

Learning and Memory....It's Mindboggling!

“Learning is how you acquire new information about the world, and memory is how you store that information over time,” says Eric R. Kandel, M.D. and Vice Chairman of the Dana Alliance for Brain Initiatives and recipient of the 200 Nobel Prize in Physiology or Medicine for his work on the molecular basis of memory. “There is no memory without learning but there is learning without memory,” Kandel says, because “you can learn things and forget them almost immediately.”

As a result, not all learning gets stored into memories that will last. We look up a phone number and retain it just long enough to dial it. This is sometimes called “working memory”. It still requires learning, just not for the long haul. And, there are also three other basic types of memory: sensory, short-term and long-term. Short-term is memory of recent knowledge and happenings, while long-term memory helps us recall events and knowledge from our past.

Memory is certainly not a simple process as our brains also seem to have different, overlapping systems for short-term and long-term types of memories:

- **Explicit (also called declarative) memories are those you can recall consciously and describe verbally, such as facts, people and places you encounter regularly**
- **Implicit (also called non declarative) memories describes our capacity for learning skills and procedures (in other words, how to do something)**

How the brain sorts out everything you experience and then decides what will become a long-term memory and what will not be stored is a matter of continuing debate, and may be influenced by many factors, including our emotional state, long term stress, previous memories, biases and perceptions. Many brain scientists believe that the effects of normal aging or memory loss may result from the delicately changing environment within the brain itself.

What scientists do know is that, as we get older, our ability to retain new memories may be affected making it more difficult to learn new things as rapidly as we did in our earlier years. It is not so much that we forget more easily, but that we may take longer to learn the information in the first place. In practical terms, this means that as we get older, we may have to pay closer attention to new information that we want to retain or use some strategies to improve learning and trigger memory formation. These are a few of the most common suggestions:

- **FOCUS...try to reduce distractions and minimize interferences when learning or concentrating**
- **ORGANIZE...keep important items in a designated place that is visible and easily accessed**
- **REPEAT IT... repetition improves recall; use it when meeting new people and learning new things**
- **VISUALIZE IT...associate a visual image with something you want to remember or recall**
- **RELAX...tension and stress are associated with memory lapses, and managing stress will also improve your memory**
- **WRITE IT DOWN...carry a notepad and calendar, and write down important things and dates**

Other studies have shown that people who tend to “successfully” age (have the least declines in memory and cognition) have certain characteristics that help keep them sharp. The highest correlations are with the following four items:

- **Aerobic exercise seems to sharpen memory skills and brain health is linked to physical activity**

- Brain cell networks may strengthen when you learn new things or pursue activities that are intellectually stimulating (challenge yourself every day to learn something new)
- Longer formal education is associated with mental sharpness among older persons, possibly because continued learning creates stronger nerve-cell connections
- Although the reasons are unclear, a sense of control or influence over our lives and those of others – believing that what we do makes a difference- seems to prevent cognitive decline

If you are interested in learning more about memory and learning please consider attending two “Bits and Bites” programs (a bit of information and a bite to eat) that are being sponsored by the new Delta College program titled *50+...Just Like Gold*. These sessions will be held on the main campus from 11:30 am to 1:00 pm on Tuesdays, November 18 and December 16. Advance registration is required. You may sign up for both or one of these by calling the Delta College LifeLong Learning Office (989) 495-4000, extension 9364.

Aldus Huxley is credited with saying “Every man’s memory is his literature”. May you continue to add pages to your personal book of life!

Sue Montesi
Dean of Learning Centers and Innovative Programs
Delta College