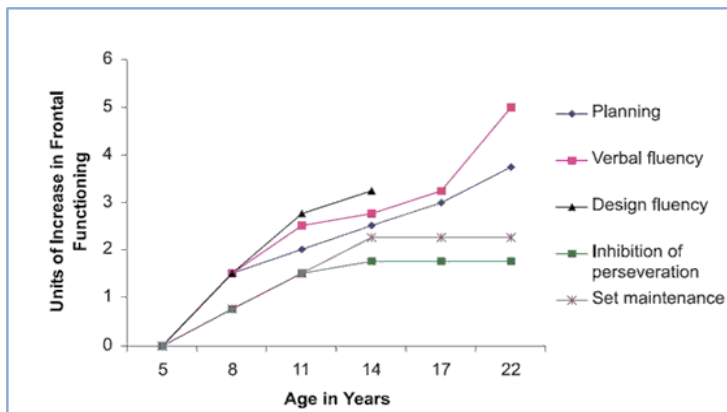


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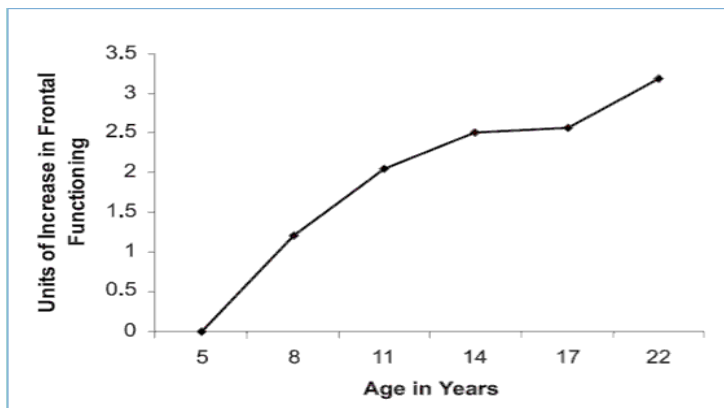
# Helping the Brain to Learn with F.A.C.E.S.

**Learners** enter our classroom mature in some ways, but not so mature in others. These young men and women, usually between the ages of 17-25, have had several years to mature physically. However, entirely invisible from conventional observation, our students' brains are still experiencing some of their most important development during the late adolescent and early adult years. In fact, the area of the brain known as the frontal lobe – which is considered to control the “executive functions” of the brain such as planning, goal setting, self-control, abstract thinking, attention, and the inhibition of emotional impulses – general reaches full physical maturity during the years 17-29 (see Figure 1).



(Figure 1, adapted from Romine & Reynolds (2005), p. 198)

We can easily forget that we are not dealing with fully formed, entirely matured learners. Moreover, once the brain's frontal lobe reaches physical maturity at around the mid-20s, another 10-15 years can pass before a person has fully developed his or her thinking skills. Think of it like this: There are many athletically capable teenage basketball players. However, their physical bodies are still maturing.



(Figure 2, adapted from Romine & Reynolds (2005), p. 198)

Add to that, these teenage athletes are still learning to perform in specific ways. Is it appropriate to expect them to perform at an NBA level while still in their teens? Of course not. Instead, we all know that they'll need more years for their bodies to reach their full physiological maturity and then even more years for them to hone their performance skills. This also occurs

in the human brain. Learners need a significant amount of coaching and practice to make the most of this crucial developmental time period (see Figure 2).

What are some of the things teachers can do to help support the full and healthy maturation of learners' brains? Here are few ideas that can be simply remembered with the acronym **FACES**:

**F**

**FOCUS** Focus students' attention. Brain attention span is about 7-10 minutes. That is to say, the brain will lose focus unless its attention is recaptured every 7-10 minutes. Therefore, when you are lecturing, consider dividing your lecture into equal ten-minute segments. At the end of each segment, use an activity to recapture the learners' attention. For example:

- Summarize what you have said.
- Ask students an intriguing question that leads into the next aspect of the lecture.
- Share a story.
- Do an activity.
- Ask for participation.

**A**

**ALIGN** Align assessment activities contextually with learning activities and materials. Research shows that people learn better when learning is contextualized (Bransford, Brown, Cocking, & Center, 2000). Studies have also shown more than a 15 percent gain in ability when learners are asked to recall instructions in the same context in which they received them (Medina, 2008).

**C**

**CONCENTRATE** Concentrate on Critical Thinking Skills. Like any other skill, thinking gets better with practice. Your course will help students develop more if it emphasizes the acquisition and practice of higher-order thinking skills.

**E**

**EXERCISE** The data provides strong evidence that those who get regular exercise, even if it means studying for a bit less time, achieve significantly higher learning gains (Medina, 2008).

**S**

**SLEEP** Similar to the research results on exercise, those who get regular sleep retain their learning better (Medina, 2008).

The college years provide significant opportunity for students to reach their intellectual potential. Teachers can help students make the most of this time by teaching them how to better focus their attention, encouraging exercise and regular sleep, implementing appropriate assessment activities in your classes, and convincing students to seize this critical developmental opportunity.

## Resources

- Baars, B. J. & Gage, N.M. (2010). *Cognition, Brain, and Consciousness: Introduction to Cognitive Neuroscience*. Amsterdam: Academic Press.
- Bransford, J., Brown, A., Cocking, R., & Center, E. R. I. (2000). *How People Learn: Brain, Mind, Experience, and School*. (2nd ed.). Washington, D.C.: National Academy Press.
- Conklin, H. M., Luciana, M., Hooper, C.J., & Yarger, R.S. (2004). Working Memory Performance in Typically Developing Children and Adolescents: Behavioral Evidence of Protracted Frontal Lobe Development. *Developmental Neuropsychology*, 31(1), 103–128.
- Medina, J. (2008). *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School*. Edmonds, WA: Pear Press.
- Rains, G. D. (2002). *Principles of Human Neuropsychology*. Boston: McGraw-Hill.
- Ronnie, C. B. & Reynolds, C.R. (2005). A Model of the Development of Frontal Lobe Functioning: Findings from a Meta-Analysis. *Applied Neuropsychology*, 12(4), 190–201.
- Zillmer, E.A., Spiers, M.V., & Culbertson, W.C. (2008). *Principles of Neuropsychology* (2<sup>nd</sup> ed.). Belmont, CA: Thomson Wadsworth.

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