

Critical thinking on your brain and behavior

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The cerebral cortex is the seat of mostly voluntary and conscious actions performed by the body. Reading is a complex activity that involves various parts of the brain to function both in consonance and in sequence to bring about the understanding that we require when we read.

The occipital lobe of the brain is heavily involved in the process of reading. The occipital lobe of the brain is located at the posterior aspect of the brain. Fibers from the optic nerve that sub serves the eyes terminate in the occipital cortex.

The temporoparietal and occipitotemporal cortical regions are also involved in the process of reading. Visual information is mapped into auditory and conceptual information in these areas of the brain. The left hemisphere of the brain is involved in these processes.

Neurotransmitters involved in the circuits include serotonin, noradrenaline and acetylcholine. All these three neurotransmitters are distributed to all cortical areas. Gamma amino butyric acid (GABA) is the neurotransmitter used by most cortical interneurons.

Other parts of the brain may be involved in the process of reading, depending on the content of the material. Therefore, the amygdala, which is concerned with emotional activities, could actually be activated by the process of reading if the material provokes any emotion.

The Hippocampus is heavily involved in the process of reading because it is concerned with memory. In order to understand the material being read, the information must be stored in the short-term memory circuit. Moreover, in

order to be able to recall the information later, the information is transferred to the long-term memory.

In conclusion, reading is a complex activity that brings together many parts of the cerebral cortex in order to function optimally.

Reference

P. T. Turkeltaub et al (2003). Development of neural mechanisms for reading. Nature Neuroscience Vol 6. retrieved from <http://www.nature.com/neuroscience> on 3rd July, 2012.