

Untying the Gordian Knot: A Practical Guide to Understanding the Gifted Child

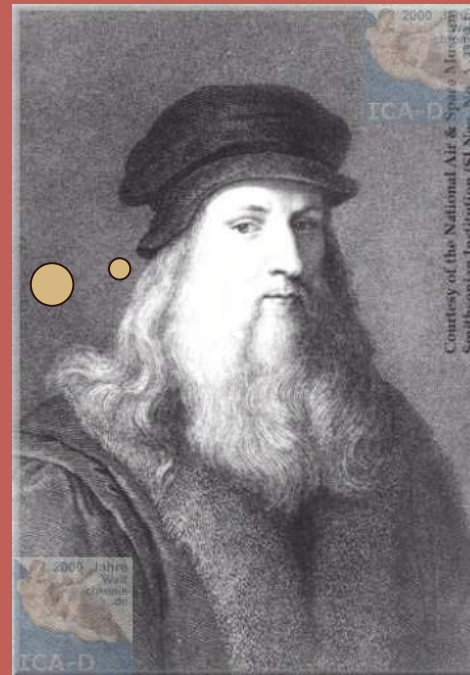
Morgan Appel, Director
Education Department



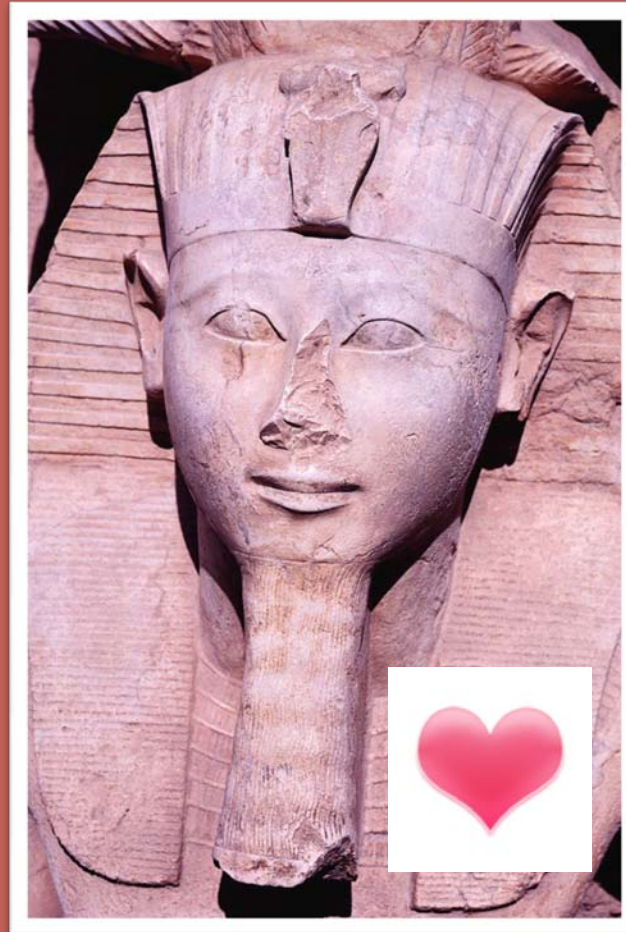
“As every divided kingdom falls, so every mind divided between many studies confounds and saps itself.”

Leonardo da Vinci

Maybe there is something to this integrated learning thing!



■ In ancient Egypt, when humans were preserved through mummification, the brain was discarded—it was viewed as a superfluous organ. Egyptians believed that the heart was the center of all emotion and learning.



Getting to Know Your Brain

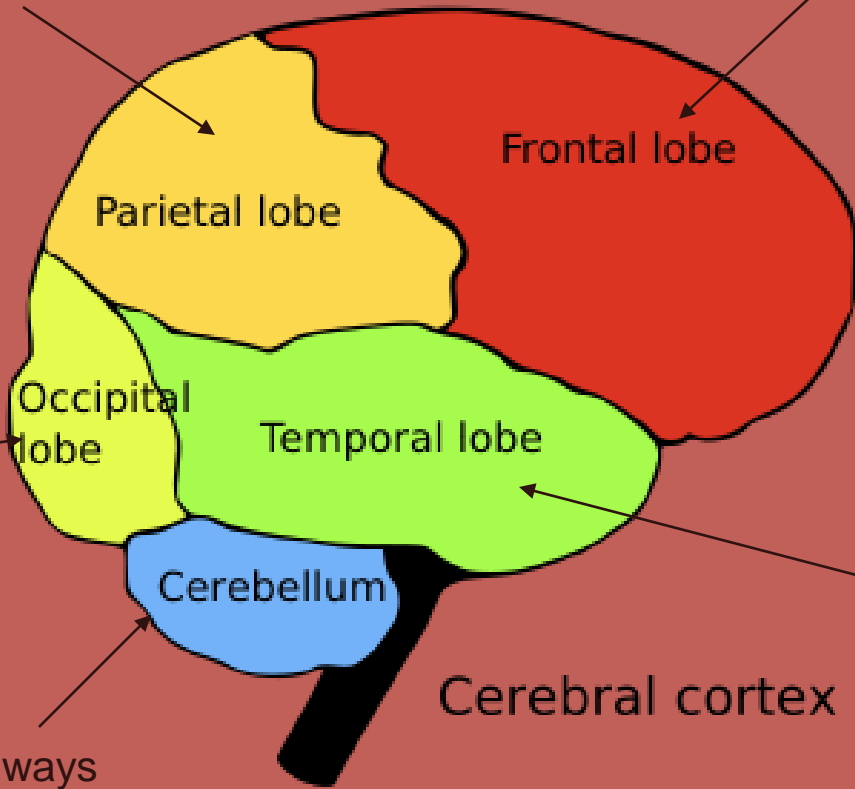
- Despite some evidence to the contrary, **everyone** has a brain!
- The brain learns through **multiple senses and modalities**
- The brain thrives on **process** and **making sense** of new information
- The brain works in **context** when processing new information
- The brain uses **patterns** to make sense of information
- The brain uses **scaffolding** to process new information



Meet the Brain!

Integration of
Sensory information
From different modalities

Impulse Control
Judgment
Language
Working Memory
Motor Function
Socialization
Spontaneity



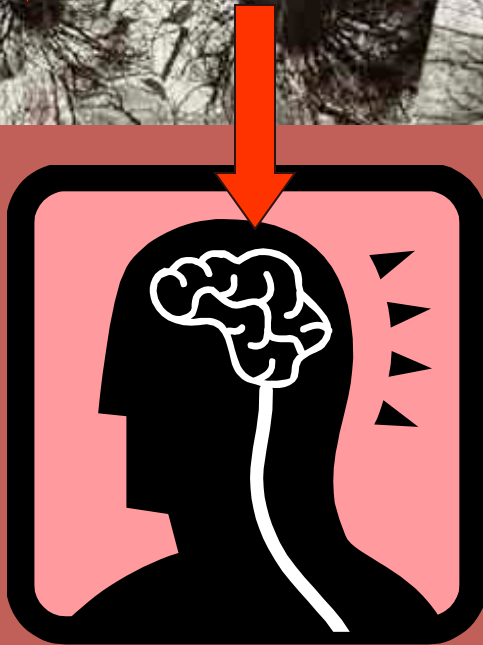
Visual
processing

Motor control
Sensory pathways
Some cognition
'Little Brain'

Auditory processing
Speech
Vision
Semantics



Physiology of Learning



How does the brain learn?

- Over 100 billion nerve endings in the brain that process information
- Active learning creates dendrites/fibers that bridge across them
- As dendrites grow closer, they create synapses (bridges)
- This is the process of learning—the creation of neural networks or pathways
- Information stored in various parts of the brain



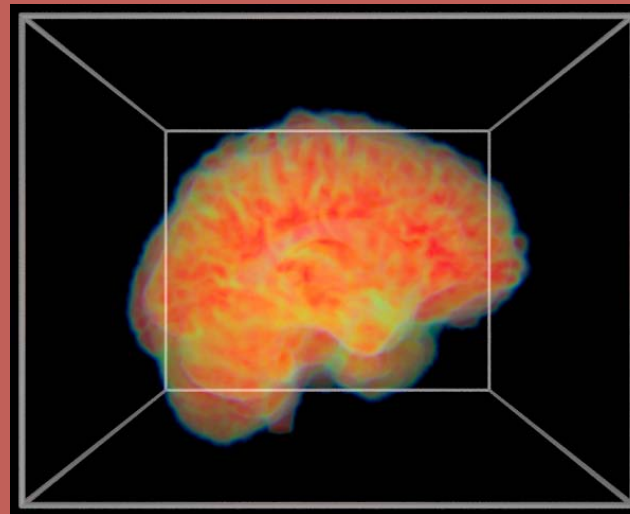
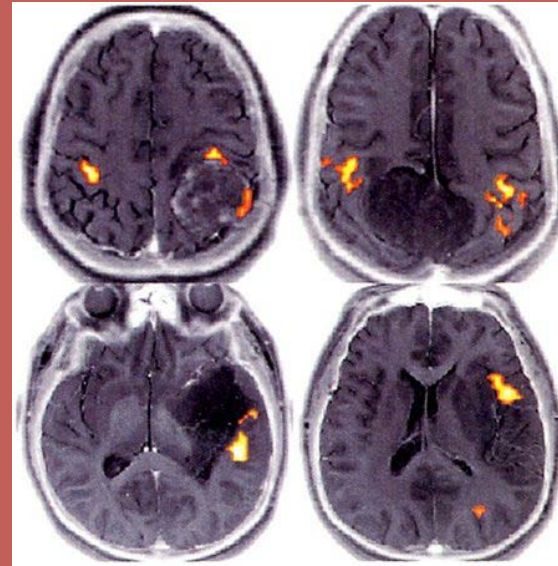
Physiology of Memory

- How does the brain remember?
 - In context, searching for meaning
 - Memory is **reactivation** of pre-existing neural networks and **building upon them** (scaffolding)—new learning
 - The importance of **redundancy and reinforcement** across the curriculum

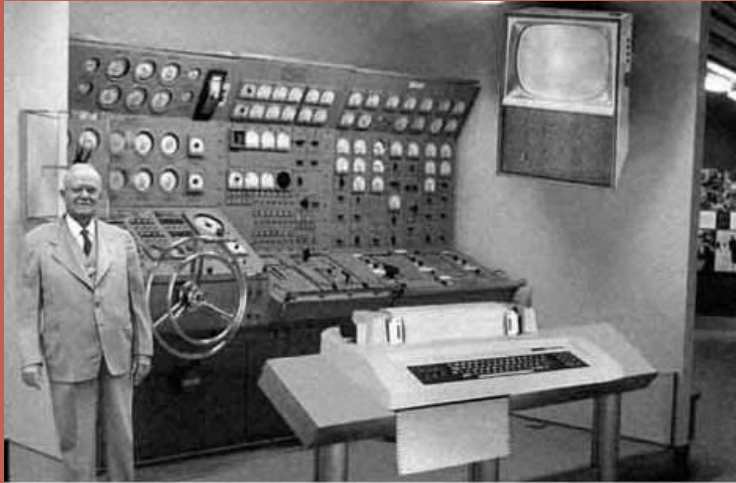


The Gifted Brain

- Functional Magnetic Resonance Imaging (fMRIs) show ‘brain on fire’ in gifted individuals
- No extra parts or rocket fuel—just faster processing
- Gifted individuals are multimodal thinkers
- Great integrators and organizers of multiple senses and modalities
- “Hypersensitive” brains



The Gifted Brain



- Enhanced sensory awareness that can be further cultivated through experience and training
- Both initial impressions and later recollections are unusually vivid
- Increased memory efficiency and capacity
- Multimodality: making connections that others do not

The Gifted Brain

- Associational thinking;
organizational skills;
analytical thinking
- However:
 - ⌘ Sensory, emotional
and memory overload
 - ⌘ Personal
disorganization
 - ⌘ Distractibility
 - ⌘ Mental fatigue
 - ⌘ “Analysis Paralysis”

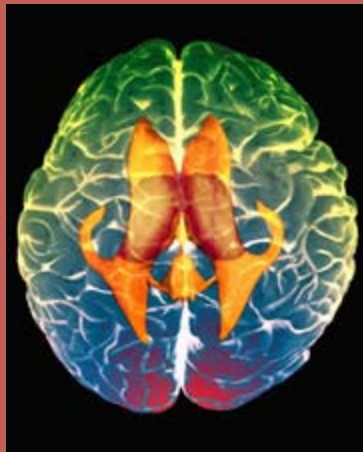
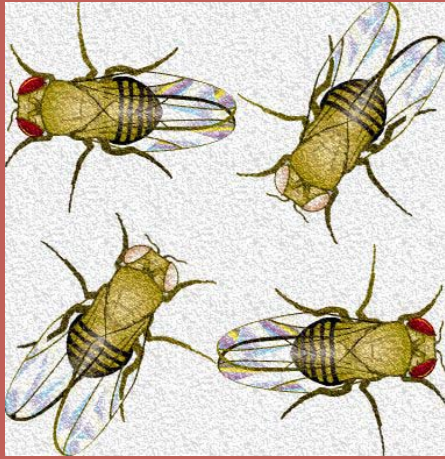


The Gifted Brain

- Gifted pupils learn with less repetition and fewer explanations (may be modality specific)
- Enhanced sensitivity may lead to distractibility and to incorrect assumptions about ADHD
- Distractibility should be balanced with a degree of task persistence (otherwise evaluate and diagnose)



The Gifted Brain



- Incidental learning
- “Cognitive Flypaper”
- Information wealthy—
need resources to
facilitate thinking
processes (the brain
thrives on process) –
not an abundance of
information
- Metacognitive training,
rumination and
reflection
- Practical application



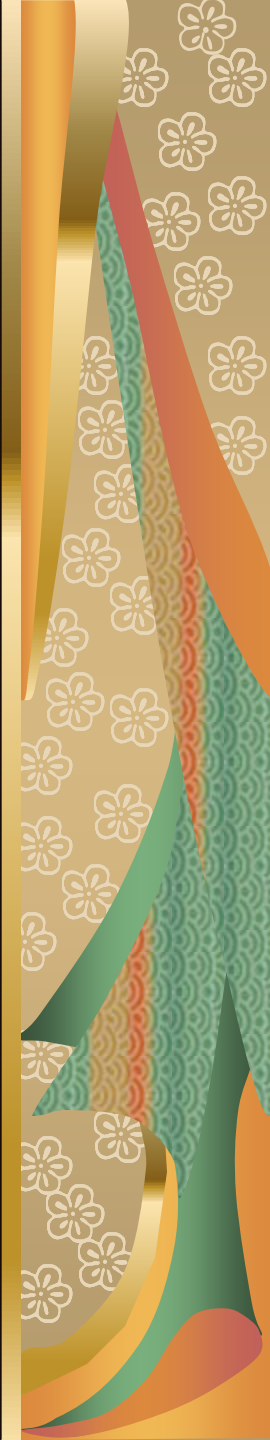
Characteristics of the Gifted: Anything Look Familiar?

- Not a laundry list by any means!
- **Asynchrony** (typical child development = +1 Physical; +1 Cognitive; +1 Social/Emotional)
- Emotional intensity/deep emotional reactions
- Well developed senses of justice and fairness
- Strong sense of empathy, with both children and adults
- Interest in advanced subject matter/materials (can't seem to understand why age peers are not interested)



Characteristics of the Gifted: Anything Look Familiar?

- Mature, highly developed sense of humor (dry wit, satire)—prefers verbal over visual humor
- Enjoys spending time with older children (even young adults)
- Different conceptions and expectations of friendships than their peers
- Strong attachments to a few friends (versus having many friends and acquaintances)
- Social pressures to moderate achievements in front of peers
- Perfectionism



Characteristics of the Gifted: Anything Look Familiar?

- Individual versus group identity
- Less interested in physical competition (but not always true)
- Depression/withdrawal
- Questions authority, skeptical, critical, evaluative
- Overexcitability
- Are keen on aesthetics, and engage in fantasy, role playing
- Underachievement
- Anxiety/hypersensitivity
- Boredom



Characteristics of the Gifted: Anything Look Familiar?

- Have a keen understanding of synthesis of ideas
- Quick to understand underlying principles
- Have a readily accessible mental database of facts and ideas
- Can think abstractly and enjoy complexity
- Can be flexible thinkers and see relationships easily
- Creative and original thinkers
- Enjoy hypotheses, what ifs, etc., and problem solving
- GATE Characteristics v. those of ADD/ADHD



Differentiation (Curriculum and Instruction)

- At the heart of it: **DIFFERENT**
- Organic (**natural**) and Created (**teacher-facilitated**)
- It is an art form—no one best way, but multiple strategies to get there (large canvas requiring many colors and brushes)
- Designed to meet unique affective and cognitive needs: we all have *different* learning profiles!
- *What* it is (core beliefs):
 - Learning styles and profiles for every student are different
 - Active versus passive learning (problem solving, etc)
 - Making meaning versus ‘covering’
- *Where* you see it:
 - **Content** (multiple intake avenues)
 - **Process** (multiple sensemaking opportunities)
 - **Product** (multiple ways to showcase knowledge)



How You Can Help

- Always take complaints about boredom seriously
- Learn the language and serve as a prepared advocate for your child
- Make tangible, real-world connections to what children are learning in school
- Help with organizational and study skills (model personal organization and time management) – many creative and gifted learners never have learned to study as answers have come naturally
- Model “downtime” and strive to mitigate perfectionist and “non-stop processing” tendencies
- Work on pro-social skills and feelings of difference
- Keep in touch with teachers/parents
- Praise process as well as product



How You can Help

- Watch your own expectations and how they may be communicated verbally and non-verbally
- Attend to issues associated with asynchrony (perhaps through provision of a professional mentor)
- Provide encouragement for self reliance and allow for a bit of regression here and there
- Encourage creative game play as a family (Pictionary, etc)
- Discipline requires a certain degree of creativity: rules should be few; reasonable; but enforced
- **LOVE** them—unique quirks and all!



Questions and Discussion



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