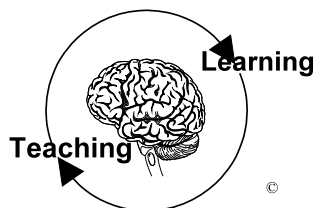


## How the Gifted Brain Learns



Independent Schools Assn. of the Central States  
2010 Annual Conference  
Chicago, Illinois  
Session - T- 43, Thursday, November 4, 2010

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NOTE: As a courtesy to fellow participants and the speaker, please turn off audible cell phones and beepers. Thank you.

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### What Makes a Brain Gifted?

#### A. EXECUTIVE FUNCTIONS

Frontal Lobe: \_\_\_\_\_

\_\_\_\_\_

Prefrontal cortex: \_\_\_\_\_

\_\_\_\_\_

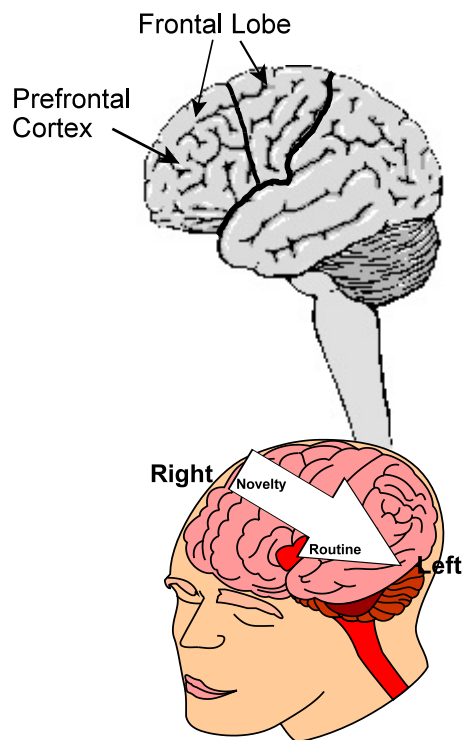
#### B. NOVELTY TO ROUTINE

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Implications: \_\_\_\_\_

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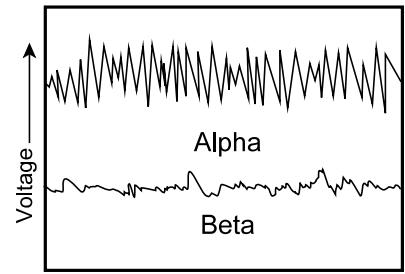
### C. NEURAL EFFICIENCY

**Alpha Waves:** \_\_\_\_\_

**Beta Waves:** \_\_\_\_\_

Research Findings (N. Jausovec, 2000):

- Alpha waves showed that high IQ individuals use less mental effort than average IQ when solving problems requiring convergent and logical thinking.
- Alpha waves showed that high creative individuals used less mental effort than average creative individuals when engaged in creative problem solving.
- Creative individuals showed more cooperation among brain areas than gifted ones, who showed greater decoupling of areas when solving ill-defined problems.



Creativity	High	Creative	Gifted
	Average	Average	Intelligent
		Average	High
		Intelligence	

### Implications:

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Source: Jausovec, N. (2000). Differences in cognitive processes between gifted, intelligent, creative, and average individuals while solving complex problems: An EEG study. *Intelligence*, 28, 213-240.

### What Neuroscience Has Discovered About Gifted Brains:

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**D. TYPES OF DECISIONS FACING THE PREFRONTAL CORTEX**

**Veridical Decisions:**

Solve simple concrete problems: “What is my doctor’s telephone number?” “How much money is left in my savings account?” “When is my nephew’s birthday?”

Each question is clear and the brain searches for a single, indisputable answer. This process is called veridical decision making, or finding the single, true answer.

**Adaptive Decisions:** Other questions might be: “Am I sick enough to see the doctor or should I wait a few days?” “Should I use some of my savings to buy stocks or bonds?” “What gift should I get for my nephew’s birthday?”

These questions are ambiguous and have no intrinsically unique answer. This requires adaptive decision making. One adapts the decision on the basis of context and priorities at the moment. At another time and place, the decision might be different.

Veridical decision making gets us through the day. Adaptive decision making gets us through life.

**E. IMPACT OF PRAISE ON GIFTED STUDENTS:**

Fixed mindset: \_\_\_\_\_

Growth mind-set: \_\_\_\_\_

NOTES: \_\_\_\_\_

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**F. WHY UNDERACHIEVING GIFTED STUDENTS?**

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How are you identifying these students? \_\_\_\_\_

**G. IMPLICATIONS FOR GIFTED EDUCATION:**

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