

# Executive Function

## Practical Applications in the Classroom



All teachers have some students who are intelligent and capable, but have weaknesses in “executive function” (EF) skills which impact their performance in the classroom and cause a number of difficulties. This reference guide is designed to provide practical strategies for helping students strengthen EF skills, as well as key supports and accommodations that are so important for those with EF impairments (e.g. ADHD).

## Understanding Executive Function (EF)

### Definitions & Descriptions of Executive Function

- The command and control processes of the brain
- The management systems or functions (“overseers”) of the brain
- Cognitive processes or brain functions that enable a person to engage in problem-solving and goal-directed behaviours

### Executive Function Analogies

- Chief Executive Officer (CEO) – responsible for analysing and decision-making, and taking actions required to achieve goals
- Conductor of a symphony orchestra – responsible for managing, directing and integrating all of the individual components/other cognitive functions

### Other Important Information About EF

- The frontal lobes (particularly the prefrontal cortex and extended networks) are believed to be the centre of executive functioning.
- All students benefit from learning strategies to build and strengthen EF skills.
- EF delays and impairments are common in children/teens with some neurobiological disorders and disabilities – particularly ADHD.
- Students with EF impairments need supportive strategies and/or accommodations for school success.

### EF Components and Processes

Exactly what constitutes all of the EF skills has not yet been determined. Researchers and experts believe EFs include some of the following:

- **Inhibition:** the ability to stop, put on the brakes and think before making a response
- **Organisation:** creating structure or order (of one’s materials/ belongings, space, thoughts; and making a system for doing/ planning something)

- **Planning:** designing a course of action (long and short-term) with strategies and sequence of steps to follow
- **Prioritisation:** ability to determine relative importance of various tasks and organise, plan and sequence actions accordingly
- **Activation/Initiation:** arousing effort and motivation to begin an action or work on tasks (particularly those which are tedious or not of interest)
- **Time Awareness & Management:** awareness of how long things take, and planning/acting accordingly; it involves completion of tasks within deadlines/due dates
- **Sustained Attention:** maintaining alertness and focus; resisting distractions
- **Working Memory:** ability to hold information in mind long enough to do something with it (solve a problem, complete a task). It is likened to a small table-top for placing information temporarily while working.
- **Self-monitoring/Metacognition:** being aware of and self-checking one’s own behaviour, thought processes and comprehension
- **Shifting/Flexibility:** ability to be adaptable and adjust or shift when needed (one’s thinking, actions, behaviour)
- **Goal-Directed Persistence:** perseverance; maintaining the effort and follow-through with actions needed to achieve goals
- **Emotional Control:** ability to manage and self-regulate one’s frustrations and emotions

### What Teachers Need to Know About EF Impairments

- Research indicates that children and teens with ADHD have a developmental delay of approximately 30% in EF skills; affecting their behaviour and self-management. So, expect a 10 year old with ADHD to have the EF maturity of a 7 year old, and a 15 year old to have the EF skills of a 10 or 11 year old.
- EF impairments can also occur in individuals with other brain-based disabilities (Learning Disabilities, Autism Spectrum Disorders).
- EF weaknesses commonly cause academic challenges to some degree (mild to severe), regardless of how intelligent, gifted and capable the person may be.
- Students with an EF impairment can often be unfairly perceived or labelled as “lazy”, “unmotivated” or simply as “not trying hard enough”. This is not the case. Those behaviours that frustrate teachers and parents (chronic lateness, disorganisation, missing assignments, poor work production) are not deliberate, but part of their disorder/disability.