

THE EXECUTIVE FUNCTIONS IN LEARNING AND BEHAVIOUR: THE DIFFERENCE BETWEEN UNWILLING AND UNABLE

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The “Executive Functions” refers to a person’s ability to absorb information, interpret it, and make appropriate decisions based upon that information. The executive functions of the brain play a deciding role in *how* a person uses what he or she knows. When a person has unexpected difficulty with learning or behaviour—when he or she seems intellectually able and appears to want to do well—assessing their executive functioning abilities can help to determine whether in fact he or she is *unable* to learn or behave to potential.

Optimal Executive Functioning

Everyday thinking, feeling, and behaviour are mediated by the executive systems of the brain. The executive functions guide thinking and behavior by allowing us to set goals effectively, and to focus our attention and effort where it needs to be and maintain attention appropriately. Executive systems allow a person to inhibit impulses, delay responses, and to adjust their thinking and behaviour as required.

The executive functions affect all situations in a person’s life. From academic circumstances, to social, emotional, and interpersonal ones, to work settings, the executive functions are internal guides for action. Most people develop these processes well during childhood and adolescence, and don’t notice that they’re

there at all. They learn to pay attention well, organize themselves to learn and behave, and follow plans through to their conclusion. Rules for thinking and behaving become second nature.

To understand the meaning of the executive functions, it can help to imagine a manager or “executive” whose job it is to organize a workplace and keep it running smoothly. This bright, energetic, and well-intentioned manager can see what’s really important from day to day and from moment to moment as she directs the activity of the many areas of the company and its many employees. She pays attention to the important things and is not overly distracted by less important ones. She can as easily sustain attention for long periods or shift her attention from one activity to another when needed, and is flexible



enough that the shift of focus doesn't throw her off balance. She has insight into her own thoughts and actions, and can evaluate her progress from moment to moment. She sets goals effectively, plans and organizes well, makes decisions at the right times, generates solutions to problems as they arise and chooses well from the different possibilities.

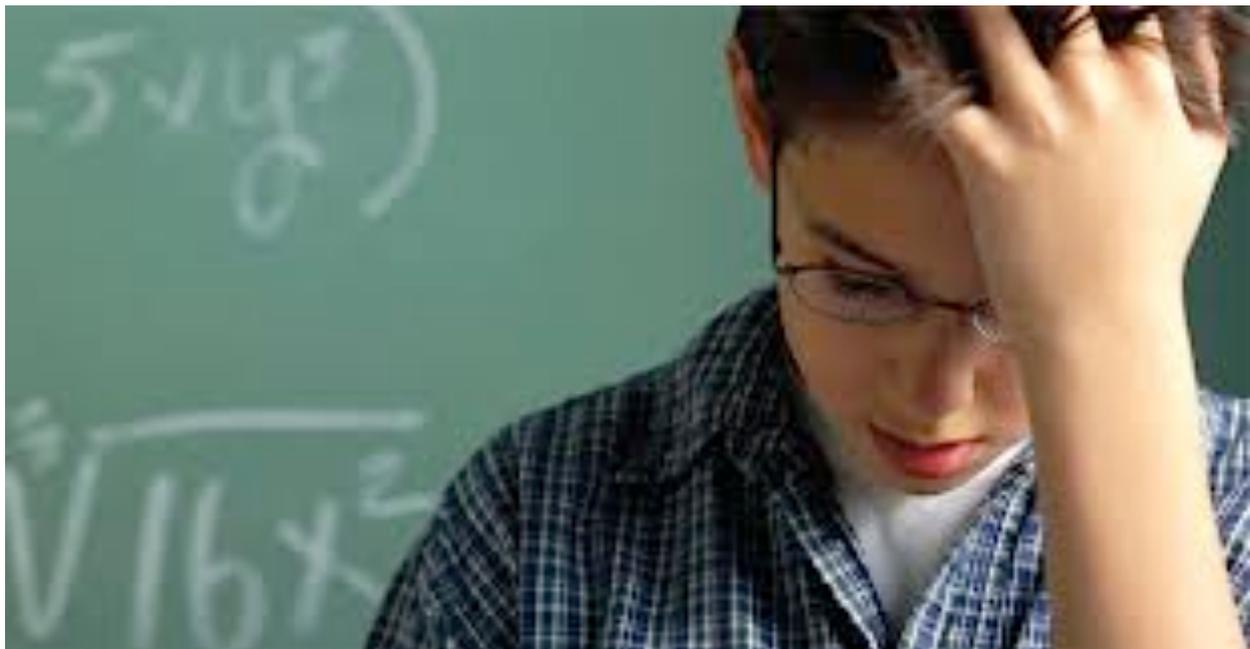
Executive Functioning Difficulties

A person with unusual executive functioning difficulty seems to lack the internal organization and self-management normal for their age. Executive functioning difficulties can keep a bright, well-intentioned person from achieving to his or her potential in various ways. It's as though that person lacks some key ability they need in order to show what they know.

People with many developmental disorders show executive functioning deficits, which can get in the way of school, work, and life. Attention Deficit Hyperactivity Disorder (ADHD) and Oppositional Defiant Disorder (ODD) are two examples. But executive

difficulties can also be relevant to an understanding of reading and writing problems, non-verbal learning disabilities, Tourette's Syndrome, traumatic brain injury, autistic disorders, and mental retardation, as well as Obsessive Compulsive Disorder (OCD), depression, sleep disorders, and chronic stress. It has been argued that, in fact, any psychological or psychiatric problem can be seen under the light of executive functioning difficulties.

Most researchers agree that ADD and ADHD involve an impairment or delay of multiple executive functions. Some argue that the main problem in ADHD is an inability to self-regulate or delay responses, so that a person's thinking and behaviour lack timing and appropriateness. Others see the primary executive deficit in ADHD as the ability to activate behavior or thinking, or to get started at the right time. Still others report that inattention, disorganization, and poor activation, which can persist into adulthood, are more impairing in ADHD than impulsivity and hyperactivity.



There are many aspects of “executive functioning” and researchers have proposed several ways of organizing them. What follows is a commonly used breakdown of the executive functions—used in the *Behaviour Rating Inventory of Executive Function*—often helpful in determining which area or areas of executive functioning a person is having trouble with. Knowing how to help a person with his or her executive functioning problem obviously depends upon knowing as specifically as possible what the problem is.

Behavioural Self-Regulation

Inhibit

- Difficulty inhibiting or controlling impulses
- Trouble stopping own behaviour at the proper time
- *Acting before thinking* (apparent lack of foresight)
- Listening to the teacher, wanting to



make a comment about what is being said, but being unable to pause long enough to realize that the social rule is to raise one's hand before speaking

Shift

- Trouble moving from one situation to another—for example, from math to gym at school, from watching a television program to having dinner, from reading a novel to getting ready for bed
- Difficulty adapting to change
- Inflexibility in thinking or routines
- Trying to use a strategy to solve a problem even when it has proven to be ineffective

Emotional Control

- Difficulty controlling emotional responses age-appropriately
- Increased tantrums, unpredictable outbursts, or aggression
- Poor self-control
- Rapid mood fluctuations
- Trouble coping with normal frustrations

Metacognition (self awareness, ability to think about one's thinking and behaviour)

Initiation and Motivation

- Difficulty taking initiative
- Difficulty getting started on tasks
- Difficulty or lack of interest in goal setting
- Little pleasure in making progress towards a goal
- Trouble with spontaneity in writing or play or conversation

Working Memory

- Apparently poor short-term verbal memory, visual memory, or both
- Failing to notice errors



- Not working toward developing long term relationships

Planning and Organizing

- Reduced ability to stop, plan and consider consequences before acting
- Not learning appropriately from mistakes to change future behaviour
- Less effective use of past experience to plan for the future
- Not considering various strategies for solving a problem, or not taking time to select the best strategy before trying to solve the problem
- Not matching strategies to goals and problems
- Trouble with recognizing one's inner emotional state; leading to acting out emotions, rather than recognizing and verbalizing feelings
- Trouble keeping possessions in order, frequently losing things

Monitor

- Poorly developed identity or self-concept
- Reduced self awareness
- Reduced awareness of, or interest in, personal limitations or weaknesses, even when presented constructively
- Seeing personal problems as externally caused. Unable to see his/her own contribution to the problem.
- Not knowing how to observe themselves and learn from "self monitoring"

Think again about the intelligent, well-intentioned company manager. Any of the above executive functioning difficulties could get in the way of the manager's success. School or work problems are commonly the result of organizational, time-management, and problem solving difficulties, trouble learning new information, and generally

underachieving relative to apparent potential. Like the fictitious manager, a student with executive functioning difficulties may have trouble following through with tasks, and may make careless errors. Executive functioning troubles can also take a large toll on social functioning. A sufferer can have trouble remaining appropriate with peers, frequently interrupt others, fail to notice social cues, have trouble seeing someone else's point of view, and seem odd because he or she makes unusual connections in conversation.

Assessment and Treatment

Executive functioning problems often don't show up in psychological or educational testing, or even in neuropsychological testing. Many people with executive delays have high



IQ's and can do well academically under certain circumstances.

Treatment of executive functioning difficulties varies depending upon the nature of the difficulty. As needed, treatment addresses issues of motivation, goal setting, problem solving, self-monitoring, and others' perspectives. to record significant to use these new strategies. For medications can help functioning capacity.



increased awareness of Clients sometimes learn daily experiences, and experiences to learn some people, improve executive

For more information functions of the brain learning, speak with a your pediatrician or

about the executive and their importance for psychologist or with family doctor. □

