Executive Functioning in the Classroom: Strategies for Strengthening Executive Function Skills in all Students

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Amy Miller’s Disclosures

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- Co-Chair: The Reading Group, Opportunity Santa Fe
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- Instructor: Shelton School of Dallas, MSL CALP Teacher Training Certification Program
- Teacher Trainer and Coach: various schools and organizations in the region

Primary References

- Fahy, Jill (2014). Language and Executive Functions: Self Talk for Self Regulation. Department of Communications Disorders and Sciences, Eastern Illinois University, Charleston, IL.
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What is Executive Function?

those cognitive abilities needed for goal-directed action

Barkley’s Definition of Executive Functioning

EF is the use of self-directed actions (forms of self-regulation) to choose goals, and to select, enact, and sustain actions across time toward those goals, usually in the context of others and often relying on social and cultural means. This is done for the maximization of one’s longer-term welfare as the person defines that to be.

(Barkley, 2012)
The EFs Create Four Developmental Transitions in What is Controlling Behavior

- External to Internal (private or internal)
- Others to Self
- Temporal now to Anticipated future
- Immediate to Delayed gratification (Decreased Temporal Discounting of Delayed Consequences) (Barkley, 2017)

2 EF Categories (Barkley, 2013)

EF Comprises a Single Domain that Can Be Usefully Subdivided into two Broad Dimensions

**Inhibition:**
- Motor
- Verbal
- Cognitive & Emotional

**Meta-Cognition:**
- Nonverbal WM
- Verbal WM
- Planning/Problem-solving
- Emotional self-regulation

Where does ADHD fit into them?

2 Key Components of EF Development:

- Self-Talk/Internized Language
- Visualization
Much focus has been given in recent years to the concepts of “grit” and “growth mindset” as essential qualities for success.

- Can a person have “grit” without self-talk and visualization?
- If I cannot visualize what “done” looks like, what am I sticking to again?
- If I cannot “talk myself through it” and ultimately make personal meaning of my experiences, can I tell myself the story that I can “get better at something”?
- If I do not have an innate sense of time and of the relationship between things, the ability to understand and name categories, cause and effect, or to draw a conclusion about my own experience, can I really visualize myself achieving a goal that I haven’t internally articulated?

Effect of Language Disorders and Learning Differences

- Research demonstrates that adequate language is necessary for the development of regulatory self-speech.
- Children with language disorders and language based learning differences demonstrate significant delays in aspects of their language development.
- When language development is delayed, executive functioning skills are delayed (Fahy, 2014).

Key Components of “Prosthetic Environment”

- Make the abstract concrete
- Use “road maps” to support visualization of expectations, procedures, and sequences
- Always provide an example of what “done” looks like
- Teacher models self-talk out loud
- Provide students with mad-libs and scripts to anchor self-talk
- Use immediate, visual feedback for behavior management
- Do not assume that students “should” know anything!
Montessori: didactic, sequenced, multi-sensory materials

MACAR: Montessori Applied to Children At Risk
- Developed by June Shelton and Joyce Pickering, SLP/CCC, CALT, QI, LDT, AMS-EC, HUM.D at Shelton School of Dallas
- Implemented at May Center for Learning in Santa Fe
- Takes materials and principles of Montessori and pairs them with best practices for the education of children with language-based learning differences such as dyslexia
- Multi-sensory, systematic, explicit, diagnostic, and individualized in methodology

MACAR classrooms create what Barkley calls a “prosthetic environment” for those with EF deficits
- Focus on language development across curricular areas
- Procedural knowledge is explicitly taught, rehearsed, and reflected upon for all aspects of classroom culture
Importance of Visualization

- A person must know what "done" looks like in order to engage in goal-directed actions.

Importance of Self-Talk

- "Speech thinking" or self-talk allows us to shift our thinking from describing the present moment to reflecting on the past or planning for the future (first, then, next, after that, before that)—GOAL ORIENTED and TIME BASED.

Strategies for Teaching Visualization
Our students are not visualizing the future

Help students put on their Future Glasses!

Help students to visualize the future

- Provide images of what you would like them to write about—use visual sequence cards for idea mapping, mad lib sentences for syntax mapping
- Take a picture of the “Done”
  - Ask: What are the key features? Circle key features on a photograph
- Have students draw a “future sketch” of what “done” looks like
- Use “Get Ready, Do, Done” to visually plan the sequence of action
- Use visual checklists and visual timers to make explicit the sequence and structure of expectations
Create the Road Map

- Sequence Cards help students visualize ideas and move forward in the sequence.
- This is how you bake a cake. First, __________. Next, __________. Then, __________. Finally, __________.

Create the Road Map

Mad Lib thesis statement:
- In Dork Diaries, Nikki learns three important lessons: __________.
  Lesson one: __________. Evidence from book: __________. Explain it: __________.
  Lesson two: __________. Evidence from book: __________. Explain it: __________.
  Lesson three: __________. Evidence from book: __________. Explain it: __________.

Lack of Visualization and Internalized Language lead to:

“Ooh, I can’t remember what I did this weekend. What am I going to write about? This is going to take forever…”
Create the Road Map

- Journal Prompt: Write about what you did this weekend
- Student: I don’t remember anything I did this weekend (no visualization or internalized language happening)
- Teacher: Did you go anywhere this weekend?
- Student: I stayed home this weekend.
- Teacher (draws 5 blanks on the student’s paper while saying “I stayed home this weekend): Fill in those blanks. I’ll be back!
- Kids can write entire essays this way.

What are the key features of being ready for dance class?

Create the Road Map for Long-Term Assignments
Circle, Underline, Count, Complete

- Preview the assignment completely
- Circle the direction or action words (what am I supposed to DO)
- Underline the words that go with the action (read the book)
- Count the number of steps involved
- Make a future sketch and a plan to complete all steps in a timely manner (adapted from: Executive Functions: A Blueprint for Success Guide, Rush Neurobehavioral Center, New York: School Specialty 2016)

Future Sketch

Make a Plan

Get Ready: white paper bag, scissors, glue, magazines to cut out pictures, construction paper to cut out note cards, ruler to measure notecards, stuff to make my artifact (tbd)

Do:
1. Draw cover of book on one side of bag
2. Collage cut out magazine pictures on other side
3. Measure and cut up at least 12 notecards from construction paper
4. Write summary of 1 element of narrative on each note card: title, main theme, 3 major characters, favorite character, why is it historical fiction, conflicts/resolution, setting, book facts
5. Put cards in bag
6. Make artifact
7. Put artifact in bag

Done: SEE FUTURE SKETCH FOR WHAT DONE LOOKS LIKE
Get Ready, Do, Done  
Planning. Start with the end in mind. What will it look like?

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Create the road map for classroom expectations: Work Strips and Visual Checklists

- In MACAR classroom, work strips provide the road map for the day.
- Students are expected to complete all works on their strips in one day.
- Teacher might decide the order of task completion or allow student to choose the order.
We love using visual timers in conjunction with the work strip!

- Students write on their work strip card: how long do you think this task will take you?
- Set the timer
- When finished, write how long it actually took you
- Or other variations depending on goal of task

Use a working clock to visualize the passing of time

- Use a white board marker to color in the total time allotted for this activity with half the color and half the other color
- Set digital timer for half-way point
- When it goes off, check in: am I halfway done? If not, what do I need to adjust to get done on time?
- (adapted from Ward, Sarah, M.S., CCC/SCP)

Strategies to support Internalized Language
Getting to the goals: Building Self-Regulation Success

- The key to supporting students with language and EF deficits is to provide what Barkley calls “prosthetic supports” that will help students self-monitor, problem-solve, and ultimately, self-regulate.

Challenges with Self-Monitoring

- Typically result from a lack of visualization and/or internalized language
- Deficits in language executive functions lead to the inability to hold the now and the next, the predictable and the novel
- If I can’t see what it should look like while I am engaged in the task itself, I don’t have a model to compare my performance to
- This can also lead to rigid perceptions of self—either believing I never do anything right or I am doing it right and don’t need to fix anything

Strategies for Self-Monitoring

- Visual reminders/models to check work against or identify emotions
- Frequently ask yourself and student to explain what she’s doing now and what the next step will be
- Provide consistent, visual and immediate behavioral feedback
- Ask child to provide feedback on how he thinks he’s doing
- Teacher talk out loud to let student “eavesdrop” on your internalized language
- Use scripts that make explicit “self-talk”
Visual Checklists for Short Term Goals

Visual strategy for self-monitoring

Paint strips with shades, slide a paperclip up and down

Visual Strategy for self-monitoring emotional regulation

- The Mood Meter
- Allows child to place his/her photo where she’s feel in the meter
- This builds recognition of emotional states, language to name emotions, and prompts highly structured discussion around emotions
- Also exemplifies that emotions are not fixed states
Mindfulness is helpful for students to practice self-awareness, labeling emotions, and paying attention

- Mindful Schools is a great resource for teacher training
- Mind Up program is also a good resource

Consistent, visual, immediate system for behavioral feedback

- Provide immediate, visual feedback through the use of a chart or sticky note—at our school, we use checks and dots
- Give students a check each time they are demonstrating positive learning behaviors—this should be tied to self-regulation, not to academic performance
- Give students a dot each time they are engaging in behavior that is off task or not in line with expectations
- No language—just visual feedback
- Remember: you are going to change behavior with checks, NOT dots—don’t be stingy with the checks
- Don’t threaten to give a dot—this creates a carrot and stick framework
- Don’t tie to rewards—this creates a carrot and stick framework

Model Self-Talk and Encourage Ownership

- Avoid “telling” language, and focus on “thinking language”
- Always do a THINK-ALOUD for EVERYTHING—let students eavesdrop on your conversation with yourself
- Comment instead of questioning
- Declare instead of direct
- ?? Why?? All of these practices help to move away from prompt-dependent behavior into the realm of self-direction and promote ownership of experience and perspective-taking
Do things WITH your students instead of TO your students

- I Do
- We Do, we do, we do, we do
- You Do

(thanks, Anita Archer!)

Use scripted phrases when "rock brain" (aka: cognitive inflexibility) strikes

- Key phrases:
  - New does not mean bad
  - Now we're doing _______. After ________ it will be ________.
  - I can do new things
  - My (mom, teacher, therapist) is here to help me
- Put on your "future glasses"--emotion of the moment vs emotion of the future
- "How do you feel?"
- "How would you like to feel?"

Problem-Solving Script

- Script is for TEACHER—NOT STUDENT
- Identify the issue (e.g., "This seems to be a problem; This is kind of scary; I notice this seems hard for you.")
- State the reason (e.g., "It’s a problem because...; It’s scary because...; It’s a big deal because...; It’s hard because...")
- Offer a strategy (e.g., "We (or you) can do ...; that should help")
- Offer general reassurance (e.g., "Great; there’s always something that works, isn’t there?")
- Students will not internalize these critical self-regulatory scripts unless the s
- Scripts first become a habit for adults in their interactions with the students.
  Yrmaniker, Mark, 2006)
General advice for using scripts:

- The main idea is to use words that you would like the student to use at some point in the future—use these as self-regulatory tools. You are planting self-regulation in the student's head with these scripts.
- Modify the language to meet individual needs.
- Keep the routines/scripts simple and consistent. Use the same signal language with the student for each interaction to build internalization.
- Use a pleasant interactive style when using the scripts. Avoid blaming or using the script as a threat. If a student is still struggling, you may have to go back to the script.
- Use the scripts mainly under positive and non-stressful circumstances to create positive associations.
- Use the scripts frequently.
- Pull back supports as the student acquires and gradually internalizes the script. Transfer execution of script to student gradually and consistently. Scaffolding for success as needed. Don't withhold support!

Conclusions:

- Executive Functioning Skills are weak in students with language-based learning differences like dyslexia, language disorders, and students with ADHD.
- The key to successful intervention is to provide a “prosthetic environment” that makes explicit and visual those EF skills necessary for success.
- All EF skills are rooted in visualization and self-talk

Conclusion:

- Students who do not have EF skills are often not successful in school.
- This is a performance problem, not a knowledge problem.
- In order to assess what they know, we have to provide the EF structure for them to demonstrate it.
- Be empathetic— you wouldn’t deny a diabetic insulin—this is the same thing!
Conclusions:

- Multisensory, explicit, systematic, diagnostic, and individualized EF support is most effective.
- Strategies for supporting visualization, planning, a sense of time, self-monitoring, and self-talk ultimately lead to more independent, self-directed students who can make meaning out of their own experiences.
- This is a long game investment—no quick fixes in brain development!