Motivating Kids and Teens with Executive Dysfunctions

Jaime M. True, President, Learning Equalizer, LLC
Doctoral Fellow and Faculty Associate; Johns Hopkins University
National Board Certified Exceptional Needs Specialist
During this presentation, I will discuss definitions, descriptions, and difficulties associated with executive functioning. You will understand why I refer to challenges with executive functioning as Doing Deficit Disorder, or DDD. I will present empirical evidence to support your use of promising strategies that may help your child or student DO more to show what they know.

Objectives

You will understand:
- Why saying, “Just do it!” doesn’t work;
- How the “boss” of your child’s brain works (and why it takes vacations);
- How to stimulate your child to work / behave / learn
- Evidence-based parenting and teaching practices to train your child to work / behave / learn independently
One of the most significant bodies of neuroscience research focuses on the executive functioning processes in the brain. Executive functioning (EF), as a term, holds multiple characteristics, but consistent definitions classify EF as the umbrella under which several inter-related, cognitive processes work to plan and execute a goal (Marchetta, Hurks, Krabbendam, & Jolles, 2008). Neuropsychologists refer to the cognitive processes using varied terms and models, dependent on the literary audience and measures used in studies. For example, Barkley (2012) and Brown (2008) specialize in Attention Deficit Disorder (ADD/ADHD), use rating scales to diagnose executive functioning disorders (EFD), and provide resources to parents and educators. They refer to six implications of executive dysfunction in students with ADD, which include; (a) activation, (b) focus, (c) effort, (d) emotion, (e) memory, and (f) action (Barkley, 2012; Brown, 2008). Neuropsychologists conducting experimental studies with subjects using neuroimaging and psychological tests tend to refer to the executive functioning processes as; (a) planning, (b) inhibiting, (c) shifting, (d) impulse control, (e) working memory, and (f) monitoring (see Jurado & Rosselli, 2007, for review). Importantly, neuropsychologists have determined that the complex process of goal achievement is conducted mostly in the pre-frontal cortex, with communications throughout the brain’s networks that can be interrupted, impeded, or damaged throughout the lifespan as a part of development or aging, and as a characteristic of many disabilities (Elliott, 2003).

In typically developing children, executive functions evolve from birth through about age 14 (Romaine & Reynolds, 2005). As young as age two, children demonstrate inhibition, or the ability to sustain attention on completing a task without becoming diverted to a competing stimulus (Romaine & Reynolds, 2005). Between the ages of five and eight, children demonstrate greater impulse control and the ability to shift from one task to another when expected to do so (Romaine & Reynolds, 2005). By age 14, working memory (the ability to apply a known in order to complete a novel task), planning (selecting an effective and accurate strategy for completing a task), and initiating (beginning a task with an efficient and accurate strategy to complete it) mature. EF development stagnates between ages 14 through 17, then, planning maturity increases slightly through age 22 (see Romaine &
Reynolds, 2005 for a meta-analysis on frontal lobe development). Given the developmental stages of EF, educators and parents should adjust their expectations and supports for children accordingly.
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Unfortunately, executive dysfunction characterizes most educationally impacted disabilities in children and effects most adults at some point in their lifespan (Brown, Reichel, & Quinlan, 2011; Elliott, 2003; Geurts, Verte, Oosterlaan, Roeyers, & Sergeant, 2004; Hughes & Ensor, 2006; Jurado & Rosselli, 2007). According to the Center for Disease Control (2007), Attention Deficit Disorder (Hyperactive, Impulsive, and Combined types) is the most common neurobehavioral EFD of childhood, effecting about 3.5 million children. While one in ten children is diagnosed with ADHD, one in 88 are diagnosed with Autism, and an additional three to five percent of American children have been diagnosed with Tourette’s Syndrome, Oppositional Defiant Disorder, Conduct Disorder, Specific Learning Disabilities, Traumatic Brain Injury, and Schizophrenia, all of which have been studied for demonstrating executive dysfunction as a primary characteristic of their conditions (Brown, et al., 2011; Elliott, 2003; Geurts et al., 2004; Jurado & Roselli, 2007). Additional health impairments, such as Phenylketonuria, Parkinson’s Disease, and Alzheimer’s Disease also present executive dysfunctions (Elliot, 2003; Jurado & Roselli, 2007). Other studies have investigated the prevalence and effects of EFD on adults, and indicate persistence and worsening of EF over time, with the greatest deterioration in areas of planning and working memory (Banard, Muldoon, Hasan, O’Brien, & Steward, 2008; Rosenthal, Lawson, Doxon, Wallace, Wills, Yerys, & Kenworthy, 2013). Reported estimates suggest that as many as eight million U.S. adults are diagnosed with adult ADD/ADHD, estimates of adults with Autism, Parkinson’s and Alzheimer’s were unavailable for this review, but the Center for Disease Control’s Behavioral Risk Factor Surveillance System (2011) reported that 24% of adults were limited in any activities because of physical, mental, or emotional problems. Taken together, the staggering rate of EFD in America, for both children and adults, should compel educators to understand EF and to consider the consequences of executive dysfunction to student learning, and, to parenting, and to their ability to partner with families.
Executive dysfunction can seriously impair one's productivity during childhood and adulthood. Barkley (1997) referred to several studies, since updated by the Center for Disease Control, confirming that: ADHD is associated with greater risks for low academic achievement, poor school performance, retention in grade, school suspensions and expulsions, poor peer and family relations, anxiety and depression, aggression, conduct problems and delinquency, early substance experimentation and abuse, driving accidents and speeding violations, as well as difficulties in adult social relationships, marriage, and employment. (p. 1)

More recently, a study by Brown (2011) suggested that children with high IQs (>120) with ADHD were up to seven times more likely to be retained in a grade than children with average IQ without ADHD. The National Assessment of Education Progress (NAEP) Data Explorer illustrated statistically significant differences in mathematics achievement between students with and without disabilities (Nation's Report Card, 2013). Additionally, the National Center for Education Statistics reported that 75% of students with disabilities who dropped out of high school in 2006 received special education services under the codes of Emotional Disturbance, Other Health Impairment (the code under which ADHD is categorized), and Autism (Planty, Hussar, Snyder, Provasnik, Kena, Dinkes, KewalRaman, & Kemp, 2008). The mean number of disciplinary actions was reported by the National Longitudinal Transition Study-2 (2002, reported in Institute for Education Sciences, 2006): With a range of one to seven per year, students with Emotional Disturbance experienced seven, Other Health Impairment experienced three, Autism experienced one, and Traumatic Brain Injury experienced two. Furthermore, these disability categories accounted for 161 suspensions, or 51%, of the total (Institute for Education Sciences, 2006). These negative school experiences and exclusion from educational opportunities can perpetuate a cycle of dysfunctional behavior.

In fact, most children with EFDs retain their difficulties, or worsen as adults (Ramsay & Rostain, 2007). Studies investigating the severity of EFD on adults with Autism Spectrum Disorders suggested that the ability to plan and initiate goal directed behavior, and to use working memory decreased with age (Barnard, et. al, 2008). Reports of frequent job changes, poor driving records,
higher divorce rates, risk for teenage pregnancy, and sexually transmitted diseases have significantly correlated to EFDs in adults (Ramsay & Rostain, 2007). The cost of ADHD in 2000 was calculated at $31.6 billion, including treatment, health care costs for the person with ADHD in the family (estimated that an average of 1.5 American family members was diagnosed with ADHD), healthcare cost for family members, and work-loss costs (Birnbaum, Kessler, Lowe, Secnik, Greenberg, Leong, & Swensen, 2005). Considering the consequences of EFDs on individual, family, and community, educators must provide developmentally appropriate, research-based interventions to engage families affected by EFD.
When school psychologists conduct rigorous cognitive evaluations that investigate all of the strengths and weaknesses related to suspected disabilities, they expand their assessment tools to often include executive functioning measures (Decker et al., 2013). Educators may be able to screen their students for some areas of executive functioning, using simple psychological tests. The Stroop Test (see Stroop, 1935 for original review, or http://faculty.washington.edu/chudler/words.html for a web-based child’s assessment) can be a fun way to measure a child’s ability to inhibit distracting stimuli in order to complete a task, by reading a list of manipulated color words. The Clock Test (see Shulman, 2000, or http://clockdrawingtest.com/) measures children’s memory and ability to plan, initiate, and monitor their accuracy when completing a task by asking them to draw a clock that reads 11:10 without and with a model. The Sally-Ann test (see Baron-Cohen, Leslie, & Frith, 1985, or http://www.youtube.com/watch?v=QjkTQtggLH4) measures a child’s ability to shift their thinking and adopt another person’s perspective telling a specific story with puppets and asking the child to predict a character’s next action. School psychologists often select rating scale instruments, such as the Behavior Rating Inventory of Executive Functioning (BRIEF) to collect perceptual data from parents and teachers and measure the internalizing and externalizing consequences of executive dysfunction on the student (Gioia, Isquith, Guy, & Kenworthy, 2000). Neuropsychologists and psychiatrists employ magnetic resonance imaging of the brain to map pathways when subjects complete tasks. Each of these measures has advanced our understanding of brain functioning, and has allowed us to more strategically identify strengths and weaknesses, and to diagnose disabilities.
Cobb, Sample, Alwell, and Johns (2005) conducted a systematic review of 16 studies on the effects of cognitive behavior interventions for secondary students with disabilities on reducing drop-out rates, and found two relevant commonalities among them. First, the interventions included training in the EFs; problem solving, self-instruction, communication skills, relaxation, and self-awareness, and used mentoring or teacher and peer modeling (Cobb et. al, 2005). Second, all of the studies, which showed significant effect sizes, incorporated positive behavior intervention supports such as a token economy or behavior contracting, through which students received tangible rewards for making progress (Cobb et al, 2005). The studies revealed that the leading trigger for students dropping out of high school was a feeling of social alienation, possibly linked to a perceived lack of confidence and social skills (Cobb et al, 2005). Consequently, teaching executive functioning skills, providing frequent positive feedback as students achieve their goals, and including parent training and participation throughout treatment can be viewed as evidence based practices.
While taking a break, complete the parent/guardian survey and consider strategies you use to build your child’s EF skills.
Part II: Evidence Based Practices
How meeting psychological needs can improve executive functioning and achievement
What are your current practices for building executive functioning skills? MAPs: history, dreams, nightmares, descriptors, gifts, talents, strengths, needs
You may be familiar with Maslow’s Hierarchy of Basic Psychological Needs (1943), which depicts a continuum of well-being that ranges from feeling safe to feeling self-actualized. Most education research measures success using mastery or self-efficacy measures. This paradigm reinforces the importance of normed standards and expectations. That is, we value what the norm expects us to master, and when we do master the norm, we feel good about ourselves. For example, a child who follows school rules and receives a PBIS reward is happy and continues to follow the rules. On the other hand, individuals with executive functioning difficulties may feel oppositional toward externally imposed norms. Studies suggest that children with emotional disabilities require greater autonomy, and children with learning disabilities benefit from strong relationships to transcend feelings of failure over externally imposed norms. Without autonomy-supportive relationships, they may adjust to their environment by rejecting the norm and creating their own definition of success. Using the following strategies, you can help nurture your child toward knowing their strengths, channeling their energy toward valuable goals, and improving their overall well-being.
Over 100 studies across the globe, conducted by psychiatrists, psychologists, and education researchers, with and without individuals with disabilities, across all age groups suggest significant differences in achievement based on the extent to which participants experience self-determination.
External prompting has been the only empirically supported practice linked to improved outcomes, but there are various ways to prompt. Control-oriented prompting offers a quick fix and usually produces immediate results but poor long-term effects and limited changes in overall behavior. For children with tendencies to respond impulsively and emotionally, control-oriented prompts can escalate negative or aggressive behavior. On the other hand, autonomy-supportive prompts can de-escalate frustration and build feelings of competence. Let’s consider a few scenarios. What do the following scenarios look like and sound like?

1. Time to go to school
2. Homework time
3. Chores
Positive reinforcement is a highly supported evidence-based practice. Keep in mind that natural reinforcements build intrinsic motivation, while tangible reinforcements build a need for external control and reduce independence. Know what your child needs, and try to temper our natural tendency to over or under reward performance.

The ARC of teaching suggests that social and activity reinforcements ARE autonomy-supportive. Whenever possible, use these tools to help your child increase motivation.

<table>
<thead>
<tr>
<th>Reinforcement Hierarchy</th>
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<tr>
<td>From most natural to least:</td>
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<tr>
<td>1. Social Reinforcement</td>
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<tr>
<td>2. Activity Reinforcement</td>
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<td>3. Social, token, and activity reinforcement</td>
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<tr>
<td>4. Curtailment of activity</td>
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<tr>
<td>5. Social, token, and activity reinforcement and response cost</td>
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<td>6. Tangible reinforcement</td>
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In which areas is your child most and least developed or skilled?
We can only remember what we know, and we are most motivated to know ourselves.

1. **Self-determination scales**: The Self-Determination Assessment Battery, Third Edition (SDAB) (Hoffman et al., 2004); Arc’s Self-Determination Scale (Wehmeyer, 1991); The American Institutes for Research Self-Determination Scale (AIR-SDS) (Wolman, et al., 1994).

2. **Interest inventories**: Examples such as “Here I Am” and “High School Survey”

3. **Learning Preferences**: Visual, Auditory, Kinesthetic, Tactile (ex. http://ldpride.net/learning-style-test.html); Kolb Learning Styles (Activist, Reflector, Theorist, Pragmatist); Gregorc’s Mind Styles (Concrete vs. abstract), etc.

4. **Multiple Intelligences**: Naturalist, interpersonal, etc. (http://surfaquarium.com/MI/inventory.htm)

5. **Family /cultural awareness**: kids.familytreemagazine.com/kids/interview.asp


Keeping learned insights in a journal can improve reflection and monitoring.
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<tr>
<th>Younger Children</th>
<th>Older Children</th>
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<tr>
<td>• Hang a visible calendar: year, month, week, day</td>
<td>• Encourage management of family calendar</td>
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<tr>
<td>• Discuss daily schedules</td>
<td>• Ask to see or hear the child’s daily schedule</td>
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<tr>
<td>• Make daily family plans together</td>
<td>• Ask about daily goals</td>
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<tr>
<td>• 3 STEPS:</td>
<td>• Encourage tech-based tools for setting deadlines and reminders</td>
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<tr>
<td>– Multi-sensory</td>
<td>• Break down large projects into shorter benchmarks using</td>
</tr>
<tr>
<td>– Repetition</td>
<td>calendar reminders</td>
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<tr>
<td>– Feedback</td>
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Younger children:
- Use meal times as an anchor.
- What traditions or habits does your family enjoy?
- 3 STEPS:
  - Use fingers, touching, jumping, etc to remember how many steps
  - Repeat with a fun tone (ex. talk like a mouse or a ghost)
  - Provide positive feedback for what was remembered

Older children:
- Use calendar apps such as Outlook, Google calendar
- Use applications such as Remind.com
One of the great strengths of individuals who struggle with executive functioning is their creative ability. They see the big picture and can develop a vision for how a task should look when complete. Start by discussing the end product, then discussing the steps to completion. Help your child consider how long each step might take. Help your child get started on the first step.

Strategy 4: Initiate

• Help identify the first step.
• Set a timer!
• Provide help with the first step or two.
Help your child determine primary distractions, and try to eliminate them from the environment where tasks are to be completed. Providing an appropriate sensory input may help channel difficulties in this area. For example, you may provide a fidget (e.g., stress ball, pipe cleaner, paper clip), music in the background, an image of a calming scene, and/or a countdown timer. You can help your child identify distractions by encouraging her to tally the number of times she becomes distracted during a task, then discussing the distractions after completion. It’s definitely important to eliminate interruptions – turn off cell phones, etc.
If your child becomes hyper-focused on certain preferred activities, allow their use for designated periods of time, and count down to warn them that the time is ending. Provide a 3 minute, 2 minute, 1 minute, 15 second warning. Allow the child to shift independently whenever possible. For example, if the child is stuck on a video game, tell the child it’s time to turn it off. Provide positive encouragement to do so. Provide positive reinforcement when shifting occurs successfully.
If impulsivity is a primary concern, your child needs to learn how to predict triggers, identify positive ways to channel energy, and consider consequences. Using the BREaK strategy can help with identifying each feature of impulse control. To prevent impulsivity, provide physical and emotional outlets such as brain breaks and cognitive shifts. Brain breaks are short physical challenges to redistribute blood flow, such as a yoga pose or jumping jacks. A cognitive shift is redirecting emotional thoughts to rational thoughts. Cognitive shifts can be prompted by verbal fact-based questions (who, where, when) and by puzzles (mazes, word searches, jigsaw). After rationality is restored, allow time for reflection on the trigger and an opportunity to reflect on how well impulses were controlled.
Video self-modeling is one of the strongest evidence-based practices for learning new skills. When introducing a new skill, consider conducting a skit and video-taping it. Replay the skit prior to your child needing to perform the task. Take pictures of your child performing tasks successfully. When goals are set, record progress toward them on charts or in photo albums. Allow time for your child to discuss progress with others and receive feedback. Consider using a website or a social media site for this, so your child can receive positive attention for making progress toward goals.
The ARC of Caring

- Autonomy
- Relationships
- Competence
Summary:
The ARC of Caring

- “If we’re patient, impulsive students improve marvelously!”
- Autonomy-supportive relationships build competence and intrinsic motivation
- Strategies: Positive external prompting, visual monitoring tools, and frequent feedback

Our knowledge and support make a difference to our children.
Please visit my website (www.learningequalizer.com) and contact me (jaimetrue@learningequalizer.com) with questions or requests for resources 😊 Thank you for the opportunity to share the evening with you!