

COGNITIVE PSYCHOLOGY

L3 /ALL GROUPS

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LECTURE 03: BRAIN AND MIND

1. DEFINITIONS
2. BRAIN STRUCTURE AND FUNCTIONS
3. THE DIFFERENCE BETWEEN BRAIN AND MIND

1. DEFINITIONS

Brain: The portion of the *central nervous system* that is located within the skull. It functions as a primary receiver, organizer, and distributor of information for the body. It has a right half and a left half, each of which is called a hemisphere.

"**Mind**" refers to the part of you that is capable of thought.

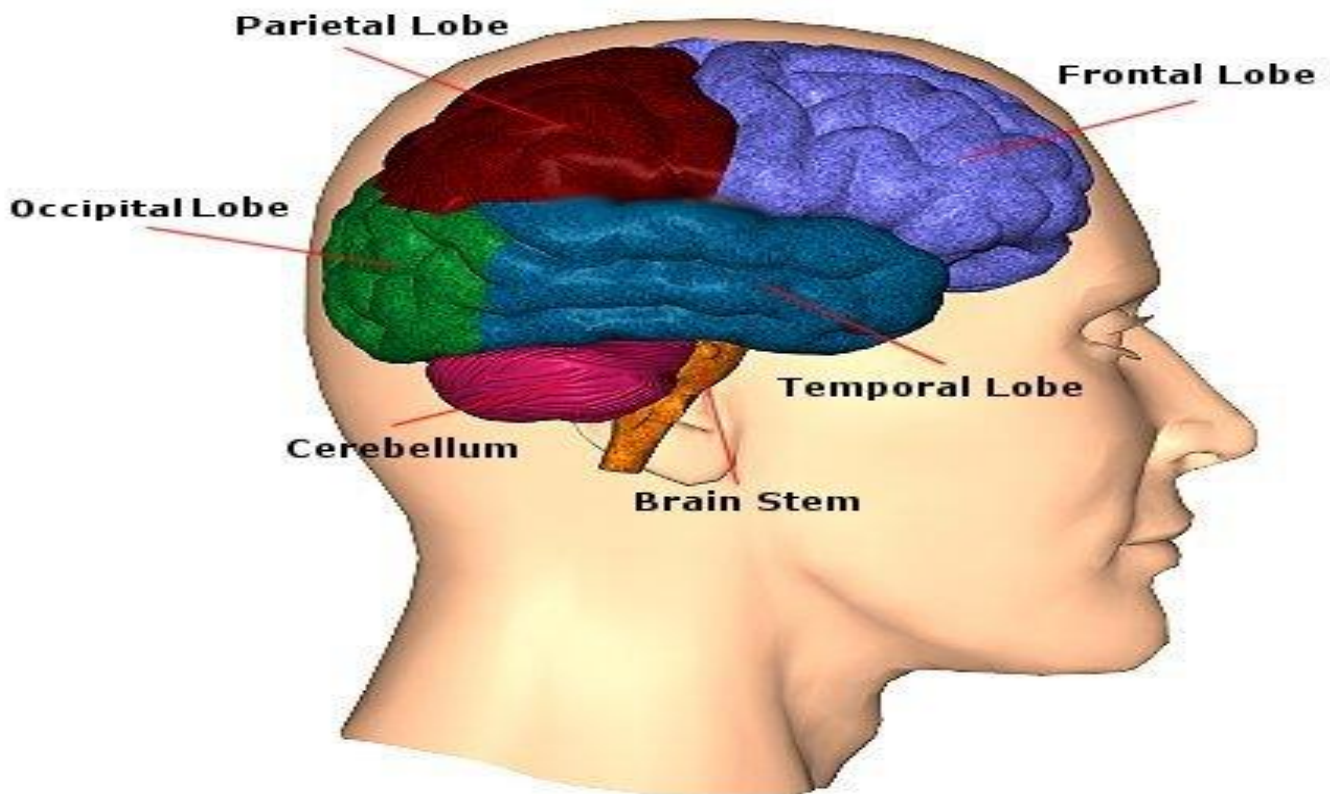
"Brain" can be a synonym for mind, and it can also refer to the physical organ within your skull. That is, the "brain" is a physical organ while "mind" is a more philosophical concept.

There is a HUGE difference between the Mind and the Brain. The Mind is the Creator of thought, while the Brain is the Receiver of thought! So often people make reference to the brain by comparing it to the mind, and nothing could be further from the truth.

2. BRAIN STRUCTURE AND FUNCTION

The brain has two **halves** or **hemispheres**: right and left. The right hemisphere controls the left side of the body, and the left hemisphere controls the right side. In most people, the left hemisphere regulates language and speech, and the right hemisphere controls nonverbal, spatial skills. If the right side of the brain is damaged, movement of the left arm and leg, vision on the left, and/or hearing in the left ear may be affected. Injury to the left side of the brain affects speech and movement on the right side of the body.

Each half of the brain is divided into main functional sections, called **lobes**. There are four lobes in each half of the brain: the *Frontal Lobe*, *Temporal Lobe*, *Parietal Lobe*, and *Occipital Lobe*. Other important sections of the brain are the *Cerebellum* and the *Brain Stem*. Although not usually divided into lobes, the cerebellum and brain stem both have different parts. Each of the brain hemispheres and lobes, cerebellum, and brain stem has specific functions, and they all work together:



FRONTAL LOBE: most anterior, right under the forehead; the frontal lobe controls intellectual activities, such as the ability to organize, as well as personality, behavior, and emotional control.

PARIETAL LOBE: near the back and top of the head above the ears; the parietal lobe controls the ability to read, write, and understand spatial relationships.

OCCIPITAL LOBE: most posterior, at the back of the head; the occipital lobe controls sight.

TEMPORAL LOBE: side of head above ears situated immediately behind and below the frontal lobes; the temporal lobe controls memory, speech and comprehension.

BRAIN STEM: lower part of brain, leads to spinal cord; the brain stem contains nerve fibers that carry signals to and from all parts of the body. The brain stem also regulates body functions such as consciousness, fatigue, heart rate, and blood pressure. Damage to the brain stem can cause loss of consciousness.

CEREBELLUM: located at the base of the skull; it is a curved mass of nerve tissues that regulates balance and coordinates fine motor skills; it enables us to move quickly and smoothly.

GREY AND WHITE MATTER: The brain is made up of two types of tissue, grey matter and white matter. Grey matter is involved in analyzing information. White matter conducts information between grey matter areas. The ratio of grey to white matter changes over the lifespan.

3. THE DIFFERENCE BETWEEN BRAIN AND MIND

A computer required hardware to perform its function. And the hardware need software to make it run. Without software, hardware would be useless and without hardware, software can not be used. Brain is like the hardware and mind is like the software. But in reality, *the difference between brain mind* are more complicated than software and hardware.

The words **brain** and **mind** are mostly used interchangeably even though they really do refer to separate, although often overlapping, concepts. The brain is an organ but the mind isn't. The brain is the physical place where the mind resides. It is a vessel in which the electronic impulses that create thought are contained. With the brain you coordinate your moves, your organism, your activities and transmit impulses. But you use the mind to think. You can muse at what happened, what is scheduled and what maybe will happen.

The mind is the manifestations of thought, perception, emotion, determination, memory and imagination that takes place within the brain. Mind is often used to refer especially to the thought processes of reason. The mind is the awareness of consciousness we know, the ability to control what we do, and know what we are doing and why. It is the ability to understand. Animal are able to interpret their environments, but not understand them. Whereas human are able to understand what happens around them, even if not the scientific reasoning for it, and therefore adapt.