# Executive Function: The Gateway to Success!

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OBJECTIVES

Participants will:

* Understand the connection between executive functioning and being successful in education, work, relationships, and life
* Understand how executive functions manifest into observable management areas and are foundational to everything we do
* Discuss and practice addressing executive disfunction with multiple strategies

PLANNING A TRIP -ACTIVITY

You receive an email inviting you to attend your family reunion that is happening in 6 months at an out of state location. You, your partner, and 3 children decide to attend. You have a dog and 3 cats.

1.Make a list of all the things that need to be done to plan and take this family reunion trip.

2.Type in chat the top 5 to - do actions and possible barriers to following through.

Highway and bridge reflected in sideview car mirror

IN THE WORLD BEYOND SCHOOL…

What are the characteristics of a successful independent learner and productive citizen?

At home?

At work?

In College?

In relationships?

(TYPE IN CHAT)

SUCCESS IN SCHOOL

Top 10 Skills as identified by a survey of 8,000 teachers (Elliot & Grisham, 2006)

* Listen to others
* Follow the steps
* Follow the rules
* Ignore distractions
* Take turns when you talk
* Ask for help
* Get along with others
* Stay calm with others
* Be responsible for your behavior
* Do nice things for others

PREPARES YOUNG PEOPLE FOR SUCCESS IN ADULTHOOD

Common list of soft skills employers want:

* Social skills, interests, involvement
* Communication skills
* Interpersonal abilities
* Problem solving
* Teamwork
* Adaptability/flexibility

EXECUTIVE FUNCTIONS DEFINED

* Cognitive processes that enable individuals to engage in goal-directed or problem-solving behavior (Council for Exceptional Children, 2011)
* Allow us to organize our behavior over time and override immediate demands in favor of longer - term goals

(Dawson & Guare , 2010)

EXECUTIVE FUNCTIONS (Dawson & Guare)

### Executive Function

Emotional Control

Inhibit

Goal Setting/ Planning

Organize

Initiate

### Definition

Regulates emotion to be appropriate to situation

Delays certain activities or response for sake of others

Setting goals and identifying steps to take

Establishing order in a place or activity

Begin a task or activity

### Signs of Difficulty

Easily upset or excited, overreacts, frequent mood

changes

Distractible or impulsive, cannot delay gratification

Sets unrealistic goals, starts work at last minute, fails to anticipate consequences

Scattered, disorganized approach to solving problems, materials

Trouble getting started, may appear defiant

### Executive Function

Working Memory

Shift

Self-Monitor

### Definition

Holding information in mind while performing other tasks

Smoothly transitioning from one task to another

Assessing progress toward goal or effect on others

### Signs of Difficulty

Forgets assignments, materials, classroom procedures, remembers only part of directions

Difficulty coping with changes in routine, thinking “outside of the box”

Doesn’t notice how others react to behavior, asks for help rather than trying first, avoids problem-solving games

EXECUTIVE FUNCTIONING…

Is sharply reduced when:

* executive functioning capacity must be devoted to managing “lower level” (cognitive) skills and responses which are not automatic or fluent thus the capacity for “higher level” (metacognitive) functions is taken; (takes up mental desk space)
* executive capacity itself is reduced due to some sort of higher- level disability or to lack of fluency with executive strategies.

UDL Guidelines

EFFORTS TO EXPAND EXECUTIVE CAPACITY…

In two ways:

* by scaffolding lower level skills so that they require less executive processing; and
* by scaffolding higher level executive skills and strategies so that they are more effective and developed.

UDL Guidelines

NEURONS THAT FIRE TOGETHER, WIRE TOGETHER

* ALL BRAINS can develop executive function skills
* Brain pathways only get better at something by doing it repeatedly
* Myelin sheaths grow in the brain by DOING

THIS MEANS…

* Our planning and teaching must be intentional
* Strategies need to match challenges
* Repetition of strategies must be planned

Picture of a brain showing lit neural pathways showing interconnected nature of the brain.

HOW DO EXECUTIVE FUNCTIONS DEVELOP?

Graphic of 4 consecutive colored brain images depicting executive function development from 5 years old through 20 years old. Much more red and yellow in the prefrontal cortex, which is less mature, at 5 years versus more mature, with blue and purple colors as the person ages.

Chart of ages 0 through 85 depicting how EF skills grow. Dramatic growth between 3 to 5 years of age then slightly decline after age 30

RESOURCE: LEARN MORE ABOUT EF DEVELOPMENT

“Executive function and self - regulation skills are like an air traffic control system in the brain — they help us manage information, make decisions, and plan ahead. We need these skills at every stage of life, and while no one is born with them, we are all born with the potential to develop them.”

[A Guide to Executive Functioning](https://developingchild.harvard.edu/guide/a-guide-to-executive-function/)

Center on the Developing Child, Harvard University

WHO STRUGGLES WITH EXECUTIVE DYSFUNCTION?

* Difficulties with Executive Functioning are associated with learning challenges and a greater likelihood of behavior problems, and they are a prominent feature of many emotional and behavioral disorders (EBDs); neurodevelopmental disorders (e.g., attention deficit hyperactivity disorder (ADHD); autism spectrum disorders (ASD); and specific learning disabilities that interfere with children’s education. Executive Functions: Implications for Education
* “Some children may need more support than others to develop these skills.”

“Adverse environments resulting from neglect, abuse, and/or violence may expose children to toxic stress, which disrupts brain architecture and impairs the development of executive function. ”Developing Child – Harvard University

* Temporary Executive Dysfunction can be the result of concussions and other head injuries

HOWEVER, the good news is…

Executive Function skills are malleable, meaning they can change and are influenced by both positive and negative experiences. For example, stress, poverty, and disadvantage are associated with worse Executive Function skills. However, supportive caregiving, high quality early education, and even practice can help improve Executive Function skills.

HOW EXECUTIVE FUNCTIONS MANIFEST

* Self Management
* Time Management
* Materials Management
* Information Management

Picture of a man looking through a telescope which symbolizes how executive functions look and can manifest

MANIFESTATION AREA: SELF-MANAGEMENT

* Taking responsibility for your own behavior, actions, and well - being
* Self - regulation
* Sensory regulation
* Social competence
* Impulse control

### Executive Functions:

Emotional Control

Inhibitory Control

Initiating

Shifting

Self-Monitoring

MANIFESTATION AREA: TIME-MANAGEMENT

* Ability to use time effectively and productively
* Understand the abstract concept of time
* Chunk routines/projects into pieces and know how long each piece will take
* Know when to start, how long to work, when to stop

### Executive Functions:

Goal Setting

Planning

Initiating

Working Memory

Shifting

Self-Monitoring

MANIFESTATION AREA: MATERIALS-MANAGEMENT

* Ability to manage the “stuff” of school
* Having the right materials at the right time
* Knowing everything has a place
* Remembering to keep things in their place

### Executive Functions:

Organizing

Initiating

Working Memory

Shifting

Self-Monitoring

MANIFESTATION AREA: INFORMATION-MANAGEMENT

* Ability to acquire, retain, and use information
* Can take notes
* Can organize facts, information
* Can manipulate information in creative ways

### Executive Functions:

Goal Setting

Organizing

Initiating

Working Memory

Shift

Self-Monitoring

WHAT YOU SEE ON A DAILY BASIS…

might really be impacted by what is happening below the surface.

Graphic of an iceberg with the manifestation areas above the surface and the executive functions below the surface of the water

ASSESSING EXECUTIVE FUNCTION

“Can’t do, or won’t do?”

Be an Executive Function detective: find out what the child is

capable of, and under what circumstances.

* Informants can include parent, teachers, past teachers, coaches, student (observation, work samples, interview)
* Be comprehensive using standardized and informal assessments

### Assessment Approach:

Indirect

Direct

### Informal Method

Indirect

* Interviews of parents and teachers
* Review of school records
* Interpretation of parent and teacher ratings and self-reports

Direct

* Child interview
* Systematic and nonsystematic behavioral observations
* Interpretation of standardized tests
* Administration and classroom work samples

### Formal Method

Indirect

* Parent behavior ratings
* Teacher behavior ratings
* Self-report ratings

Direct

Individually administered standardized tests

McCloskey

CONSIDERATIONS WHEN TEACHING EXECUTIVE FUNCTION SKILLS

* Consider the developmental progression of skills:

What is an age-appropriate expectation?

* Consider whole group, small group, individual:   
  Could this support help everyone?

HOW TO MANAGE EXECUTIVE FUNCTION CHALLENGES

* Modify the environment
* Teach the skill
* Use incentives

Dawson & Guare, 2010

Graphic depicting modifying the environment by changing physical or social environment, adapting tasks, and providing cues and supports.

Graphic depicting the sequence of teaching the skill by defining, setting goal, establish procedure, supervise, and evaluate.

Graphic depicting using incentives by layering perferred and non-preferred activities, give specific feedback, menu of rewards, and using student strengths, preferences, and interests

REVIEW & REFLECT -ACTIVITY

Think back to the Family Reunion activity where you listed what you would need to do.

Which method would have been effective in bridging barriers to make the to - do list more effective?

* Modify the environment
* Teach the Skill
* Use Incentives

Picture of woman with her hand to her ear, listening to represent a reflection activity.

Executive Function Student Profile

Screen shot of the executive functioning student profile matrix including EF management areas and spaces for strategies to address each area

Thank you!

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