

Executive Functioning

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Executive Functioning is the brain's ability to absorb information, interpret this information, and make decisions based upon this information.

For example, most people have a routine when they get up in the morning. Some mornings you might look out the window and see something is dripping from the sky. This dripping is interpreted as "rain" which implies a set of rules (i.e., needing to wear different clothes, the soccer game will be canceled which means you need to make other arrangements for an after school activity, rolling down the windows while you drive is not wise, you don't need to water the grass today, etc.).

Our entire life is mediated by our executive system as each step of the day brings about various sets of "rules" that we need to live by. The most complex of these is social interaction (if you meet someone and they are crying your response is going to be very different than if they were smiling).

The executive functioning system is analogous to an "executive" whose job it is to organize and assure things are running smoothly. For many students, the executive functioning system of their brain is not working properly, meaning that:

- a. either it doesn't receive the appropriate signals (such as reading facial expressions)
- b. doesn't interpret appropriately (such as noticing that someone is crying, but not understanding why or interpreting incorrectly such as thinking the situation is funny)
- c. or not able to make decisions based upon this information (i.e., when someone is crying this means I need to change my facial expression from happy to concern)

Areas that may be affected:

* **Loose Associations:**

When one thought is loosely associated with another. For example, if a person said, "I went to the barber shop yesterday. That's a nice striped shirt you are wearing". The strips on the barber pole and the stripes on the shirt "loosely" connect these two sentences

* **Attention Inhibition and Impulsivity:**

Paying attention and inhibiting responses (Listening to the teacher and wanting to make a comment about what is being said, but not blurting out the comment. Instead pausing between the thought of having the comment and actually making the comment to realize the social rule is to raise one's hand before speaking).

* **Shifting ("Switching") Attention:**

Shifting one's focus between two different things (i.e., copying information from the black board requires shifting between the black board and a notebook). Shifting can also occur in the following

ways:

1. From internal to external stimuli
2. Relevant external stimuli vs. irrelevant external stimuli
3. From self to others
4. From another person back to internal stimuli for comparison of what s/he said vs. own thoughts
5. Generating internal thoughts as compared to what s/he will think
6. Verbalizing thoughts while comparing person's reaction to see if reaction matches predictions made in step 4
7. If s/he has a different reaction, search internal "database" to problem solve what went wrong and how can error be corrected (I.e., need more information? Need clarification of verbalization - Oh, I mean...)

* ***Literal Thinking***

Because one must shift from the concrete to the abstract in order to understand jokes and metaphors.

* ***Transitions / Flexibility***

Before one attends a new event or switches an activity there appears to be a sort of priming that occurs. During priming people think about what the new situation might be like (i.e., when one goes to a job interview, one attempts to prepare). This "prep time" or priming is a way of easing anxiety. Many students have difficulty or no ability at all to prime for events, which is why social stories can be so calming. When one can't prime or has ineffective priming skills (i.e., assuming things can only be one way) anxiety or tantrums can occur.

* ***Problem Solving***

In order to problem solve, one needs to:

- Know there is a problem to begin with
- Be able to come up with various options
- See the consequence for the various options
- Choose the best option

General Tips

1. Design classrooms/teaching activities based upon organization systems - e.g., give students an "aerial" perspective then zoom in on specifics.
2. Start the day by going over a schedule board that the students can manipulate (if the activity is out of the classroom have a list of what needs to go with the activity - outside = boots and coat) / Schedule within a schedule.
3. Color code the board based upon arousal (e.g., active = blue, inactive = yellow).
4. Tell the student what the goal of each activity is - they may not infer this information on their own ("the goal is to have 4 squares cut).
5. Give examples of what a finished product should look like.

6. Discuss why this activity is relevant to their lives.
7. Emphasize problem solving skills.
8. Teach for the process - not results. Having students learn the process of an activity is invaluable (emotional bonding is more important than teaching a lesson).
9. Teach with full understanding and generalization of skills - not rule-based logic (unless that's your last resort).
10. Always tell the student "WHY" (Don't hit Johnny because it will hurt him and he will be sad.).
11. Before eliminating, extinguishing, stopping, or decreasing OCD behavior attempt to figure out what purpose it is serving. If it is for organization, you need to replace the organization before eliminating the behavior.
12. Use your judgment - why do you think the student engages in a particular behavior? (see motivation assessment scale).
13. What happens if the student doesn't participate? Angry? Falls apart? Looks lost?
14. Replace with more functional "rituals" while teaching the skills that underlie the need for the ritual in the first place. (e.g., student must sit in the blue chair at circle time because s/he doesn't know what the purpose of sitting in a chair is).
15. Do not stop teaching once you have achieved rote learning!
16. Once a student can achieve a goal via rote, now it's time to generalize, generalize, generalize... to various people, locations, and objects.
17. When engaging in an activity with different parts (e.g., scissors, glue, paper scraps, etc.) have specific places for each part.
18. Have a scissor box, a glue box, a box for scraps, a box for completed pieces, etc. - If everything has a "home" then it's easy to figure out where it goes.
19. Alex's house - if something is not where it belongs I just don't know where else to look - this causes stress.
20. Always have visual targets/markers.
21. When learning to line up - have feet, colors, or other targets on the floor ("Johnny, stand on the green dot" - vs. "in line" which is too vague).

22. If walking in a straight line down the hall, have colored tape down the hallway to delineate where to go.
23. If sitting on floor in circle - use carpet squares (bring these squares to activities outside of class - e.g., music, art, etc.).
24. Have an obvious marker outside the classrooms / bathroom students will use.
25. Figure out how the child learns best and convert all material to that modality.
26. Always use visual/auditory cues - if you're doing a cooking activity have all of the steps "written" out using icons or pictures.
27. When using step by step instructions - don't leave out the last step - e.g., come back!

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