance a checkbook, fill out a tax form, or create a personal budget.

• Avail yourself of the most recent scientific findings to discover additional techniques and strategies for enriching the learning environment.


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