

What the EF? Understanding Executive Functioning

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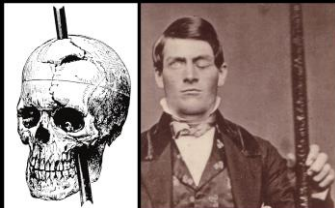


Learning Objectives

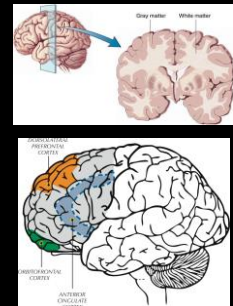
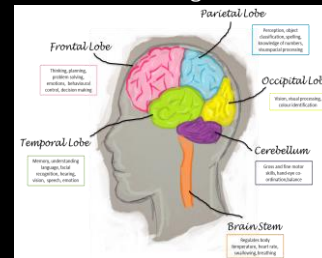


- Be able to define executive functions
- Understand the signs, symptoms, and implications of executive functioning deficits
- Identify some general interventions to increase executive functioning skills

What the EF?



Understanding the Brain



Executive What?

- Part of the neural circuit that runs through the frontal lobe
- Many theories, lacks a formal definition
- Complex, multi-dimensional construct
 - Lack of clarity
 - Contradicting evidence
 - Controversy



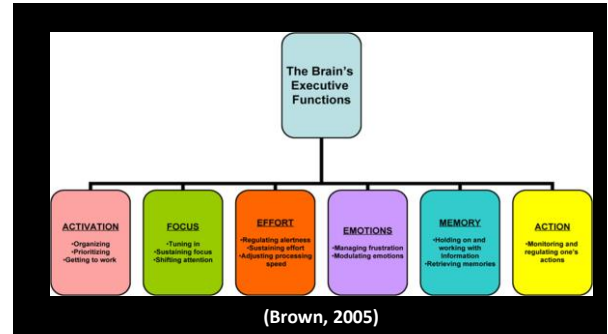
Some Basic Definitions

- A collection of processes that are responsible for guiding, directing, and managing cognitive, emotional, and behavioral functions (Giora et al., 1996)
- Multiple, directive, cognitive capacities of the mind that act in a coordinated way and are responsible for a person's ability to engage in purposeful, organized, strategic, self-regulated, goal directed processing of perceptions, thoughts, actions, and emotions (McCloskey, 2009)
- The efficiency by which individuals go about acquiring knowledge as well as how well problems can be solved across nine areas (attention, emotional regulation, flexibility, inhibitory control, initiation, organization, planning, self-monitoring, and working memory)" (Goldstein & Naglieri, 2013)

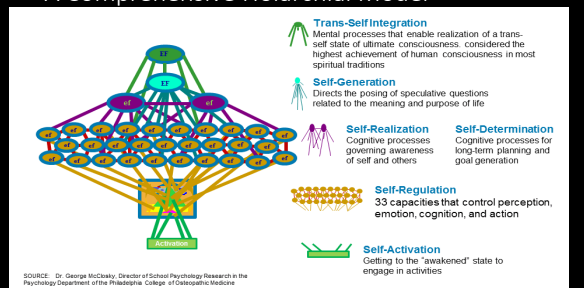


The CEO of the Brain, Conductor of the Orchestra, or Air Traffic Control System?

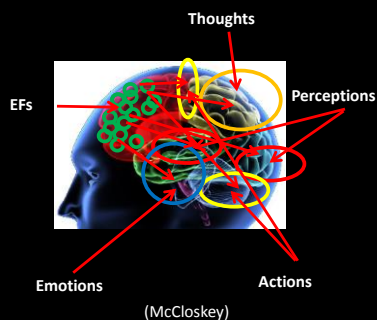
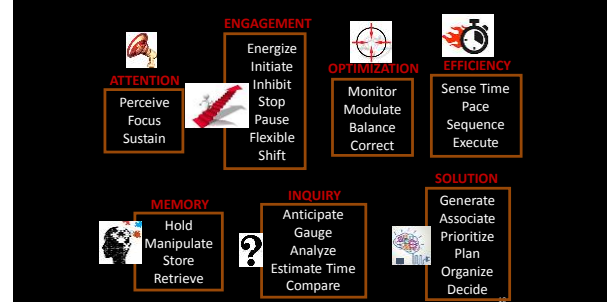
“Having executive functions in the brain is like having an air control system at a busy airport to manage the arrivals and departures of dozens of planes on multiple runways” (Center on the Developing Child at Harvard University, 2011)



A Comprehensive Hologarchical Model



Self Regulation Executive Function "Clusters" (McCloskey)



Development

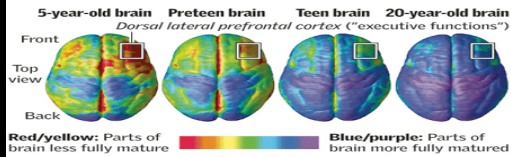
- Continues throughout lifetime
- Variation between chronological age and others
- Largest shift noticeable around adolescence
- Developmental in nature, so delays and lags can be observed
- Do not develop evenly
- Factors that can shape or impact
- A note on cultural expectations



Neuro-Imaging

Judgment last to develop

The area of the brain that controls "executive functions" — including weighing long-term consequences and controlling impulses — is among the last to fully mature. Brain development from childhood to adulthood:

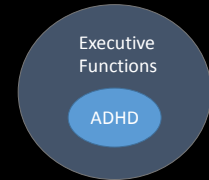


Sources: National Institute of Mental Health; Paul Thompson, Ph.D., UCLA Laboratory of Neuro Imaging

Thomas McKay | The Denver Post

Frequent Questions

- Intelligence
- Personality
- DSM-V
- ADHD
- LD
- When is it a disability?
- Assessment



Interventions for Executive Functioning Deficits

- Assessment
- Education
- External Control
- Time Management Aids
- Routines
- Teaching Self-Regulation Skills
- Modeling
- Bridging Techniques
- Rewards
- Feedback



3 Things To Take Away and Remember!

- Executive functions are **multiple directive** capacities of the mind
- They **cue** the use of other mental abilities
- They **can be altered** through intervention



Executive Functioning Handout

References

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- Center on the Developing Child at Harvard University (2011). *Building the Brain's "Air Traffic Control" System: How Early Experiences Shape the Development of Executive Function: Working Paper No. 11*. Retrieved from www.developingchild.harvard.edu.
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- McCloskey, G., Perkins, L.A., & Divner, B.V. (2009). Assessment and intervention for executive function difficulties. New York, NY: Routledge.
- National Center for Learning Disabilities, www.ncld.org.
- National Institute of Mental Health, www.nimh.gov.
- Newburg, A. & Waldman (2009). How god changes your brain. New York, NY: Ballantine Books.

Resources

- BrainCog (www.braincogs.com)
- CogMed (www.cogmed.com)
- Cognitive Strategy Instruction (www.cehs.unl.edu/csi)
- Executive Functions Training (www.linguisystems.com)
- How Does Your Engine Run? (www.alertprogram.com)
- I Can Problem Solve (www.icanproblemsolve.info)
- Luminosity (www.lumosity.com)
- The Research Institute for Learning and Development (www.researchchild.org)
- Tools of the Mind (www.toolsofthemind.org)
- Superflex: A Superhero Social Thinking Curriculum (www.socialthinking.com)