

Enhancing Student Learning: Emerging Research and Innovative Strategies



Simple Strategies for Student Success
Kansas State University

February 2, 2013

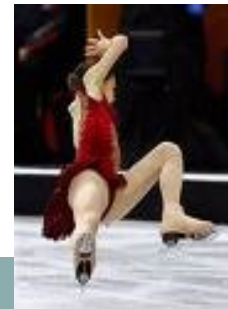
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Attribution

How do we describe the “cause” of behavior???

- Internal (dispositional)

- External (situational)



What the Brain Needs to Learn



- Exercise
- Sleep
- Oxygen
- Hydration
- Food (glucose)



That sets the stage.....THEN there must be...

Exercise



- Ratey (2008) has shown that exercise increases the production of vital neurotransmitters important for:
 - Focusing and Attention
 - Motivation
 - Patience
 - Mood



Sleep and Rest



- Sleep and Rest – Researchers at the NYU’s Department of Psychology and Center for Neural Science have found that rest directly after learning increases retention
- A NASA study found astronauts who napped for 27 minutes in the afternoon improved their cognitive functioning on later day tasks by 34% over nonnapping astronauts (Medina, 2008).



Awake, but NOT Learning



Corelli, 2011 notes that when a person's brain is sleep deprived the person may actually feel fully awake and yet the neurons needed for learning and memory shut down. Essentially, basic functions operate, but complex tasks are not encoded.

Food/Hydration



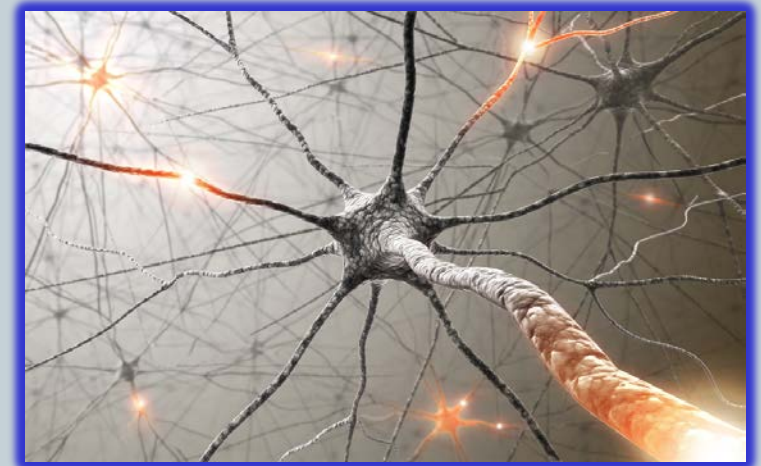
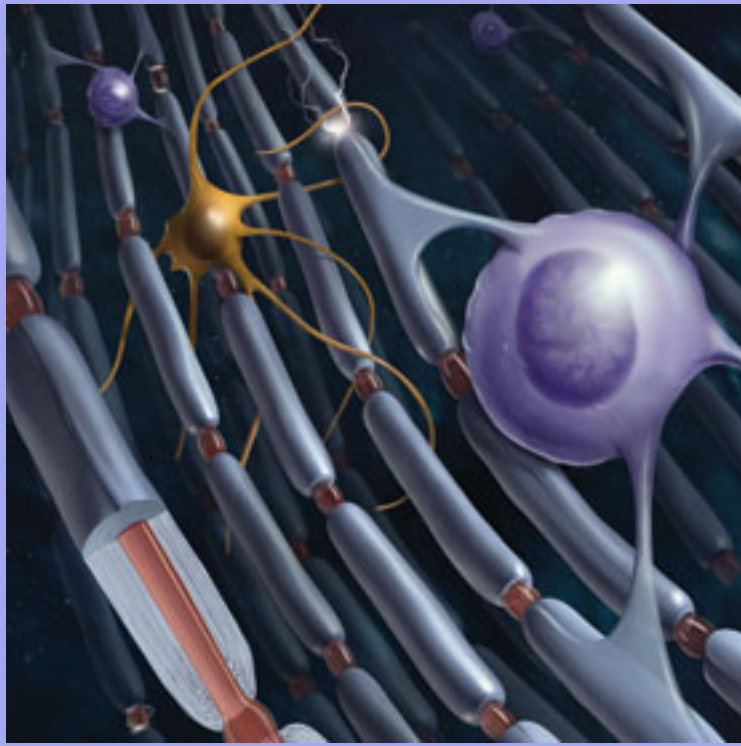
- Food (glucose) --- Complex carbohydrates (vegetables and whole grains) MUCH better than simple sugars



Multitasking



Long-Term Potentiation



<http://www.youtube.com/watch?v=Df04XPBj5uc>



**Learners must be taught to
take a metacognitive
approach.**

Bransford, et al., *How People Learn*, 1999

http://www.nap.edu/openbook.php?record_id=6160

Types of CATs



- Minute Paper (check understanding at end of class session)
- Muddiest Point (check understanding at end of class session)
- One-Sentence Summary (check understanding at end of class session)
- Directed Paraphrasing (check understanding of a concept)
- Lecture Checks (Mazur's Technique)
- Card Passing (very good for sensitive topics)