

# Learning, Teaching & Innovative Technologies Center



Middle Tennessee State University

## Brain-Based Learning Tips

Brain-based learning and teaching focuses on how the brain learns – the science of learning. Advocates of brain-based learning have concluded that teaching techniques based on the neuroscience of how the brain learns are effective in producing long-term learning. For example, we have all heard something about the “Mozart Effect.” The theory suggests that listening to Mozart enhances learning. This idea is based on the thought that listening to certain kinds of music stimulates the part of the brain that triggers spatial memory.<sup>1</sup> Spatial memory records daily experience and is a natural process whereas rote memory handles facts and skills in isolation. Rote learning on the other hand, separates information and skills from prior experience and normally does not produce long-term learning.<sup>2</sup>

Brain-based teaching incorporates three instructional techniques:

1. Orchestrated immersion – Creating an educational experience that immerses students in higher-order thinking, making connections relevant, and using creativity to design learning environments.
2. Relaxed alertness – An atmosphere that is low threat and high challenge. The goal is to eliminate stress and fear that inhibit learning and provide a learning environment that is positive, non-threatening and challenging.
3. Active processing – Students need time to consolidate and internalize information by actively processing it.<sup>3</sup>

According to research on brain-based learning, environments, diet, amount of sleep, and water intake all affect the way our brain responds and learns.<sup>4</sup> This information can be used in the classroom to create vibrant learning environments. Other suggestions on how to integrate brain-based teaching include:

- Tie in facts and skills with real experiences to embed learning in a meaningful way.
- Incorporate learning with storytelling. Storytelling is an effective way to ground the meaning in structure and provide for emotion.<sup>5</sup>
- Provide structure – connect today’s material with previous and future material to help each person as he/she seeks to make sense of the information he/she hears or sees.
- Use speculations, experiments, question and answer sessions, hold debates, games, simulations, music, songs, and role playing to embed information into the student’s long-term memory.
- Tie in information with the students’ previous experience or make it relevant in their life in order to enhance the brain’s transfer of knowledge into long-term spatial memory.

Numerous research studies, books, and articles have been written on brain-based learning. To learn more about it, attend the First Tuesday session on “Brain Based Approaches to Teaching and Learning,” led by Jan Hayes on Tuesday, October 4th in the Business and Aerospace building, room NI27, at 3:00 p.m. or check out the resources below. If you are unable to attend the First Tuesday discussion visit the LT&ITC website later in October for the archived video of the discussion.

## References

1. Chance, Paul. "Brain-Based Learning (Second Edition). (Reviews: The Brain Goes to School: Why Neuroscience Research is Going to the Heads of the Class)." *Psychology Today*. (September – October 2001): 72(1).
2. Southwest Education Development Laboratory. *Classroom Compass*, Vol. 3, No. 2, <http://www.sedl.org/sci-math/compass/v03n02/brain.html>, viewed on the Web 9/7/2005.
3. Caine, R.N., & Caine, G. (1997). *Education on the edge of possibility*. Alexandria, VA: Association for Supervision and Curriculum Development.
4. Prigge, Debra J. "20 Ways to Promote Brain-Based Teaching and Learning." *Intervention in School and Clinic*. (March 2002): 237(5).
5. Hayes, Jan. (2005). "Brain Based Approaches to Teaching and Learning," PowerPoint presentation for First Tuesday Series, Middle Tennessee State University, October 4, 2005.

We would like to hear about your innovative teaching ideas, please e-mail us at: [ltanditc@mtsu.edu](mailto:ltanditc@mtsu.edu) or phone: 615-494-7671.