

# EXECUTIVE FUNCTION AND ITS IMPORTANCE IN SCHOOL FUNCTIONING, DAILY LIVING AND INDEPENDENT FUNCTIONING

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# What is EF?

- There have been a variety of definitions provided for the term executive function.
- An umbrella term for all the complex cognitive processes which control flexible, goal-directed and purposeful behavior.
- The coordination and synthesis of numerous processes and subskills.

# Neuroanatomy

- EF is controlled by the frontal and prefrontal cortex but has projections to numerous parts of the brain.
- It is about the connections not the location.

# Areas of Impact

- Challenges in the area of EF affect daily living in a number of ways. These can include the regulation and control of emotions/behavior, social interactions and academic/vocational/independent living.
- It is typical that individuals with neuro-cognitive challenges struggle with the development and implementation of EF.

- It is also the case that it may not be the total absence of the ability to utilize these skills but rather a delay relative to same age peers and/or the difficulty in utilizing these skills in an automatic and fluent manner.
- As the individual grows it is expected that these skills are not only present but are accessed and utilized in a fluent and ready manner.

- As we discuss the aspects of EF it is also important to consider co-morbid issues which contribute to difficulties in efficient and effective functioning.
- It is common that EF challenges exist for a number of ***neurobehavioral diagnoses***.
- For example, students with ADHD have corresponding issues with sustained focus and attention.

- When impulsivity is also apparent there are concerns for the ability to delay gratification in order to optimize decision making.
- Students with an autistic spectrum disorder have difficulty with perspective taking and monitoring the impact of personal behavior on others in order to modify approach to various situations.

- Students with various forms of learning disabilities may have difficulties with the fluent retrieval of information and general processing speed which impacts the efficiency of gathering information as well as demonstrating knowledge.



- As such, it is important to understand your child in light of the EF concerns being discussed today as well as other diagnostic factors.
- This allows for a more comprehensive approach in the development of effective and efficient daily functioning.

- It is my experience that a sustained and consistent effort to develop these skills is of utmost importance as these are very necessary for productive functioning in adulthood.
- As these skills need to be learned and implemented by the individual it also means that there needs to be an ongoing effort to shift responsibility to the student over time.

# Subskills which would fall under EF

- Inhibition – the ability to consider a situation and think before you act.
- Shift – the ability to readily and easily shift between one activity and another or one thought and another.
- Emotional control – the ability to access and implement coping skills in order to regulate powerful affective experiences.

- Initiation – the ability to begin/initiate a task.
- Working memory – the ability to hold several pieces of information in one’s mind in order to complete a task.
- Prioritizing – the ability to determine what is most important.
- Time awareness – to be able to consider the amount of time, passage of time, use of time.

- Organization of materials – the ability to know where necessary supplies/personal belongings are and keep track of these for efficient use.
- Monitor (performance) – the ability to monitor whether performance of a particular task meets the initial demands (e.g. “Am I answering the question asked? Am I doing the job the way I was asked to do it?)

- Monitor (social) – the ability to be aware of and respond to social cues about the impact of my behavior on others. This is also integrated into perspective taking.

# Assessment of EF

- There are a number of neuro-cognitive assessment tools which can be helpful to determine presence and degree of challenge.
- The Wechsler Intelligence for Children-V includes an assessment of thinking, reasoning and problem solving in the areas of verbal, visual spatial and fluid reasoning skills.
- This can be compared and contrasted to the performance on measures of working memory and processing speed.

- These scores can be re-organized to form cluster scores. A helpful comparison on the WISC-V is that of General Ability which considers thinking, reasoning and problem solving verbally and visually to Cognitive Proficiency which assessed the effective and efficient storage and retrieval of information.



- There can be a comparison on academic achievement testing of skills vs. applications vs. fluency.
- Measures of the rate of retrieval of stored information such as language is also helpful.
- There are also measures of cognitive shifting (Trail Making), planning (Tower) and verbal reasoning (Proverbs) from the Delis Kaplan Executive Function System.
- Important to consider not only skill level but fluency and automaticity.

- Analysis of the pattern of performance and relative strengths and challenges can be important helping to make decisions about vocation, etc.
- It is important to note that these measures while helpful are somewhat limited in the overall assessment of EF challenges as they are completed in a one to one controlled setting and do not reflect the pace and complexity of typical daily living.
- Additional information obtained via interview or rating scales (BRIEF).

- The Behavior Rating Inventory of Executive Function is a behavior rating scale which compares the student's level and pattern of functioning to other students his/her age along the dimensions noted before.
- The ratings provided by the parents, teachers and the student himself are then compared to other students his age and gender.

- Based on these results as well as other concerns noted by those involved with the student an intervention plan can be established and promoted.
- It is important to engage the student to the greatest degree possible in order to recognize that they will need to participate in the process for it to be effective.

- Interventions are numerous but there are several which are common as standard for individuals struggling with independent and efficient functioning.
- In general, there is the need to make many things explicit regarding what is expected.
- An initial step is to determine that the student is aware of and can articulate the purpose and goal of an activity.

- A goal setting step can involve the identification of what needs to be accomplished with a certain task or activity.
- Following from this can be a plan of attack. For example, time should be spent addressing the issue of homework completion. The student and parents should discuss the general plan of when and where homework should be done.

- Each evening there can be a review of:
  - What needs to be accomplished
  - What is a priority to get done
  - What will be done first, second, etc.
  - What and in what way will parents assist
  - What strategies can be utilized
  - How long should each task take
  - How does this fit into the evening schedule

- Good communication between parents and school personnel in order to determine whether and in what way the work can be modified.
- In order to promote more efficient work completion there may be allowances for the student to dictate answers to parents, a reduction in the amount of work to be done, audio presentation of text, etc.



- In working with a student around homework issues it is important to:
  - Recognize that homework is based on an expectation between the teacher and the student, it is not the parents job to get all the homework done if the student is resisting/not participating.
  - Allowance for natural and logical consequences can be the best way to use the time to lead to future changes in behavior/motivation.

- Another helpful planning strategy can be for the student to review the week on Sunday evening considering school expectations, the other activities and responsibilities and how to arrange their schedule.
- Each morning there can then be a review of what will take place that day.
- A “weekend review” can then occur to see how things went.

- A big challenge is having the student having a clear idea of expectations and what needs to go home for work completion.
- Development of a paper-pencil or electronic method for keeping track of work will be important with revisions along the way as necessary.
- Students may also be encouraged to take pictures of the board with an assignment on their phone or IPAD.

- Use of email in order to send home expectations to review once they are home is also effective.
- Checking school websites regarding assignments and grades can be helpful; however it is important to determine when they are updated and how accurate these are.
- Developing a way for the student to “set aside” those supplies which need to go home throughout the day can be helpful.

- Ongoing efforts to facilitate the students involvement and advocating for themselves is very important over time. Encouraging your son or daughter to speak directly to the teacher can be helpful. Another alternative is for your child to email the teacher with a question or concern. You can assist in formulating this contact as well as monitor the response.

- Many students with executive functioning deficiencies are weak at problem solving. That is once they have failed at completing a task they are stuck about a way to move from plan A to plan B. Assistance is how to approach a problem in a different way or how to gather more information instead of giving up is critical.
- This contributes to the development of mindset and will impact future motivation.

- It is important to consider your own EF profile and how that will interact with the challenges your son or daughter will face.
- Some parents are weak in EF and will need to utilize the assistance of others, employ strategies which they find to assist their child.
- Others will be super EF individuals and will need to resist the temptation to take over for their child.

- As noted earlier, it is important that the ability to engage in strategies and become more effective and efficient be shifted and taken over by the student. It can be helpful to accept that early schooling will need to work on these skills with some lower grades resulting.
- The hard work of developing these skills is important as they are much more critical to adult functioning than crystalized knowledge.



# Resources

- Smart but Scattered by Peg Dawson and Richard Guare, Guilford Press, 2009.
- The Organized Student by Donna Goldberg, Fireside Press, 2005
- Academic Success Strategies by Esther Minskoff and David Allsopp, Brookes Publishing, 2003.
- Promoting Executive Function in the Classroom by Lynn Meltzer, Guilford Press, 2010