



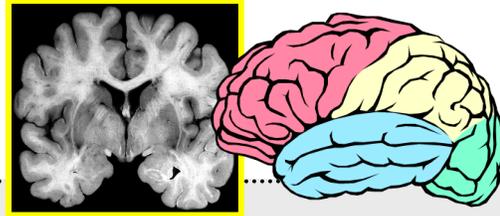
**PROGRAMS**

- 6 Schools
  - 2 Non-Public
  - 4 Charter (Reg-Ed)
  - 3 Group Homes
  - Foster Care
  - OMHC
  - 2 Autism Centers
- Located in Baltimore, MD, Glen Burnie, MD, Laurel, MD and Washington, DC, USA
  - Urban (8.4 million)
  - African American (80%), Hispanic (10%), Caucasian (5%) Students
  - **Majority of Students Live at or Below Poverty Level**
  - Majority of Non-Public School Students Have Had 2+ Failed School Placements



**TRANSFORMATION EDUCATION**

Translates the fields of neuroscience (*brain compatible approaches*) and anthropology (*culture*) to be **practically applied** to child-serving organizations and schools.



**About Your Presenter**



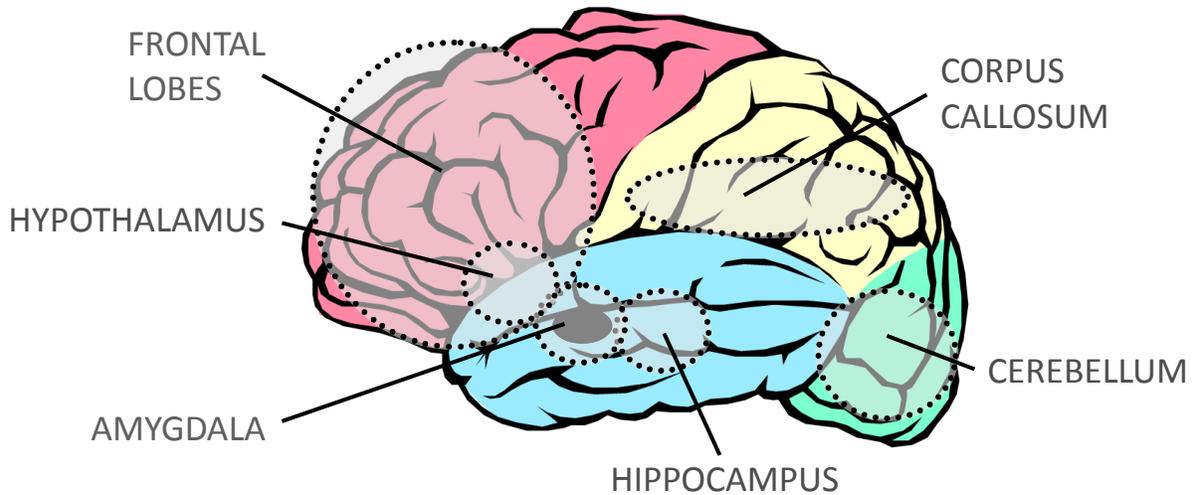
Frank Kros, MSW, JD, is a career child advocate, who has served as a childcare worker, child abuse investigator, children's home administrator, consultant, college professor, attorney, writer and speaker. Frank currently serves as president of The Upside Down Organization, EVP & COO of The Children's Guild and director of NAREN.

Frank presents training workshops nationwide to parents, educators, child-serving professionals and their leaders on various topics including brain-based learning, poverty and the brain, teaching executive function skills, attention-deficit hyperactivity disorder (ADHD), neuroscience of the teenage brain, and leadership and the brain. Frank has presented his workshops at national education, social work and human services conferences, and Frank was awarded a Maryland Governor's Citation

for his speaking efforts. In addition to lecturing nationwide, he co-authored two books: *Creating the Upside Down Organization: Transforming Staff to Save Troubled Children* and *The Upside Down Organization: Reinventing Group Care*. Frank earned a bachelor's degree from Creighton University, a master's degree in social work from the University of Nebraska-Omaha and a law degree, *magna cum laude*, from Notre Dame Law School.

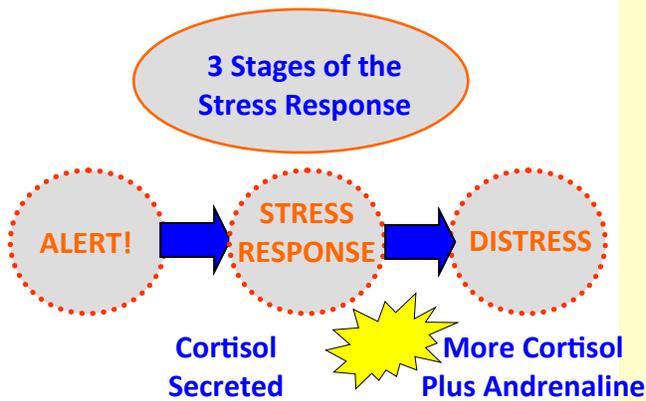
**NOTES**

# Basic Brain Anatomy



## The Brain Made Ridiculously Simple!

<b>HIPPOCAMPUS</b> The Mail Carrier	<b>AMYGDALA</b> The Palace Guard	<b>HYPOTHALAMUS</b> Thermostat	<b>CORPUS CALLOSUM</b> Brooklyn Bridge	<b>CEREBELLUM</b> Mover & Shaker	<b>FRONTAL LOBES</b> Learning to Drive
					

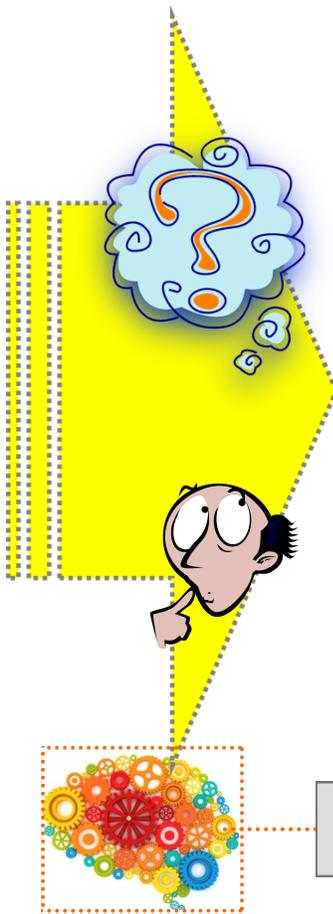


### What EF Problems Can Look Like:

- Laziness
- Lack of Motivation
- Incapable of Being Prompt
- Chronically Unprepared
- Disorganized
- Forgetful
- "You Have To Tell Them Everything"

### WHAT to DO?

Use your language to CUE the use of Executive Function Skills and avoid "stimulating the Amygdala!"



## TODAY'S ITINERARY

1. WHAT is Executive Function?
2. WHERE Do Executive Function Skills Happen in the Brain?
3. WHY do Executive Function Skills matter?
4. WHAT are some important Executive Function Skills?
5. HOW do I teach these skills?

### 1. WHAT is Executive Function?

“The Executive Functions are a set of processes that all have to do with managing oneself and one’s resources in order to achieve a goal. It is an umbrella term for the neurologically-based skills involving mental control and self regulation.”

— Kahan and Dietzel (2008)

#### WEBSTER'S DEFINITION

**Executive:**

Of or responsible for the carrying out of plans or policies.

**Function:**

The special purpose for which something exists.

**Skill:**

Proficiency, ability or expertise.

### Executive Function Skills

“Brain-based skills required for humans to *execute*, or perform, tasks.”  
(Dawson and Guare 2009)

#### UDO's Definition:

A collection of highly developed cognitive abilities that empower humans to carry out complex sets of tasks including goal setting, planning, organization, impulse control, behavior selection, emotional regulation, critical thinking and decision making.



## 2. WHERE do Executive Function Skills Happen in the Brain?

### Prefrontal Cortex

Mediates conflicting thoughts, makes choices between right and wrong, predicts future events and governs social control.

### Anterior Cingulate Gyrus

Controls which bits of sensory information are granted entry into the frontal lobe impacting attention, memory, motor responses, motivation and responses to painful stimuli.

### Orbitofrontal Cortex

Part of the brain that makes associations, does error correction and inhibits behavior.

### WHERE do Executive Function Skills Happen in the Brain?

#### MODULATES EMOTION

1. Processes Fear and Excitement
2. Decreases the Overwhelm
3. Responds to Survival
4. Decreases Noise

#### AROUSAL CENTER

1. Deadlines
2. Actions
3. Tactics

#### ATTENTION NETWORK

#### REWARD CENTER

1. Responds to Bonding
2. Responds to Challenges
3. Seeks High Stimulus

#### EXECUTIVE SECRETARY

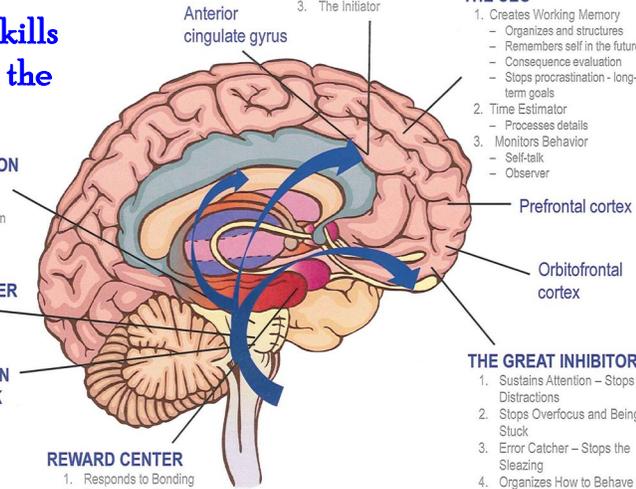
1. Gross Prioritizer
2. Directs Attention
3. The Initiator

#### THE CEO

1. Creates Working Memory
  - Organizes and structures
  - Remembers self in the future
  - Consequence evaluation
  - Stops procrastination - long-term goals
2. Time Estimator
  - Processes details
3. Monitors Behavior
  - Self-talk
  - Observer

#### THE GREAT INHIBITOR

1. Sustains Attention - Stops Distractions
2. Stops Overfocus and Being Stuck
3. Error Catcher - Stops the Sleazing
4. Organizes How to Behave



NOTES...



### 3. WHY Do Executive Function Skills Matter?



#### “Termites” (1921)

Lewis Terman – Psychology professor, Stanford University

- Created the Stanford-Binet Intelligence Test
- Henry Cowell was a young boy raised in poverty and chaos. Unschooled since age 7 and worked as a janitor.
- Would sneak away from his job and play the school piano. His music was beautiful.
- Terman tested Henry and found his IQ above 140 – near genius level.

*“There is nothing about an individual as important as his IQ, except possibly his morals.”*

— Lewis Terman

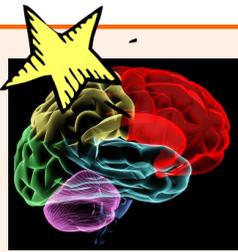


#### The TERMITES

- Beginning in 1921, Terman tested elementary students in California.
- He identified 1,470 children whose IQ's averaged over 140 and ranged as high as 200!
- This group of young geniuses came to be known as the “Termites.”
- Terman closely followed these geniuses for the next 35 years.

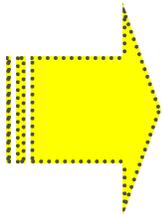
By the time the “termites” reached adulthood, out of 1,470 genius-level children (99<sup>th</sup> percentile of the 99<sup>th</sup> percentile):

- Only 2 Superior Court Judges
- Only 1 Municipal Court Judge
- Only 2 California State Legislators
- No Nobel Prize Winners
- Majority had ordinary careers
- Surprising number ended up failures  
*(nearly a third of the males...)*



Terman's CORRECTION...

“Intellect and achievement are far from perfectly correlated.”  
— Terman



So, if IQ is not the primary determinant of achievement, what is?

PRACTICAL INTELLIGENCE

# The Stanford Marshmallow Experiment



(1989) Walter Mischel, Stanford University

- 4 year old children tested in the 1960s
- Taken into a room one at a time; room had a one-way mirror
- The researcher showed the child a marshmallow
- The researcher told the child he had to leave and:
  - The child could have marshmallow right then; or
  - The child could wait until the researcher returned from his errand and then have 2 marshmallows.
- One marshmallow was left on a plate on the table in front of them.



Some children ate the marshmallow immediately. Others waited up to twenty minutes for the researcher to return.

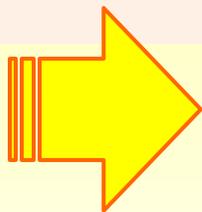


In a follow-up study, the children were tested and their parents surveyed ...

## RESULTS

- Parents rated the children who waited “better adjusted” and “more dependable.”
- On the scholastic aptitude test, the more impulsive group scored an average of 524 verbal and 528 math.
  - The “children who waited” group scored 610 verbal and 652 math.

A difference of 210 points predicted on the basis of eating a marshmallow at 4 years of age.



How big is a 210 point difference?

- As large as the average differences between that of economically advantaged versus disadvantaged children.
- Larger than the difference between children from families with graduate degrees versus children whose parents did not finish high school.
- Twice as good as a predictor as IQ.
- Poor impulse control is also a predictor of later delinquency than is IQ.

(Block 1995)

## WHY Executive Function Skills Matter

Putting it all together ...

Children with strong Executive Function Skills:

- Set short-term and long-term goals
- Believe they will succeed
- Persist under pressure
- Visualize a positive future
- Search-out successful strategies and resources
- Possess good social skills
- Are independent
- Manage time effectively
- Are flexible when situations change
- Know how to learn and how they learn
- Evaluate themselves



(Robin Fogarty, [12 Brain/Mind Learning Resources in Action](#))

## IQ vs. Executive Function

- There is only a moderate correlation between IQ and Executive Function Skills.
- High IQ students can have below average impulse control, planning and organizational skills.
- Lower IQ students can have significant strengths in learning routines and managing daily tasks.

**BOTTOM  
LINE**

**Strong Executive Function Skills are a more accurate predictor of success than IQ.**

## Marshmallow Test Redux



## 4. WHAT Are Some Important Executive Function Skills?

### Two Dimensions of Executive Function Skills

COGNITION (EFS that require THINKING)	BEHAVIOR (EFS that require DOING)
<b>"TWOMP"</b>	<b>"FESTIG"</b>
<u>T</u> ime Management	<u>F</u> lexibility
<u>W</u> orking Memory	<u>E</u> motional Control
<u>O</u> rganization	<u>S</u> ustained Attention
<u>M</u> etacognition	<u>T</u> ask Initiation
<u>P</u> lanning/Prioritization	<u>I</u> mpulse Control
	<u>G</u> oal-Directed Persistence

### Skills That Require Thinking ~ TWOMP

Executive Skill	Definition	Example
<b>Time Management</b>	The capacity to estimate how much time one has, how to allocate it, and how to stay within time limits and deadlines. Also involves a sense that time is important.	A young child can complete a short job within a time limit set by an adult. A teenager can establish a schedule to meet task deadlines.
<b>Working Memory</b>	The ability to hold information in memory while performing complex tasks. It incorporates the ability to draw on past learning or experience to apply to the situation at hand or to project into the future.	A young child can hold in mind and follow one- or two-step directions. The middle school child can remember the expectations of multiple teachers.
<b>Organization</b>	The ability to create and maintain systems to keep track of information or materials.	A young child can, with a reminder, put toys in a designated place. A teenager can organize and locate sports equipment.
<b>Metacognition</b>	The ability to stand back and take a birds-eye view of yourself in a situation, to observe how you problem solve. It also includes self-evaluative skills (e.g., asking yourself, "How am I doing?" or "How did I do?").	A young child can change behavior in response to feedback from an adult. A teenager can monitor and critique her performance and improve it by observing others who are more skilled.

## Skills That Require Thinking - TWOMP (continued)

Executive Skill	Definition	Example
<b>Planning/ Prioritization</b>	The ability to create a roadmap to reach a goal or to complete a task. It also involves being able to make decisions about what's important to focus on and what's not important.	A young child, with coaching, can think of options to settle a peer conflict. A teenager can formulate a plan to get a job.

## Skills That Require Doing - FESTIG

Executive Skill	Definition	Example
<b>Flexibility</b>	The ability to revise plans in the face of obstacles, setbacks, new information, or mistakes. It relates to an adaptability to changing conditions.	A young child can adjust to a change in plans without major distress. A teenager can accept an alternative such as a different job when the first choice is not available.
<b>Emotional Control</b>	The ability to manage emotions to achieve goals, complete tasks, or control and direct behavior.	A young child can change behavior in response to feedback from an adult. A teenager can monitor and critique her performance and improve it by observing others who are more skilled.
<b>Sustained Attention</b>	The capacity to keep paying attention to a situation or task in spite of distractibility, fatigue, or boredom.	Completing a 5-minute chore with occasional supervision is an example of sustained attention in the younger child. A teenager can pay attention to homework, with short breaks, for 1 to 2 hours.
<b>Task Initiation</b>	The ability to begin projects without undue procrastination in an efficient or timely fashion.	A young child is able to start a chore or assignment right after instructions are given. A teenager does not wait until the last minute to begin a project.
<b>Impulse Control</b>	The capacity to think before you act - this ability to resist the urge to say or do something allows your child the time to evaluate a situation and how his or her behavior might impact it.	A young child can wait for a short period without being disruptive. An adolescence can accept a referee's call without an argument.
<b>Goal-Directed Persistence</b>	The capacity to have a goal, follow through to the completion of the goal, and not be put off by or distracted by competing interests.	A first grader can complete a job to get recess. A teenager can earn and save money over time to buy something of importance.

NOTES

# LET's REVIEW

## Executive Function Skills of THINKING

SKILL	DESCRIPTION
T _____	
W _____	
O _____	
M _____	
P _____ / _____	

## Executive Function Skills of DOING

SKILL	DESCRIPTION
F _____	
E _____	
S _____	
T _____	
I _____	
G _____	

NOTES



## 5. HOW Do I Teach These Skills?

### Teaching Executive Function Skills:

- Know Thyself
- Language Matters
- The “Take 5” Approach
- Boosting Thinking Skills
- Support Organizational Skills
- Reviewing and Assessing

Development of Executive Function Skills is a marathon, not a sprint!



### Assessment of Executive Function Skills

#### TAKE NOTE:

There are multiple tests for each Executive Function skill.

- Rule-out conditions that may look like Executive Function (Learning Disability, Language Disability, Social-Emotional Disorders).
- Identify which Executive Function Skills are problematic.
- Determine impact on daily life and put Executive Function profile in content of the whole student.

### KNOW THYSELF

Discover your own Executive Function Profile and compare it to that of your students.

### BRAIN RULE: What We Say Matters...

Not only to the development of the mindset our children have about intelligence, but to how fast and how deep the executive system of the brain develops.

*(those all important frontal lobes!)*



## EXECUTIVE FUNCTION ADULT PROMPTS

### Negative and Vague (AMYGDALA)

*"How do you expect to find your keys without a plan?"*

### Positive and Specific (FRONTAL LOBES)

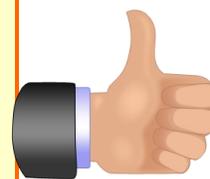
*"Let's make a plan for where to search for your lost keys so we are sure not to miss anywhere or look in the same place many times."*



## Executive Function Prompts

"Self Regulation Executive Function Descriptions With Examples of Teacher Prompts," George McCloskey, PhD, Philadelphia College of Osteopathic Medicine.

A complete list of the Executive Function Prompts can be downloaded at The Upside Down Organization website:



**WHAT GETS REMEMBERED?**

**SENSE and MEANING**

1. **Survival Value Info/ Experiences**
2. **Learning that Makes Sense**  
*Can the child understand the item on the basis of past experiences?*
3. **Learning that Has Meaning**  
*Is the information relevant to the child?*



**Incorporate These Two Essential Questions into Every Teaching Moment:**

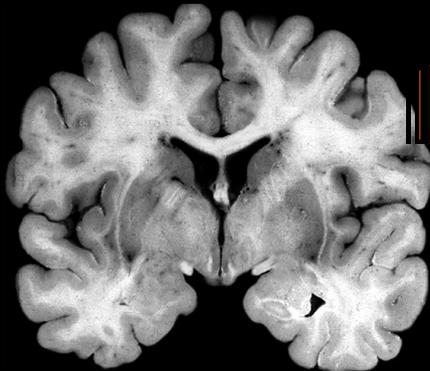
1. How does this relate to what they already know?
2. How might they use this in the future?



Using Language to Enhance Behavior, Improve Learning and Build Hope

Be specific | Focus on action | Avoid abstract terms without a concrete example ("Responsibility," "Respect," "Appropriate") | If using abstract terms, always pair with a specific behavior.

**TAKE HOME MESSAGE**



**LANGUAGE**  
Changes Lives!

- The "Take 5" Approach
- Add-on (Working Memory)
- The Card Shuffle (Sequencing)
- The Ball Toss
- What's Different
- Boost Thinking Skills
- The Survival Game
- Word Sacks
- Metaphor Bags

Positive Everyday Routines  
Ylvisaker & Feeney (1998)

**EVCP**

- Environmental Changes and Supports
- Visual Tools
- Chunking and Sequencing
- Prompting

- **GOAL** – What do I want to accomplish?
- **PLAN** – How will I accomplish my goal?
- **DO** – Try my plan behaviorally
- **REVIEW** – Evaluate its effectiveness and generate possible alternative solutions

Positive  
Everyday  
Routines

- GOAL: \_\_\_\_\_  
\_\_\_\_\_
- PLAN: \_\_\_\_\_  
\_\_\_\_\_
- DO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- REVIEW: \_\_\_\_\_  
\_\_\_\_\_
- ANALYSIS: \_\_\_\_\_  
\_\_\_\_\_

*Ylvisaker & Feeney (1998)*

CREATING AN EXECUTIVE  
FUNCTION PLAN

**STEP 1: ANALYSIS**

1. What is the specific behavior you want to see changed or improved?
2. What Executive Function Skill does the student need to change or improve?

**STEP 2: DESIGN the PLAN USING E, V, C, P**

3. What Environmental changes will you make to support the new behavior? (location, equipment, manipulatives, etc.)
4. What Visual tools will you use to support the new behavior?
5. How will you Chunk or sequence the new behavior?
6. How will you Prompt the new behavior?

**STEP 3: IMPLEMENT and SUPPORT the PLAN**

7. Who will be responsible for implementing the plan?
8. How will the new behavior be rewarded and reinforced?

NOTES:

