The Brain, Social/Emotional Characteristics, Differentiated Instruction and Strategies to Support Your Gifted Child: Food for Thought

Morgan Appel, Director
Education Department

UC San Diego Extension
ALL LEARNING HAS TWO INTERTWINED COMPONENTS:

AFFECTIVE (EMOTIONAL) and COGNITIVE (PROCESS-BASED)

Brain research and physiology show that the greater the degree of emotional engagement, the more likely learning is to transfer from sensory memory to short-term memory to long-term memory.

The importance of SLEEP cannot be emphasized enough! Sleep is when this transference occurs.

Just remember: LEARNING WITH EMOTION IS LEARNING THAT STICKS!!
Meet the Brain!

Integration of Sensory information From different modalities

Visual processing

Motor control Sensory pathways Some cognition ‘Little Brain’

Cerebral cortex

Frontal lobe

Parietal lobe

Occipital lobe

Temporal lobe

Cerebellum

Impulse Control Judgment Language Working Memory Motor Function Socialization Spontaneity

Auditory processing Speech Vision Semantics

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Some cognition ‘Little Brain’
**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
- Gifted individuals are multimodal thinkers
- Great integrators and organizers of multiple senses and modalities
- “Hypersensitive” brains

Source: newhorizons.org
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

Source: newhorizons.org
The Gifted Brain

Associational thinking; organizational skills; analytical thinking

However:
- Sensory, emotional and memory overload
- Personal disorganization
- Distractibility
- Mental fatigue
- “Analysis Paralysis”

Source: newhorizons.org
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).

**Source:** newhorizons.org
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

Source: newhorizons.org
Characteristics of the Gifted: Anything Look Familiar?

- 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
- Isolationism

Characteristics of the Gifted: Anything Look Familiar?

- Individual versus group identity
- Less interested in physical competition (but not always true)
- Depression
- Questions authority
- Overexcitability
- Underachievement
- Anxiety
- Boredom
- Withdrawal
- Hypersensitivity

Characteristics of the Gifted: Anything Look Familiar?

- Have a keen understanding of synthesis of ideas
- Skeptical, critical, evaluative
- Quick to understand underlying principles
- Have a readily accessible mental database of facts and ideas
- Can think abstractly
- Enjoy complexity
- Can be flexible thinkers
- Creative and original thinkers
- Can see relationships easily
- Enjoy hypotheses, what ifs, etc
- Enjoy problem solving
- Are keen on aesthetics
- Engage in fantasy, role playing
- Intellectual curiosity

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 Parents 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
- Praise process as well as product
How Parents 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
- Work on pro-social skills and feelings of difference
- Keep in touch with teachers
- Praise process as well as product
- **LOVE** them—unique quirks and all!
Questions and Discussion
Contact Information

Morgan Appel
Director, Education Department
UC San Diego ESPP
9500 Gilman Drive, MC 0170-N
La Jolla, California 92093-0170
858-964-1064
mappel@ucsd.edu
http://extension.ucsd.edu