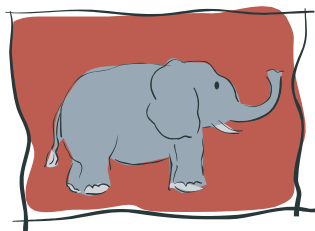


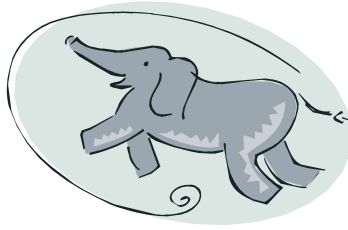
## Emotion and Learning: Capitalizing on Emotion, the “Elephant” in the Classroom

*Things become real to the brain when we feel them.*



### I. The Physiology and Nature of Emotions

- “The emotional system is a complex, widely-distributed, and error-prone system that defines our basic personality very early in life and is quite resistant to change.”
- “The emotional system is located principally in our brain, immune, and endocrine systems, but it also affects such organs as our heart, lungs, stomach, and skin. Emotions are the glue that bonds the brain/body integration.”
- Emotions are at least two times as fast as rationale thought.  
*R. Sylvester, A Celebration of Neurons: An Educator’s Guide to the Brain*
- Emotions affect all mental functions.
- Emotions have their own memory pathways.  
*J. LeDoux, The Emotional Brain*
- Emotions are enmeshed in the neural network for reason.
- With too little emotion, behavior becomes more irrational.
- We rarely get angry for the reasons we think. Each time we react, it’s the triggering of an earlier, stored emotion.  
*A. Damasio, Descartes’ Error: Emotion, Reason, and the Human Brain*
- Positive emotions better enable us to sort out our experience and recall it with more clarity.
- Emotions operate throughout the body. That “gut feeling” about something really is, in fact, a gut feeling. Neuropeptides from the brain land in receptor sites in the gastrointestinal tract, and there are innumerable receptor sites there.  
*C. Pert, Molecules of Emotion*
- Pert, Damasio, and LeDoux concur: Research does *not* support the clear separation of mind, emotion, and body.
- “Practice and emotion are the two things that cause changes to take place in the brain when we learn. For the brain, emotion means emotion chemicals such as adrenalin (fight or flight), dopamine (reward), and even serotonin (sleep and peace). Emotion and thought are physically entangled. We feel emotions in our body, and the way we feel influences the brain.”  
*J. Zull, “The Art of Changing the Brain” (Educational Leadership)*
- “It is biologically impossible to learn something to which the brain has not paid attention. Emotions are now known to be a primary catalyst in the learning process.”  
*K. Wesson, “What Everyone Should Know about the Latest Brain Research”*
- See other links for related information on the amygdala, stress, and the adolescent brain.

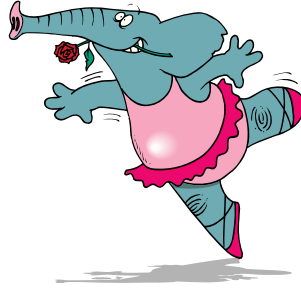


## II. The Roles of Emotion in Learning

### Emotion

- directs attention.
- creates meaning.
- motivates us.
- influences our priorities and goals.
- helps us focus our reason and logic.
- drives our creativity.
- affects our memory.
- affects alertness.
- speeds up thinking and decision-making.
- affects problem-solving ability.
- influences behavior.
- is crucial to survival.
- constitutes our personalities.

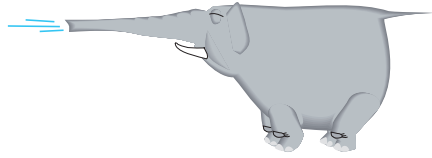
***Emotion drives attention.  
Attention is a precursor for learning and memory.***



### III. Eliciting Positive Emotions and Boosting the Emotional Content of What You're Teaching

- Use material that has a high emotional content.
- Discuss people's and literary characters' motivations
- Set realistic, but high, expectations.
  
- Use framing and positive wording; give students a reason to say YES! at the beginning of class.
- Smile; incorporate humor, pleasure, and celebrations.
  
- Offer personal attention, acts of caring, and recognition.
- Involve students in cooperative learning activities; foster friendships.
- Create an atmosphere of safety, security, and belonging.
  
- Use music.
- Give students opportunities to stretch and move.
  
- Use games, friendly competition, and other enjoyable activities.
- Incorporate storytelling, myths, legends, parables, and metaphors.
- Try role-playing, skits, and debates.
  
- Introduce novelty and high contrast.
- Incorporate suspense, cliffhangers, and things left open-ended and unresolved.
- Create positive stress.
- Structure appropriate challenges and problems to solve.
  
- Give students the locus of control; whenever possible, offer them a choice.
- Point out to students the relevance of what they are learning.
- Have them practice in real-life situations and contexts.
  
- Provide instruction via multiple pathways.
- Include rubrics for self-assessment, such as computer-assisted instruction, that provide non-punitive feedback.

***Learning experiences that elicit positive emotions cause students to want more of those types of experiences.***



#### IV. Decreasing Negative Emotion in the Classroom

In addition to the strategies in the preceding section, you can

- Have students pause for a moment of deep breathing.
- Encourage students to reflect on and talk about their emotions, and to listen to classmates' feelings.
- Monitor the class's mood.
- Show appropriate emotions yourself.
- Begin wherever students are.
- Give students a 5-minute brain break.
- Establish positive procedures that preempt negative emotions from occurring.
- Be proactive.
- Teach students strategies for coping with stress.
- Teach students to challenge negative beliefs and automatic, negative self-talk.
- Avoid
  - sarcasm and put-downs.
  - threats and humiliation.
  - unrealistic deadlines, compelling rewards, unfair demands.
  - competition that's not friendly and good-natured.
  - withdrawal of attention.
  - disruptive student behavior that stresses other students.

**“Giving (young people) a biological perspective on (the brain) is empowering and comforting. It is a nonjudgmental way of helping people understand more about themselves.”** Dr. Huda Akil, professor neuroscience and psychiatry, University of Michigan; past president, Society for Neuroscience

## V. The Teacher's Emotional State

- Teachers are every bit as emotional beings as students are.
- Your emotional state will either enhance or hurt what happens in class each time.
- Your attitude and state of mind are as important as the material you present. Center yourself before you go to class.
- Teachers who smile, have a sense of humor, a joyful attitude, and take genuine pleasure in their work generally have higher performing students.
- Plan carefully for class.
- Take care of yourself physically, mentally, and emotionally.

If the learner is confident, learning increases.

If the learner believes in the teacher, learning increases.

If the learner thinks the subject is important and valuable, learning increases.

If the learner believes it will be fun, learning increases.

*All of these involve emotion, and as the teacher,  
you have enormous control over them.*

**This is what it means to win students' *hearts and minds*.  
It's our task to do both.**

Did you know that ...  
we use 42 facial muscles to express emotions;  
there are about 10,000 human facial expressions; and  
more than 600 words in English are used to describe emotions?

**"Emotion is a primary catalyst in the learning process."**

Pat Wolfe, Ed.D., educator, consultant, & author



## RESOURCES: EMOTIONS AND LEARNING

### Theory and Research

- Csikszentmihalyi, M. and I. Csikszentmihalyi. (1990). *Flow: The psychology of optimal experience*. New York: Harper & Row.
- Damasio, A. (1994). *Descartes' error: Emotion, reason, and the human brain*. New York: Putman and Sons.
- Goleman, D. (1995). *Emotional intelligence: Why it can matter more than intelligence*. New York: Bantam Books.
- LeDoux, J. (1996). *The emotional brain*. New York: Simon and Schuster, Inc.
- Pert, C. (1997). *Molecules of emotion*. New York: Scribner.
- Ratey, J. (2001). *A user's guide to the brain: Perception, attention, and the four theaters of the brain*. New York: Vintage Books.
- Sylwester, R. (1995) *A celebration of neurons: An educator's guide to the brain*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Wolfe, P. (2001). *Brain matters: Translating Research into classroom practice*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Zull, J. (2002). *The art of changing the brain: Enriching the practice of teaching by exploring the biology of learning*. Sterling, VA: Stylus Publishing Co.

### Practical Application

- Fogarty, R. (2002). *Brain compatible classrooms*, 2nd ed. Arlington Heights, IL: Skylight Professional Development.
- Jensen, E. (2000). *Brain-based learning*. San Diego: The Brain Store.
- Liff, S. (2003). Social and emotional intelligence: Applications for developmental education. *Journal of Developmental Education*, 26, 28-43.
- Sousa, D. (2001). *How the brain learns*, 2nd ed. Thousand Oaks, CA: Corwin Press, Inc.
- Sullo, B. (2007). *Activating the desire to learn*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Willis, J. (2006). *Research-based strategies to ignite student learning: Insights from a neurologist and classroom teacher*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Zull, J. (2004). The art of changing the brain. *Educational Leadership*, 62 (1), 68-72.

### Web Resources

- <http://www.funderstanding.com/eq.cfm>
- <http://trochim.human.cornell.edu/gallery/young/emotion.htm>