The New IQ?:
Understanding and Teaching Executive Function Skills In and Out the Classroom

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Time Notice

This session will end at approximately 3:30pm. Consequently, there will not be a formal break (take breaks as you need to!)
Daily Brain Test

www.GREATPOTENTIALPRESS.com
Stroop Test

• You will time yourself on this test.
• Read the words from left to right, top to bottom.
• Read at your normal pace.
• Be thorough, don’t skip any words.
• Stick with a word until you have read it completely.
Stroop Test Panel 1

RED  GREEN  BLUE  YELLOW  PINK
ORANGE  BLUE  GREEN  BLUE  WHITE
GREEN  YELLOW  ORANGE  BLUE  WHITE
BROWN  RED  BLUE  YELLOW  GREEN
PINK  YELLOW  GREEN  BLUE  RED
# Stroop Test Panel 2

<table>
<thead>
<tr>
<th>RED</th>
<th>GREEN</th>
<th>BLUE</th>
<th>YELLOW</th>
<th>PINK</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORANGE</td>
<td>BLUE</td>
<td>GREEN</td>
<td>BLUE</td>
<td>WHITE</td>
</tr>
<tr>
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</tr>
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<td>BROWN</td>
<td>RED</td>
<td>BLUE</td>
<td>YELLOW</td>
<td>GREEN</td>
</tr>
<tr>
<td>PINK</td>
<td>YELLOW</td>
<td>GREEN</td>
<td>BLUE</td>
<td>RED</td>
</tr>
</tbody>
</table>
The Stroop Effect

• John Ridley Stroop first reported this effect in his Ph.D. thesis published in 1935, commonly known as "Stroop Effect":

• When the meaning of a word and its color are congruent, such as the word "BLUE" written in blue color, it is easy to recognize the actual color of the word.

• But when the meaning of the word is incongruent with the color, such as "BLUE" written in red color, it creates a conflict between the color and the word's meaning.

• In order to name the color correctly, the two processes compete for the final decision-making process.

• The brain has to inhibit the faster/stronger word-recognition process in order to allow the color-recognition to win in the final response.

• This inhibition requires "selective attention" (attentional focus) to inhibit the competing conflicting process. These are executive functions.
Brain Quiz!

T or F?

According to the American Test Anxiety Association, 1 of every 5 students in your school suffers from some form of test anxiety.
Brain Quiz! Answer

True!

The AMTAA estimates that as many as 20% of students have severe test anxiety and another 18% likely suffer from moderate test anxiety.

http://www.amtaa.org
Brain Quiz!

T or F?

On a typical school day, the average student in your school spends **6 hours** behind a screen for entertainment (not for homework or lessons).
Brain Quiz! Answer

False!

According to the Kaiser Family Foundation, the average child ages 8-18 spends more than seven-and-a-half hours per day behind a screen for entertainment—either a TV, computer, iPad, video game or phone.

http://kff.org/other/event/generation-m2-media-in-the-lives-of/
Brain Quiz!

T or F?

Children as young as preschool age can start to develop homework habits.
In preschool, and especially in the summer before kindergarten, engaging children in sit-down activities like coloring a book page at the same time each day can develop the rhythm of having a set homework time.

Brain Quiz!

T or F?

Children are born with most of their executive function skills.
Brain Quiz! Answer

False!

Children are not born with executive function skills—they are born with the capacity to develop them. The full range of executive function abilities continues to grow and mature through early adulthood. The quality of interactions and experiences a child has in the family and community plays a vital role in EF skill development.

Executive Function: Skills for Life and Learning (2016) Center on the Developing Child, Harvard University
http://developingchild.harvard.edu/science/key-concepts/executive-function/
Train Whistle!

Because a child’s environmental experience plays a critical role in the development of executive function skills and the experience of poverty limits many environmental experiences, it is common for impoverished children to have more executive function deficits compared to non-impoverished peers.
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 to students and develop my own skills?
1. **WHAT** is Executive Function?
Executive Function Skills

Webster’s Dictionary

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)
Executive Function Skills

“The set of abilities that allows you to select behavior that’s appropriate to the situation, inhibit inappropriate behavior, and focus on the task at hand despite distractions.”

(Aamodt and Wang 2008)
Executive Function Skills

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.
Executive Function is Like...

Captain James T. Kirk
2. WHERE Do Executive Function Skills Happen in the Brain?
**Where Executive Function Skills Happen**

**Attention Network**
1. Responds to Bonding
2. Responds to Challenges
3. Seeks High Stimulus

**REWARD CENTER**
1. Responds to Bonding
2. Responds to Challenges
3. Seeks High Stimulus

**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

**AROUSAL CENTER**
1. Deadlines
2. Actions
3. Tactics

**EXECUTIVE SECRETARY**
1. Gross Prioritizer
2. Directs Attention
3. The Initiator

**THE CEO**
2. Time Estimator – Processes details
3. Monitors Behavior – Self-talk – Observer

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

**Anterior cingulate gyrus**

**Prefrontal cortex**

**Orbitofrontal cortex**

**Where Executive Function Skills Happen**

**EXECUTIVE SECRETARY**
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**AROUSAL CENTER**
1. Deadlines
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**ATTENTION NETWORK**
EF Development

• The matrix provided in the workbook (pg. 9-10) offers some developmental guidelines.
• The key developmental observation is whether the child uses EF skills on par with her/his same-age peers.
EF Development: Gender

• Gender may have a significant impact on EF skill development.
• Through elementary, middle and high school, girls possess some neurological advantages.
# Anatomical Differences

<table>
<thead>
<tr>
<th>Brain Organ</th>
<th>Difference</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corpus Callosum</td>
<td>20%&gt; in Girls</td>
<td>Use Whole Brain, “Toggle” and Language</td>
</tr>
<tr>
<td>Amygdala</td>
<td>Larger in Boys</td>
<td>More Aggressive Predisposition</td>
</tr>
<tr>
<td>Hippocampus</td>
<td>Larger in Girls</td>
<td>Enhanced Memory Capacity</td>
</tr>
</tbody>
</table>
## Anatomical Differences

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<tbody>
<tr>
<td>Frontal Lobes</td>
<td>More Active, Matures Faster in Girls</td>
<td>Girls Predisposed for Better Impulse Control, Judgment and Decision Making</td>
</tr>
<tr>
<td>Temporal Lobes</td>
<td>12%&gt; in Girls</td>
<td>Faster Language Acquisition and Skilled Use</td>
</tr>
<tr>
<td>Hypothalamus</td>
<td>Denser in Boys</td>
<td>More Consistent Sex Drive</td>
</tr>
</tbody>
</table>
Do These Differences Matter?
For Every 100 Girls:

- Enrolled in kindergarten, there are 116 boys
- Enrolled in high school, there are 100 boys
- Who graduate high school there are 96 boys
- Enrolled in college, there are 77 men
- Who earn a masters degree there are 62 men
For every 100 girls suspended from public elementary and secondary schools 250 boys are suspended.

http://nces.ed.gov/programs/digest/d04/tables/dt04_144.asp

For every 100 girls expelled from public elementary and secondary schools 335 boys are expelled.

http://nces.ed.gov/programs/digest/d04/tables/dt04_144.asp
More Differences

• For every 100 girls diagnosed with a special education disability 217 boys are diagnosed with a special education disability.
• For every 100 girls diagnosed with a learning disability 276 boys are diagnosed with a learning disability.
• For every 100 girls diagnosed with emotional disturbance 324 boys are diagnosed with emotional disturbance.
Boys are approximately 3x more likely to be diagnosed with ADHD than girls.

(4% of girls/11% of boys, www.cdc.gov)
Struggling Boys

What is different that is causing so many more boys to be unsuccessful in school?
3. WHY Do Executive Function Skills Matter?
(The New IQ?)
“Bill is probably the brightest, most creative student in the classroom. He shines during discussions and his insights into what we are learning are keener than his classmates. But Bill does not turn in his homework consistently, fails to prepare for tests and is always late with long-term projects. If he would only develop a little motivation and not be so lazy, he would be a truly exceptional student.”

— Amanda B., Sixth Grade Teacher
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 EF Problems Can Easily Be Confused With...

- ADHD (Both Hyperactive and Inattentive types)
- Anxiety Disorders
- Concussion
- ODD
- Substance Abuse
A Research Expedition: Termites, Marshmallows, Cookies and Radishes
“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.
The Termites

100 = Average
>70 = Developmentally Disabled
150 = Albert Einstein
The Termites

• Beginning in 1921, Terman tested 250,000 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.
The Termites

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

— Lewis Terman

Terman believed that his termites were destined to be the future of the United States. But not everyone agreed…

“Knowledge of a boy’s IQ is of little help if you are faced with a formful of clever boys.”

— Liam Hudson, British Psychologist
Terman’s Hypothesis

Termites would become:

• President(s), U.S. Senators and Representatives
• Nobel Prize Winners
• Supreme Court Judges
• World and National Leaders
Terman’s Error

By the time the “termites” reached adulthood, out of 1,470 genius-level children (99th percentile of the 99th 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?
The Stanford Marshmallow Experiment

(1989) Walter Michel, 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 Stanford Marshmallow Experiment

- 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.
The Stanford Marshmallow Experiment

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

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

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.
The Stanford Marshmallow Experiment

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?
The Stanford Marshmallow Experiment

- 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)
This Experiment Still Fascinates...
Putting it all together …

Students with strong EF 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
Why Executive Function Skills Matter

• Students with strong EF Skills:
  – 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.

Strong Executive Function Skills are a more accurate predictor of academic success than IQ! They are the New IQ…
Radishes and Chocolate Chip Cookies

Did the two groups show the same goal-directed persistence in phase II of the experiment?

*(Why or why not?)*
Key Idea

You and your students have a limited amount of goal-directed persistence (*focus, concentration, task initiation, impulse control*) which is greatly influenced by fitness level, sleep, nutrition and stress.
5. **WHAT are Some Important Executive Function Skills?**
What Are Some Important Executive Function Skills?

• Highly debatable

• Executive Function Skills never operate in isolation; they overlap with motor, language, memory and other cognitive skills. (Kahn and Dietzel, 2008)

• Different names are frequently used for the same Executive Function Skills, depending on the research/writer.

Having said all that, UDO likes Dawson’s and Guare’s model…
Two Dimensions of Executive Function Skills

<table>
<thead>
<tr>
<th>COGNITION (EFS that require THINKING)</th>
<th>BEHAVIOR (EFS that require DOING)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“TWOMP”</td>
<td>“FESTIG”</td>
</tr>
<tr>
<td>Time Management</td>
<td>Flexibility</td>
</tr>
<tr>
<td>Working Memory</td>
<td>Emotional Control</td>
</tr>
<tr>
<td>Organization</td>
<td>Sustained Attention</td>
</tr>
<tr>
<td>Metacognition</td>
<td>Task Initiation</td>
</tr>
<tr>
<td>Planning/Prioritization</td>
<td>Impulse Control</td>
</tr>
<tr>
<td></td>
<td>Goal-Directed Persistence</td>
</tr>
</tbody>
</table>
The Vocabulary Dance

• When I say “Go”, form groups of 6-7.
• Take your workbook with you.
• Create a set of movements (“dance”) to help you remember the EF skills listed in your workbook.
• Practice your dance.
• Share your dance.
### Executive Functions: Cognition Skills

#### “Skills That Require Thinking”
#### “TWOMP”

<table>
<thead>
<tr>
<th>Executive Skill</th>
<th>Definition</th>
<th>Example</th>
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<tr>
<td><strong>Time Management</strong></td>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td><strong>Working Memory</strong></td>
<td>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.</td>
<td>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.</td>
</tr>
</tbody>
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## Executive Functions: Cognition Skills

### “Skills That Require Thinking”
### “TWOMP”

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<tr>
<td><strong>Organization</strong></td>
<td>The ability to create and maintain systems to keep track of information or materials</td>
<td>A young child can, with a reminder, put toys in a designated place. A teenager can organize and locate sports equipment.</td>
</tr>
<tr>
<td><strong>Metacognition</strong></td>
<td>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?”).</td>
<td>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.</td>
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# Executive Functions: Cognition Skills

“Skills That Require Thinking”
“TWOMP”

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<tr>
<td>Planning/Prioritization</td>
<td>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.</td>
<td>A young child, with coaching, can think of options to settle a peer conflict. A teenager can formulate a plan to get a job.</td>
</tr>
</tbody>
</table>
## Executive Functions: Behavior Skills

### “Skills That Require Doing”
### “FESTIG”

<table>
<thead>
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<th>Executive Skill</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>The ability to revise plans in the face of obstacles, setbacks, new information, or mistakes. It relates to an adaptability to changing conditions.</td>
<td>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.</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>The ability to manage emotions to achieve goals, complete tasks, or control and direct behavior.</td>
<td>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.</td>
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### Executive Functions: Behavior Skills

**“Skills That Require Doing”**  
**“FESTIG”**

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</thead>
<tbody>
<tr>
<td><strong>Sustained Attention</strong></td>
<td>The capacity to keep paying attention to a situation or task in spite of distractibility, fatigue, or boredom.</td>
<td>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.</td>
</tr>
<tr>
<td><strong>Task Initiation</strong></td>
<td>The ability to begin projects without undue procrastination in an efficient or timely fashion.</td>
<td>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.</td>
</tr>
</tbody>
</table>
# Executive Functions: Behavior Skills

"Skills That Require Doing"
"FESTIG"

<table>
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</thead>
<tbody>
<tr>
<td>Impulse Control</td>
<td>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.</td>
<td>A young child can wait for a short period without being disruptive. An adolescence can accept a referee’s call without an argument.</td>
</tr>
<tr>
<td>Goal-Directed Persistence</td>
<td>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.</td>
<td>A first grader can complete a job to get recess. A teenager can earn and save money over time to buy something of importance.</td>
</tr>
</tbody>
</table>
6. **HOW Do I Teach Executive Function Skills?**
Best Resources

Executive Skills in Children and Adolescents
A Practical Guide to Assessment and Intervention
SECOND EDITION
PEG DAWSON and RICHARD GUARE

Late, Lost, and Unprepared
A Parents’ Guide to Helping Children with Executive Functioning
Joyce Cooper-Kaza, Ph.D. & Laurie Dietz, Ph.D.

THE Upside NMOD organization
Best Resources

SMART but SCATTERED

The Revolutionary "Executive Skills" Approach to Helping Kids Reach Their Potential

Boost Any Child's Ability to:
- Get Organized
- Resist Impulses
- Stay Focused
- Use Time Wisely
- Plan Ahead
- Follow Through on Tasks
- Learn from Mistakes
- Stay in Control of Emotions
- Solve Problems Independently
- Be Resourceful

Peg Dawson, EdD, and Richard Guare, PhD

SMART but SCATTERED TEENS

The "Executive Skills" Program for Helping Teens Reach Their Potential

Boost Any Teen's Ability to:
- Resolve conflict
- Assess risks
- Control emotions
- Work Independently
- Pay attention
- Get organized
- Resist peer pressure
- Follow through
- Manage a schedule
- Plan ahead

Richard Guare, PhD, Peg Dawson, EdD, and Colin Guare

THE UPSIDE NMOD ORGANIZATION
Teaching EF Skills

1. Know Thyself
2. Language Matters
3. The “Take 5” Approach
4. Boosting Thinking Skills
5. Support Organizational Skills
6. Reviewing and Assessing
But First...

I believe in the power of executive function so much, I put together this matrix for you. If you want it, email me at kros@upsidedownorganization.org by May 31st. In the subject line, type “Matrix.”
# How Do I Teach EF Skills?

<table>
<thead>
<tr>
<th>SKILL (THINKING)</th>
<th>METHODS OF TEACHING THIS SKILL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME MANAGEMENT</td>
<td>General Strategies to Build Skill</td>
</tr>
<tr>
<td></td>
<td>• Without going overboard, maintain a predictable daily routine in your family.</td>
</tr>
<tr>
<td></td>
<td>• Talk to children about how long it takes to do things, such as chores, picking up rooms, or completing a homework assignment.</td>
</tr>
<tr>
<td></td>
<td>• Plan an activity for a weekend or vacation day that involves several steps.</td>
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**Interventions for Specific Behaviors**

- Managing Morning Routines (pgs. 251-253: *Smart But Scattered*)
- Learning to Estimate How Long a Task Will Take (pgs. 253-255: *Smart But Scattered*)

**Other Resources**

- Factsheet - Learning Works for Kids – “Time Management”
- Article – EDF Time Tips
  [SchoolBehavior.com](http://www.schoolbehavior.com/conditions_edftime.htm)
## How Do I Teach EF Skills?

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<tr>
<td>IMPULSE CONTROL (RESPONSE INHIBITION)</td>
<td>General Strategies to Build Skill</td>
</tr>
<tr>
<td></td>
<td>• Assume youngest child has little impulse control.</td>
</tr>
<tr>
<td></td>
<td>• Help child learn to display gratification by using formal waiting periods for things he/she wants to do or have.</td>
</tr>
<tr>
<td></td>
<td>• Require child to earn some things they want (teaches to delay gratification and inhibit impulses).</td>
</tr>
<tr>
<td></td>
<td>• Help child understand consequences for poor impulse control.</td>
</tr>
<tr>
<td></td>
<td>• Prepare child for situations that require impulse control by reviewing them in advance.</td>
</tr>
<tr>
<td></td>
<td>• Practice response inhibition in role-playing situations.</td>
</tr>
<tr>
<td></td>
<td>• Cue child before he/she enters situation calling for specific behavior you’re targeting and then reward for exhibiting self-control.</td>
</tr>
<tr>
<td></td>
<td>• Provide external structure in the form of general guidelines and specific rules to teach acceptable behavior.</td>
</tr>
<tr>
<td></td>
<td>• Offer support (visual cues and prompts) to bolster stop function.</td>
</tr>
<tr>
<td></td>
<td>• Plan in advance for potentially problematic times by identifying what leads to loss of control and providing extra support in those situations.</td>
</tr>
<tr>
<td></td>
<td>Teach alternatives to negative behaviors.</td>
</tr>
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<tr>
<td></td>
<td>• Build on older child’s desire for more freedom by directly connecting this to the behaviors needed to maturely handle the desired privileges</td>
</tr>
<tr>
<td></td>
<td>• Use rewards (tangible, verbal, or otherwise) to motivate desired behavior</td>
</tr>
<tr>
<td></td>
<td>• Ensure your child’s safety</td>
</tr>
<tr>
<td>Interventions for Specific Behaviors</td>
<td>Managing Verbal Impulsiveness (pgs. 101-105: Late, Lost, and Unprepared)</td>
</tr>
<tr>
<td></td>
<td>Managing Physical Impulsiveness (pgs. 105-106: Late, Lost, and Unprepared)</td>
</tr>
<tr>
<td></td>
<td>Stop Irritating Behavior (pgs. 107-109: Late, Lost, and Unprepared)</td>
</tr>
<tr>
<td></td>
<td>Control Running Off in Stores or Other Settings (pgs. 109-113: Late, Lost, and Unprepared)</td>
</tr>
<tr>
<td></td>
<td>Manage Homework Problems (pgs. 113-116: Late, Lost, and Unprepared)</td>
</tr>
<tr>
<td></td>
<td>Reducing Interruptions During Phone Calls (pgs. 191-194: Smart but Scattered)</td>
</tr>
<tr>
<td></td>
<td>Discouraging Fights with Siblings (pgs. 194-196: Smart but Scattered)</td>
</tr>
</tbody>
</table>
How Do I Teach These Skills?

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

• 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 context of the whole student.

There are multiple tests for each Executive Function skill!
## How Do I Teach EF Skills?

### A Dual Approach

<table>
<thead>
<tr>
<th>Develop Executive Function Skills Through Instruction and Experience</th>
<th>Accommodate Executive Function Weaknesses and Adjust Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>That’s what the remainder of the workshop is about</td>
<td>Students do well if they can</td>
</tr>
<tr>
<td></td>
<td>If Executive Function weakness and no support (Just Do It!), high risk of developing</td>
</tr>
<tr>
<td></td>
<td>• Emotional</td>
</tr>
<tr>
<td></td>
<td>• Behavioral</td>
</tr>
<tr>
<td></td>
<td>• Self-Image</td>
</tr>
<tr>
<td></td>
<td>• Problems which can impair adult functioning</td>
</tr>
</tbody>
</table>
How Do I Teach EF Skills?

Know Thyself.

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

http://neurodevelop.com/File/b9745588-94f3-412b-a372-350e93e10e17
How Do I Teach EF Skills?

Know Thyself.

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

Generally speaking, it will be hard for you to teach the areas that are not your strengths.
How Do I Teach EF Skills?

Know Thyself.

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

On the other hand, you’ll be great at teaching to your own EF strengths.
How Do I Teach EF Skills?

Language Matters:
Consider the language staff use with students and develop EF prompting skills.
Strategy: Words That Build Executive Function Skills
Executive Function Prompts*

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

Forsee/Plan (Short Term)

Cues the anticipation of conditions or events in the very near future, such as the consequences of one’s actions.
### Self-Regulation Executive Function Definitions with Examples of Teacher Prompts

George McCloskey, Ph.D., Bob R. Van Divner, M.S. & Lisa Perkins, M.S.

Use this list to prepare for observing and noting Teacher Prompts provided during classroom instruction.

<table>
<thead>
<tr>
<th>Self-Regulation Executive Function</th>
<th>Examples of Teacher Prompts: (P=Perceiving F=Feeling T=Thinking A=Action)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceive</strong></td>
<td><strong>Positive and specific:</strong></td>
</tr>
<tr>
<td>Cues the use of sensory and perception processes to take information in from the external environment or “inner awareness” to tune into perceptions, emotions, thoughts, or actions as they are occurring</td>
<td>P: “Everyone look at the board.”</td>
</tr>
<tr>
<td></td>
<td>P: “What do you see when you look in the box?”</td>
</tr>
<tr>
<td></td>
<td>P: “Listen to this.”</td>
</tr>
<tr>
<td></td>
<td>P: “You’ll need to listen carefully to this next part.”</td>
</tr>
<tr>
<td></td>
<td>P: “Feel how rough that edge is?”</td>
</tr>
<tr>
<td></td>
<td>P: “Feel how heavy this is.”</td>
</tr>
<tr>
<td></td>
<td>F: “How are you feeling right now?”</td>
</tr>
<tr>
<td></td>
<td>T: “What are you thinking about right now?”</td>
</tr>
<tr>
<td></td>
<td>A: “Try to notice how you bend your legs when you do that.”</td>
</tr>
<tr>
<td><strong>Negative, vague and/or poorly timed:</strong></td>
<td></td>
</tr>
<tr>
<td>P: “Why aren’t you looking up here now?”</td>
<td></td>
</tr>
<tr>
<td>P: “Why do I always have to tell you to listen?”</td>
<td></td>
</tr>
<tr>
<td>P: “You have hands don’t you?” (i.e., use them and touch it)</td>
<td></td>
</tr>
<tr>
<td>P: “You’re not watching what you’re doing are you?”</td>
<td></td>
</tr>
<tr>
<td>F: “You don’t even know what you’re feeling, do you?”</td>
<td></td>
</tr>
<tr>
<td>T: “Do you have any idea what you are thinking about now?”</td>
<td></td>
</tr>
<tr>
<td>A: “Watch what you’re doing.”</td>
<td></td>
</tr>
<tr>
<td><strong>Initiate</strong></td>
<td><strong>Positive and specific:</strong></td>
</tr>
<tr>
<td>Cues the initial engagement of perceiving, feeling, thinking, or acting</td>
<td>P: “Everyone should be looking at the board now.”</td>
</tr>
<tr>
<td></td>
<td>F: “Now would be a good time to express any feelings you have about it.”</td>
</tr>
<tr>
<td></td>
<td>T: “Start thinking about it now.”</td>
</tr>
<tr>
<td></td>
<td>A: “Start walking now.”</td>
</tr>
<tr>
<td></td>
<td>A: ”Read the first question now.”</td>
</tr>
<tr>
<td><strong>Negative, vague and/or poorly timed:</strong></td>
<td></td>
</tr>
<tr>
<td>P: “Why aren’t you listening yet?”</td>
<td></td>
</tr>
<tr>
<td>F: “Don’t you feel anything when you see something like that?”</td>
<td></td>
</tr>
<tr>
<td>T: “Don’t wait to get started thinking about it.”</td>
<td></td>
</tr>
<tr>
<td>A: “Why haven’t you started yet?”</td>
<td></td>
</tr>
<tr>
<td>A: “What will it take to get you moving?”</td>
<td></td>
</tr>
</tbody>
</table>
# Executive Function Prompts

<table>
<thead>
<tr>
<th>EF Skill</th>
<th>Positive and Specific</th>
<th>Negative, Vague, PT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Task Initiation</strong></td>
<td>“Start walking now.”</td>
<td>“What will it take to get you moving?”</td>
</tr>
<tr>
<td><strong>Gauge</strong></td>
<td>“Consider what it's going to take to get this job done as quickly as possible. (You might want to write it down.)”</td>
<td>“Do I have to explain everything to you ahead of time?”</td>
</tr>
<tr>
<td><strong>Inhibit</strong></td>
<td>“Try to focus on thoughts that will produce a positive solution.”</td>
<td>“Don’t even go there.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Don’t even think about it.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Don’t you dare do that.”</td>
</tr>
</tbody>
</table>
The Scooby Doo Response...
Brain Language

A complete copy of the Executive Functioning Prompts can be downloaded at:

www.upsidedownorganization.org
Self-Talk
A Fabulous Resource!
“If Mr. Clown Box makes that bzzt sound and asks me to look at him and play with him, Then I will just look at my work, not him and say: No, I can’t, I’m working.”

If/Then “Temptation Innocation”

• Adapted from The Marshmallow Test by Walter Mischel (2014, Little, Brown and Company, New York, NY)

• Anticipate the temptation or distraction and make a mini-plan to cope using the If/Then format.

• Convert the plan to self-talk and then rehearse, rehearse, rehearse!
If/Then “Temptation Inoculation”

• “If I know the answer to the teacher’s question, then I will raise my hand.”
• “If my neighbor tries to talk to me during the test, I will shake my head and not make eye contact.”

• If ______________________ ,
  Then ___________________.

Thinking about the reward for avoiding the temptation or distraction is critical.
Great Questioning Techniques for EF Skills
Great Questioning Techniques for EF Skills

1. 10 Mississippi
2. All Hands on Deck
3. Nudge a Neighbor
4. What Would Mom Say?
5. Personal Whiteboards
6. Think, Write, Pair, Share
Teaching EF Skills

The “Take 5” Approach: 5 Minutes of Every Class
Add On! (Working Memory)
The Card Shuffle (Sequencing)

• Think about the process for entering/exiting your class or a standard procedure used in your class.
• Write one step of this process on each card.
• Shuffle the cards.
• When prompted, exchange cards with a partner.
• Put them in order as fast as you can!
Building Focus (Sustained Attention, GD Persistence)
The Ball Toss

© Train Up a Child
What’s Different?

Spot 5 Differences on the Pirate Flags
What’s Different?

Spot 5 Differences on the Pirate Flags
What’s Different?
What’s Different?
What’s Different?
What’s Different?
FIND 5 DIFFERENCE

The Upside NMOD Organization
FIND 5 DIFFERENCE.
Boost Thinking Skills
Word Sacks

ABC
Metaphor Bags
Supporting Organizational Skills
Organizing for Studying

Promoting Executive Function in the Classroom

Lynn Meltzer
Reading Non-Fiction Text
Skim, RAP, Map (Meltzer et al., 2006)

**Skim**, look at…
- Chapter objectives
- Headings/subheadings
- Bold/italicized words
- Margin notes and sidebars
- All visuals and captions
- Summary questions at end of chapter
**Skim, RAP, Map** (Meltzer et al., 2006)

**RAP**

- Read all parts of each section.
- Ask questions (turn each heading and subheading into a question)
- Paraphrase
Map

- Set-up two column notes
- Write the RAP questions on the left, and map the answers on the right.
“Top Down” Detail Generation

1. Who are these children?
2. Where are they?
3. What are they doing?
4. How do you feel?
5. What happened just before?
6. What might happen next?

The teacher gives the picture a main idea and then elicits details and inferences from students through guided questions. As proficiency improves, the teacher can fade away the guiding questions and ask students to generate their own questions and arrive at reasonable inferences. (Meltzer 2010)
How Do I Teach EF Skills?

Positive Everyday Routines
Ylvisker & Feeney (1998)

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
Example

✓ **GOAL** – To bring my planner to school each day

✓ **PLAN** – Place my planner in front of the door each day

✓ **DO** – Record how I do each day

✓ **REVIEW** – I met my goal 4 out of 5 days – keep plan the same
Example

BUT IF:

REVIEW – I met my goal 2 times out of 5.

Analysis

• Family members moved the planner when they came in the door.
• I forgot to put planner by door.
Example

NEW PLAN:

**PLAN** – Put planner in backpack before brushing teeth and hang backpack on doorknob.

Other Ideas

• Put planner in lunch bag in refrigerator.
• If I remember planner, I get 20 extra screen time minutes.
Templates, Timers and Tools
# Time Management

<table>
<thead>
<tr>
<th>Time</th>
<th>Organization</th>
<th>Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>The $25,000 Idea</td>
<td>You must use a Planner</td>
<td>Remember “AFEM”</td>
</tr>
</tbody>
</table>
The $25,000 Idea

Early 1900’s Ivy Lee, “Efficiency Consultant”

“I know what to do, if you can show me a better way of getting it done, I’ll listen.”

Write me a check for what my idea was worth to you...
The $25,000 Idea

• Each night, write on an index card the 6 most important things you have to do tomorrow.
• Next, number them in the order of importance to you. Transfer the list to your planner.
• First thing each morning, look at your list. Starting with #1, focus on that task until it is done. (“Eat the Frog”) Move on to #2. Finish it. Then to #3.
• Repeat the process again before you go to bed.
Our Brains Work Sequentially...

- Our brains can focus intently on one thing at a time.
- What we call “multi-tasking” is toggling back and forth really fast.
- Multi-tasking can be done, but it sacrifices resources and limits performance.

You MUST use a Planner.
A Couple of Web Tips...

- **www.futureme.org**
  Write an email to yourself and identify when you want it sent. Use for motivation, encouragement, reward and reminder.

- **www.stikk.com**
  Set a goal and identify both the reward for reaching it and the consequence if you don’t!
“A.F.E.M.”

• Spend “a few extra minutes” organizing and planning each day.
• 15 minutes each evening filling-out your priority card/planner for the next day.
• 5 minutes in the morning reviewing your card.
Time Orientation
Creating and Sustaining Routines: Smile and Say Cheese!

- Make routine processes visual
- Students are good at creating these!
McKenzie and the Dishwasher

McKenzie's Dishwasher
Drill... Open it up, unload if necessary.

Rinse the item...
McKenzie and the Dishwasher

• “Negative Loop” around dishwasher chore.
• Oral Recipe repeatedly failed.
• Photo Book provided the “surrogate frontal lobe” she needed.
More Ideas For Surrogate Frontal Lobes

- turn on water
- soap
- wash hands
- turn off water
- dry hands
Executive Functions are complex and interdependent. Some EF problems may require more in-depth tools. Here are just a couple of examples.
Examining the Behaviors You Don’t Want
(Reward/Avoidance Cards)
## Reward: What’s Reinforcing the Problem Behavior?

<table>
<thead>
<tr>
<th>Context</th>
<th>Behavior</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<thead>
<tr>
<th>Context</th>
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</tr>
</thead>
<tbody>
<tr>
<td>End of day.</td>
<td>Smoke 2 cigarettes.</td>
<td>Nicotine buzz.</td>
</tr>
<tr>
<td>Kids asleep.</td>
<td></td>
<td>Relax.</td>
</tr>
<tr>
<td>Going to bed soon.</td>
<td></td>
<td>Unwind.</td>
</tr>
</tbody>
</table>

(What new behavior will achieve the same result in the same context?)

(The result is the reward for that reinforces the behavior)
### Reward: What’s Reinforcing the Problem Behavior?

<table>
<thead>
<tr>
<th>Context</th>
<th>Behavior</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of day.</td>
<td>Walk the neighborhood quickly and play “Sherlock Holmes”</td>
<td>Nicotine buzz. (Dopamine substitute)</td>
</tr>
<tr>
<td>Kids asleep.</td>
<td></td>
<td>Relax.</td>
</tr>
<tr>
<td>Going to bed soon.</td>
<td>(What new behavior will achieve the same result in the same context?)</td>
<td>Unwind.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(The result is the reward for that reinforces the behavior)</td>
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</table>
Create an EF Plan
Creating An Executive Function Plan

E V C P

E nvironmental Changes and Supports

V isual Tools

C hunking and Sequencing

P rompting
Creating An Executive Function Plan

Environmental Changes and Supports

• Location
• Equipment
• Manipulatives
  (clocks, planners, post-its, alarms, signs, crates…)

The Upside NMOD Organization
Creating An Executive Function Plan

**Visual Tools**

- Photo Books
- Sequence Charts
- Maps
- Pictures/Illustrations
Creating An Executive Function Plan

Chunking and Sequencing

• Break Down the Specific Steps in the New Behavior
• Focus on Content and Sequence
Creating An Executive Function Plan

Prompting

• Prompting Requires Observation/Supervision and Key Words…
  – First
  – Next
  – Now
  – Remember
  – Consider
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?
Creating An Executive Function Plan

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?
Creating An Executive Function Plan

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?
Reviewing and Assessing Exercises
When Should I Review?
When Should I Review?

The most effective review (highest recollection), occurs at the halfway point between when the material is delivered and when the assessment is given.
Fast and Quick Brain Aides...

You can get better grades by learning the most efficient and effective way your brain learns. For example, what research shows works may surprise you...
Least Effective Study Methods

• Highlighting and underlining textbooks and other materials.
• Rereading.
• Summarization.
• Keyword mnemonics — the use of keywords and mnemonics to help remind you of course material.
Moderately Effective Methods

- **Elaborative interrogation** — uses “why” questions to get you to make connections between new and old material.

- **Self-explanation** — providing your own explanations for problems while learning material.

- **Interleaved practice** — mixing different kinds of problems or material in one study session. For example, math and science.
Most Effective Methods

- **Practice Testing** — any form that allows you to test yourself, including using actual or virtual flashcards, doing problems or questions at the end of textbook chapters, or taking practice tests.

- **Distributed Practice** — studying material over a number of relatively short sessions. (The opposite of cramming!)

Most Effective Methods

• **Teach to Another** — If you have to teach the material to another, your recall will be more accurate and faster in retrieval.

• **Say it Out Loud** — Say out loud what you need to recall and remember. Your recall of information is better when you say the words out loud because your brain’s memory is more distinct for words said aloud versus those just thought about. Use your pets!

Quick Assessment In A Crunch

The Affinity Diagram
  * Post-It Notes
  * Anonymity Intended
  * Give question
  * Answer on Post-It
  * Music Starts
  * Students “Stick”
Quick Assessment In A Crunch

The Affinity Diagram

What do you see as the biggest obstacles to implementing executive function skills training in your school?
Great Article and Author!

Thank You!

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