

Executive Functions and Learning

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What Are Executive Functions?

“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. Executive functions is an umbrella term for the neurologically-based skills involving mental control and self-regulation.”

from *Late, Lost, and Unprepared*

Executive Functions

- Inhibition
- Set-shifting
- Emotional Control
- Initiation
- Working Memory
- Planning/Organization
- Organization of Materials
- Self Monitoring

from *Late, Lost, and Unprepared* by Joyce Cooper-Kahn, Ph.D and Laurie Dietzel, Ph.D.

Executive capacity is not a measure of intelligence - very bright children may have weak executive functioning skills.

We often focus on “external appearance” because it is apparent, and the connection to managing schoolwork is obvious.

At the unconscious level, executive functions manage incoming information that needs to be organized internally to increase learning.

Beneath the Surface

- Temporal-Sequential Ordering difficulties
- Spatial-Organization difficulties
- Interaction with other neurodevelopmental constructs such as Attention, Memory, Language, Higher-Order Cognition and Neuromotor Function

Keep in Mind

- Tasks must be developmentally appropriate
- Carefully evaluate the pressure placed on a child
- Shorten and reduce the work load at first
- Allow more time to process information
- Reduce anxiety

Internal Organization

- Pace instruction to facilitate comprehension
- Decrease speed and amount of information being presented
- Allow for comfortable, manageable pace for transitions and shifts
- Focus on small steps, one goal at a time, and the desired outcome
- Help to eliminate “overload”

The Child’s Experience

Children with executive weaknesses may find learning experiences to be challenging, frustrating, and stressful as they struggle to meet expectations and goals.

Demands of the School Day

- Be on time for class
- Be prepared with materials
- Pay attention
- Follow instructions
- Refrain from socializing in class
- Transitions: rooms, teachers, subjects, and pace

"I always tell people that from the moment a kid gets up in the morning until he goes to sleep at night, the central mission of the day is to avoid humiliation at all costs."

from All Kinds of Learning Interview with Mel Levine, M.D.

How Can We Help?

- Determine strengths and weaknesses and appropriate interventions
- Set realistic expectations based on a child's individual profile and learning style
- Assist with managing short term demands
- Build independent skills for long-term self management
- Provide encouragement and consistent support

Demystification

“When we teach the child about his own strengths and weaknesses, we give them the words they need for the things they need to work on.”

from *A Mind at a Time* by Mel Levine, M.D.

Process of Organization

- Walk through process with your child
- Find out where the process is breaking down
- Provide opportunities to clean out locker, backpack and workplaces

Organization of Materials

- Allow additional time to organize materials
- Designated places for different materials
- Color code by subject
- Extra set of books at home
- School planner initialed by teacher and parent

Time Management

- Plan ahead and preview schedule and assignments
- Use a calendar to plan weekly schedule
- Make explicit plans for meeting deadlines
- Break tasks into component parts and assist with prioritization
- Make and utilize checklists
- Allow additional time and avoid over scheduling



Task Initiation

- Develop schedules and routines
- Have child explain assignment and his/her completion plan
- Start the task with your child
- Provide positive reinforcement

Following Directions

- Teach directional concepts such as before/after and first/next
- Provide tools such as a calculator or cue cards
- Provide word processor to facilitate and ease the writing process
- Write out directions in a specific order
- Have child repeat directions back to the teacher or parent

Working Memory

- Preview and review material
- Modify amount and pace of information
- Use multi-sensory strategies
- Provide written guidelines for all assignments
- Active maintenance of assignment books and “to do” lists

Transitions

- Create a consistent, predictable routines
- Provide visual and verbal cues
- Teach child to “self-talk” and to seek assistance
- Provide alternate routes
- Allow additional time

Self-Regulation

- Clearly define expectations
- Model and teach acceptable behavior
- Use rewards to motivate desired behavior
- Remember children often don't know that they don't know
- Validate his feelings and remind him of rules and possible consequences

Homework

- Establish routines
- Break tasks into component steps and use checklists
- Have “homework time” (even if there is no homework)
- Provide a distraction-free environment with frequent breaks

Homework

- Use the school planner as a tool and plan the calendar of activities in advance
- Assist with initiation and supervision
- Provide assistive tools
- Homework buddy



The Long and the Short of It

- Long Term: develop habits and routines until automatic
- Short Term: external support, supervision, modifications and accommodations, daily successes, frequent praise

A child's strengths are more powerful than any weakness.

Children should be defined by their potential rather than their limitations. Children flourish and achieve success when they are supported, encouraged, praised, and above all, permitted to be themselves.

“I resist anything better than my own
diversity...
I celebrate myself and sing myself..”

“Song of Myself” by Walt Whitman, 1819-1892

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