

Executive Functioning: Regulating Behavior for School Success

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In an earlier column titled, "Becoming a Strategic Learner", I spoke about learning strategies, and how important it is to help students become "Strategic" in their approach to learning, and I discussed some ways that teachers can promote student learning by both teaching and reinforcing the use of effective strategies to their students and by imbedding effective teaching strategies into their classroom instruction.

What was missing from that discussion was any real focus on the kinds of "Thinking" students need to do when they are confronted with different types of learning challenges and opportunities.

These "Thinking Ingredients" fall under the umbrella term "Executive Functioning."

A Working Definition of "Executive Functioning"

"Executive functioning" is a term used to describe the many different cognitive processes that individuals use to control their behavior and to get ready to respond to different situations.

Whether the task at hand is to read a newspaper article, write an e-mail to a friend, have a telephone conversation with a relative or join in a soccer game at the park, executive functioning is at work behind the scenes, helping to accomplish the desired goal.

In other words, executive functioning:

- Is conscious, purposeful and thoughtful
- Involves activating, orchestrating, monitoring, evaluating and adapting different strategies to accomplish different tasks
- Includes an understanding of how people tap their knowledge and skills and how they stay motivated to accomplish their goals
- Requires the ability to analyze situations, plan and take action, focus and maintain attention and adjust actions as needed to get the job done

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We All Have It and We All Do It

Sometimes these processes seem to happen in a seamless and automatic way, and at other times they seem to not happen quickly enough (or not at all), resulting in what some people refer to as "Getting Stuck," not knowing what went wrong and having a hard time discerning what to do next.

At its best, executive functioning allows us to:

- Be mentally and behaviorally flexible to all sorts of task demands
- Adjust our thinking to accomplish our goal (even when there are changing conditions along the way)
- Adapt our reflexes and responses in ways that result in coherence and smoothness of responses.

How does someone know if their executive functioning abilities are well tuned and ready for action?

A few indicators might be if you:

- Make good use of past knowledge and experience (both before you start an activity and while it is ongoing)
- Take notice of the current situation for cues about what is expected of you and how you might best proceed doing the task at hand
- Think about what you are doing (or are about to start doing)
- Imagine what, if any, implications it has for you in the future
- Allow yourself to feel whether this activity has any personal values or relevance to you (taking your emotional temperature really does matter because it often has a very real impact on how you think!)
- Feel you are ready and can be flexible in changing your thinking along the way if need be
- Can delay gratification (e.g., do not jump to conclusions too quickly)
- Inhibit any impulsive responses that might take you off track or distract you from your goal

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- Are able to adjust the way you think and respond when the rules change unexpectedly.

Learning Disabilities and Executive Functioning

An NCLD Fact Sheet titled, “How Does Executive Functioning Affect Learning” describes how in school, at home or in the workplace, we're called on all day, every day, to self-regulate behavior. Normally, features of executive functioning are seen in our ability to:

- Make plans
- Keep track of time
- Keep track of more than one thing at once
- Meaningfully include past knowledge in discussions
- Engage in group dynamics
- Evaluate ideas
- Reflect on our work
- Change our minds and make mid-course corrections while thinking, reading and writing
- Finish work on time
- Ask for help
- Wait to speak until we're called on
- Seek more information when we need it

Problems with executive functioning may be manifested when a person:

- Has difficulty planning a project
- Has trouble comprehending how much time a project will take to complete
- Struggles to tell a story (verbally or in writing); has trouble communicating details in an organized, sequential manner
- Has difficulty with the mental strategies involved in memorization and retrieving information from memory
- Has trouble initiating activities or tasks, or generating ideas independently
- Has difficulty retaining information while doing something with it; (e.g., remembering a phone number while dialing)

These problem behaviors are often the descriptors we hear about students with learning disabilities (LD) as well as those with ADHD and language processing disorders.

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Parents and teachers complain that they:

- "Forget to look ahead"
- Have trouble planning and setting goals
- Have difficulty sorting, organizing and prioritizing information
- Focus either on details or the big picture at the expense of the other
- Have difficulty shifting from one activity to another, especially when rules and tasks demand change
- Have a hard time juggling multiple details in working memory
- Struggle shifting between information that is literal vs. figurative, or past vs. Current, etc.
- Are often overwhelmed by the increased and varied work load in the middle and upper grades
- "Get It" (e.g., the information being taught, the work tasks assigned) but often "Don't know what to do with it" (e.g., how to complete the task in a way that demonstrates their knowledge).

For individuals with LD, problems with executive functioning are often complicated by performance anxiety.

Feeling anxious about what to do and how well you're doing (especially when, as is the case with LD, you are "winging it" without a strategy or plan of attack) can easily lead to feeling overloaded and overwhelmed.

This in turn leads to exhaustion, inattentiveness, and a cycle of insecurity and feeling out of control. Not a great scenario for learning!

An Excellent Resource

A fine summary of executive function difficulties and learning disabilities can be found in the fifth chapter of a new book titled: "Executive Function in Education: From Theory to Practice", edited by Dr. Lynn Meltzer (2007, Guilford Press).

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The chapter discusses some of the core executive function processes that affect academic performance:

- Selecting appropriate goals
- Initiating work
- Organizing
- Prioritizing
- Memorizing
- Shifting strategies and being flexibly in thinking
- Self monitoring and self checking

The chapter also includes an explanation of the inter-relationships between:

- Strategy use
- Effort
- Self concept
- Academic performance.

Useful sections can also be found on reading comprehension, written language, independent study, homework and long-term projects and test taking.

This chapter also addresses the challenge of identifying difficulties in executive function because of "Diagnostic Fuzziness," a term that means exactly what it sounds like.

There is much overlap between the shared behaviors we typically attribute to executive function LD, and ADHD.

There is also considerable controversy around how:

- Motivation
- Effort
- Persistence

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affect the types of behaviors that fall under the executive function umbrella.

And the part of this chapter that I like the best talks about "Intervention Approaches" on two different levels:

- 1) The environment
- 2) The person

It offers (as simplified and paraphrased below) a set of principles that are important for teaching all students, and are especially critical for students who show weakness in executive function processes:

1. Executive function strategies should be taught explicitly and systematically.
2. Teach students how when and why specific strategies should be used
3. Embed strategy instruction into the curriculum
4. Students should be encouraged to modify and personalize strategies to match their own learning preferences
5. Practice using strategies with different tasks across content areas
6. Keep motivation high (as being a strategic learner can be very hard work!)
7. Help students set realistic goals and use self-monitoring and self-management strategies to identify areas of weakness and self-correct behaviors and performance
8. Make sure that students experience success in using strategies and encourage their consistent use over time
9. Count "Strategy Use" as part of a student's grade (focus on the "how" of learning, not just the "what")
10. Help students understand the limitations of hard work without a strategic plan for learning; effective executive function tools and strategies can greatly improve learning efficiency

Additional Resources

Look here for more information about executive functioning:

NCLD Fact Sheet: Executive Function

Denckla, M.B. (1994). Measurement of executive functioning. In G.R. Lyon (Ed.),

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Frames of Reference for the Assessment of Learning Disabilities: New Views on Measurement Issues (pp117-142). Baltimore: Paul H. Brookes Publishing Company.

What Are Executive Functions and Self-Regulation and What Do They Have to Do With Language-Learning Disorders? - A paper by Bonnie D. Singer and Anthony S. Bashir printed in LANGUAGE, SPEECH, AND HEARING SERVICES IN SCHOOLS Vol. 30 265-273 July 1999 © American Speech-Language-Hearing Association 265.