

Executive Skills in Children and Adolescents: Assessment and Intervention

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Executive Skills: Definitions

- **Response Inhibition:** The capacity to think before you act – this ability to resist the urge to say or do something allows us the time to evaluate a situation and how our behavior might impact it.
- **Working Memory:** The ability to hold information in memory while performing complex tasks. . It incorporates the ability to draw on past learning or experience to apply to the situation at hand or to project into the future.
- **Emotional Control:** The ability to manage emotions in order to achieve goals, complete tasks, or control and direct behavior.

Executive Skills: Definitions

- **Sustained Attention:** The capacity to maintain attention to a situation or task in spite of distractibility, fatigue, or boredom.
- **Task Initiation:** The ability to begin projects without undue procrastination, in an efficient or timely fashion.
- **Planning/Prioritization:** The ability to create a roadmap to reach a goal or to complete a task. It also involves being able to make decisions about what's important to focus on and what's not important.
- **Organization:** The ability to create and maintain systems to keep track of information or materials.

Executive Skills: Definitions

- **Time Management:** The capacity to estimate how much time one has, how to allocate it, and how to stay within time limits and deadlines. It also involves a sense that time is important.
- **Flexibility:** The ability to revise plans in the face of obstacles, setbacks, new information or mistakes. It relates to an adaptability to changing conditions.
- **Goal-directed persistence:** The capacity to have a goal, follow through to the completion of the goal, and not be put off by or distracted by competing interests.
- **Metacognition:** The ability to stand back and take a birds-eye view of oneself in a situation. It is an ability to observe how you problem solve. It also includes self-monitoring and self-evaluative skills (e.g., asking yourself, "How am I doing? or How did I do?").

ASSESSMENT PROCEDURES

- Parent and teacher interviews
 - Behavior rating scales
 - Formal assessment
 - Behavior observations
 - Informal assessment

ASSESSMENT OF EXECUTIVE SKILLS

Informal Measures

- Parent interview (look for specific examples of problems in areas likely to be affected by executive skill deficits, including problems with homework, chores, following directions, social interactions, organizational skills, etc.).
- Teacher interviews (again, look for specificity of examples in relevant areas, e.g., following complex directions, task initiation, handling long-term assignments, response to open-ended tasks, social interactions, responses to classroom/school rules, etc.).

ASSESSMENT OF EXECUTIVE SKILLS

Behavior Rating Scales

- **Behavior Rating Inventory of Executive Function (BRIEF).** Available from PAR (www.parinc.com).
- **Child Behavior Checklist/Teacher Report Form.** (www.aseba.org)
- **Brown ADD Scales. (for adolescents).** (Available from Psychological Corporation)

What Do Executive Skill Weaknesses Look Like in Students?

- Acts without thinking
- Interrupts others
- Overreacts to small problems
- Upset by changes in plans
- Talks or plays too loudly
- Resists change of routine
- Acts wild or out of control
- Easily overstimulated and has trouble calming down
- Gets overly upset about "little things"
- Out of control more than peers
- Low tolerance for frustration
- Overwhelmed by large assignments
- Can't come up with more than one way to solve a problem
- Doesn't notice impact of behavior on others

What Do Executive Skill Weaknesses Look Like in Students?

- Slow to initiate tasks
- Runs out of steam before finishing work
- Doesn't bother to write down assignment
- Loses books, papers, notebooks
- Forgets directions
- Lack of time sense/urgency
- Forgets to bring materials home
- Keeps putting off homework
- Chooses "fun stuff" over homework
- Forgets homework/forgets to pass it in
- Leaves long-term assignments until last minute
- Can't break down long-term assignments
- Sloppy work
- Messy notebooks Can't find things in backpack
- Passive study methods (or doesn't study)

Academic Model:

Academic problem = neurological cause = involuntary response = teacher empathy = remediation.

Behavioral Model:

Behavior problem = motivational cause = voluntary response = teacher anger = elimination of behavior problem.

There are 3 primary ways adults can help kids with weak executive skills:

1. Change the environment to reduce the impact of weak executive skills.
2. Teach the youngster executive skills.
3. Use incentives to get children to use skills that are hard for them.

Ways to modify the environment

1. Change the physical or social environment
2. Modify the tasks we expect children to perform
3. Provide prompts or cues

Change the physical or social environment

- Reduce distractions
- Provide organizing structures (e.g., storage bins)
- Reduce the social complexity (e.g. fewer kids or more adults)
- Change the social "mix"

Modify the tasks we expect youngsters to perform

- Make the task shorter--reduce the amount of work required or divide it into pieces with breaks built in along the way.
- Make the steps more explicit.
- Create a schedule.
- Build in variety or choice with respect to the tasks to be done or the order in which the tasks are to be done.
- Make the task closed-ended.

Change the way adults interact with the youngster

- Rehearse with the youngster what will happen and how the youngster will handle it.
- Use verbal prompts.
- Remind the youngster to check his list or schedule.
- Praise the youngster for using his executive skills.

TEACH deficient skills

Don't expect the youngster to acquire executive skills through observation or osmosis.

7 steps to teaching executive skills

1. Identify specific problem behaviors
2. Set a goal.
3. Outline the steps that need to be followed in order for the youngster to achieve the goal.
4. Whenever possible, turn the steps into a list, checklist, or short list of rules to be followed.

7 steps to teaching executive skills

5. Supervise the youngster following the steps.
 - Prompt the youngster to perform each step in the procedure.
 - Observe the youngster while s/he performs each step, providing feedback to help improve performance.
 - Praise the youngster when s/he successfully completes each step and when the procedure is completed as a whole.
6. Evaluate the program's success and revise if necessary.
7. Fade the supervision.

Goal: Remember to bring home needed materials for homework

1. Teacher highlights materials that need to go home.
2. Ask child to read 1st item on checklist ("Assignment book filled in").
3. Prompt child to open assignment book and read aloud assignments.
4. Ask child to compare what's written in the assignment book with highlighted item. Prompt to correct assignment

Goal: Remember to bring home needed materials for homework

5. Prompt child to put each highlighted item in backpack.
6. Prompt child to check off the "Packed in bag" column.
7. Prompt child to ask the teacher to sign and date homework checklist.

Goal: Remember to bring home needed materials for homework

Fade the supervision :

1. Prompt child to begin and cue each step in the process.
2. Prompt to begin and ask the child, "What do you do next?" after each step.
3. Prompt to begin, tell child to go through the steps on the checklist, check in periodically, and check at end to make sure entire process followed

Goal: Remember to bring home needed materials for homework

Fade the supervision :

4. Prompt child to begin and check in when done.
5. Prompt child to begin; no check-in at end.
6. Child follows entire procedure independently.

Helping children with emotional control

Example: Helping a child learn to control his/her temper

Helping A Child Learn to Control His/Her Temper

1. Together with the child, make a list of the things that happen that cause the child to lose his/her temper (these are called "triggers").
2. Manage or eliminate the triggers.
3. Talk about what "losing your temper 'looks' or 'sounds like' (e.g., yells, swears, throws things, kicks things or people, etc.). Decide which ones of these should go on a "can't do" list. Keep this list short and work on only 1-2 behaviors at a time.
4. Now make a list of things the child can do instead (called "replacement behaviors"). These should be 3-4 different things the child can do instead of the "can't do" behaviors you've selected.
5. Put these on a "Hard Times Board."

HARD TIMES BOARD



Triggers: What Makes Me Mad--

1. When I have to stop doing something fun.
2. When it's time to do an assignment I don't like.
3. When my plans don't work out.



"Can't Do's"

1. Hit somebody
2. Break or throw anything.



When I'm Having a Hard Time, I Can:

1. Draw a picture.
2. Read a book.
3. Run an errand for the teacher.

Helping A Child Learn to Control His/Her Temper

6. Practice. Say to the child, "Let's pretend you're upset because Billy said he would play with you at recess and then he wanted to play with someone else. Which strategy do you want to use?" See more detailed practice guidelines below.
7. After practicing for a couple of weeks, start using the process "for real," but initially use it for minor irritants.
8. After using it successfully with minor irritants, move on to the more challenging triggers.
9. Connect the process to a reward. For best results, use two levels of rewards: a "big reward" for never getting to the point where the Hard Times Board needs to be used, and a "small reward" for successfully using a strategy on the Hard Time Board to deal with the trigger situation.

Use incentives to augment instruction.

- Incentives make both the effort of learning a skill and the effort of performing a task less aversive.
- Furthermore, putting an incentive after a task teaches delayed gratification.

7 steps to creating incentive systems

- Step 1: Describe the problem behaviors.
- Step 2: Set a goal.
- Step 3: Decide on possible rewards and contingencies
- Step 4: Write a behavior contract.
- Step 5: Implement the contract.
- Step 6: Evaluate success and make changes if necessary.
- Step 7: Fade the rewards.

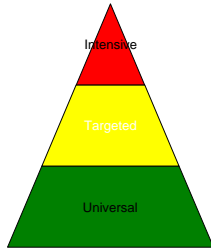
Sample Behavior Contract

- Student agrees to: hand in homework on the day it is due.
- To help student reach goal, parents will: check in with student before bedtime to make sure homework is done and in backpack.
- Teachers will: collect homework from student at the beginning of each class.
- Guidance counselor will: email parents every Friday regarding number of missing assignments.
- Student will earn: 5 points for no missing assignments, 3 points for no more than 2 missing assignments, and no points for more than 2 missing assignments. When student has 25 points, can buy video game.

Putting it all together

- Step 1: Decide on appropriate environmental modifications
- Step 2: Plan how to teach the skill
- Step 3: Design an incentive system
- Step 4: Implement the program
- Step 5: Evaluate its effectiveness and make changes as necessary
- Step 6: Fade the program

3-Tiered Model of Service Delivery



Definition of Terms

- **Universal services:** systems-level or classroom level programs directed at all students and designed to meet the academic and social-emotional needs of *most* students.
- **Targeted interventions:** for the 10-20 percent of students for whom universal supports are insufficient. May include small group interventions.
- **Intensive interventions:** for the 1-7 percent of students with chronic and more severe problems. Highly individualized, often involves collaboration of parents, teachers, students, and other agencies.

Universal Level: Class-wide practices and procedures

Environmental Modifications

- Establish classroom routines to address executive skills such as organization, working memory, planning, time management.

Universal Level: Class-wide practices and procedures

Environmental Modifications

- Establish classroom routines to address executive skills such as organization, working memory, planning, time management.
- Teach classroom rules to address executive skills such as response inhibition, emotional control, flexibility-- post prominently, review frequently, and practice following the rules.
- Establish class-wide and school-wide monitoring and feedback systems (e.g., Power School, TeacherEase).
- Embed metacognitive questions into instruction.

Examples of Infusing Metacognitive Questions into Daily Instruction

"Good question! How do you suppose you could find the answer?"
"How do you think you will do on your math assignment. Why?"
"What could you do to get a higher grade?"
"Tell me how you figured out your answer to that question."
"This is a big assignment. What will you do 1st? Then what?"
"How long do you think it will take you to finish this? Let's see if you're right."
"Tell me your homework plan. What will you do first? When will you do it?"

Examples of Infusing Metacognitive Questions into Daily Instruction

"Sometimes it's hard to get started on homework. What can you do to make it easier?"
"What can you do to make sure you keep working until the assignment is done?"
"How can you keep from becoming distracted while you're trying to work?"
"Tell me how you came to that conclusion, made that decision, etc. What would be another choice you could have made?"
"What can you do to learn the material that will be on the test?"
"Let me show you how I thought about the problem when I tried to solve it."

Universal Level

Instructional Strategies

- Teach organizational skills.
- Teach the “study” skills necessary to meet course requirements—how to study for tests, how to break down long term assignments into subtasks, how to develop timelines.
- Teach homework skills—e.g., how to plan homework sessions, strategies for getting started, screening out distractions, sticking with tasks long enough to get them done, avoiding temptation (e.g., choosing to play video games, etc.), and problem solving (what to do when you forgot to write down the assignment, don’t understand the assignment, etc).
- Teach reciprocal coaching (both to work on metacognitive skills such as organization and behavioral control such as following the rules)

Universal Level: Class-wide practices and procedures

Motivational Strategies

- Use group contingencies to meet specific criteria--popcorn parties on Friday, homework holidays,
- Build in fun activities following classroom job completion (e.g., cleaning desks, picking up the classroom).
- Make liberal use of effective praise

Effective praise

1. is delivered immediately after the display of positive behavior;
2. specifies the particulars of the accomplishment (e.g., “Thank you for picking up your toys right away after I asked you”);
3. provides information to the child about the value of the accomplishment (e.g., “When you get ready for the first activity quickly, it makes the morning go so smoothly!”);
4. lets the child know that he worked hard to accomplish the task (e.g., “I saw you really trying to control your temper!”); and
5. orients the child to better appreciate their own task-related behavior and thinking about problem-solving (e.g., “I like the way you thought about that and figured out a good solution to the problem”).

Targeted Level

Environmental Modifications

- Be careful about social mix
- Alter the task--homework modifications, in-class modifications, open-ended tasks.
- Establish after school homework clubs.
- Weekly progress reports to inform parents of missing assignments or upcoming deadlines.

Targeted Level

Instructional Strategies

- Small group coaching—daily group work teaching students how to make and follow homework plans and monitoring for kids with working memory deficits (strategies for remembering), organizational problems (keeping notebooks and backpacks neat and organized).
- Institute peer tutoring programs or train volunteer tutors (e.g., parents/grandparents).

Targeted Level

Instructional Strategies

- Contact with parents (phone call, email, short meeting) to develop a simple plan to address the problem.
- Give a group of problem students explicit routines (e.g., breaking down morning routine into more detailed steps to get through the routine).

Targeted Level

Motivational Strategies

- Home-school incentive systems (e.g., daily or weekly report cards)
- Students use free time or after school time to complete unfinished work.

Example: Goal: improve task initiation/sustained attention by improving homework completion rate.

- Problem Behavior: failure to hand in homework.
- Underlying Executive skill(s): task initiation, sustained attention, working memory.
- Present level of performance: Kris hands in 50 percent of homework assignments on time.
- Measurement procedure: calculate percent homework handed in on time every Friday. Graph results.
- Goal: Kris will hand in at least 85 percent of homework on time by the end of the 2nd marking period.

Intensive Level

Work collaboratively with parents, teachers, and students to develop an individual support plan. At this level, the likelihood of success is increased if parents, teachers, and students all have specific responsibilities ("Everybody has to work harder").

Intensive Level

Elements of an Effective Intervention

- Target behavior is well-defined and includes criteria for success
- Specific environmental modifications are identified
- The skill is explicitly taught, modeled, and rehearsed on a regular basis
- Someone is assigned to check in with the student at least daily
- The student is given a visual reminder of expectations
- The student's independent use of the skill is monitored over time so that progress can be measured

Sample Support Plan

Homework Problem: Mike forgets assignments, forgets to bring materials home, and forgets to hand in assignments. He also has trouble managing his time and breaking down long-term projects into subtasks and making and following timelines. Problems are severe enough that Mike has failed several classes and is in danger of not earning enough credits to pass for the year.

School's Responsibility: To assign a coach to work with Mike on strategies to improve recall, organization, planning, and time management.

Sample Support Plan

Coach's Responsibility: To meet with Mike for the last 15-20 minutes every day in order to: 1) review all homework assignments, including daily homework, upcoming tests, and long-term projects or papers; 2) break down long-term assignments into subtasks and develop timelines; 3) create a study plan for tests; 4) make a homework plan for the day; 5) monitor how well the plan is followed and track assignment completion. The coach will also check in with teachers at least weekly (on Friday) to track any missing assignments and to double-check long term assignments. Coach will email parents on Friday informing them of any missing assignments.

Sample Support Plan

Teachers' Responsibility: To provide baseline data to determine current level of performance (e.g., percent assignments handed in on time), and to make sure Mike has ample time to write down his assignments at end of day and/or make sure website homework postings are current and explicit. Teachers will also respond by noon on Friday to coach's request for feedback about missing assignments.

Sample Support Plan

Parents' Responsibility: Mike will be allowed to spend Friday evening and Saturday with friends as long as homework assignments for the week have been handed in. Criterion will be determined from baseline performance. Parents will download email from coach on Friday and have a feedback session with Mike before weekends plans are made.

Mike's Responsibility: Mike will attend coaching sessions consistently and will participate in making plans for homework completion.

Coaching

Purpose: help students make the connection between how they spend their time today and their long term goals (hopes and dreams)--in other words, help them build *goal-directed persistence*.

Who Can Be a Coach?

- A school psychologist
- A special education teacher
- A favorite teacher
- A guidance counselor
- An intern
- A paraprofessional

Characteristics of Good Coaches

- They like kids and relate to them in a natural way
- They are empathic and good listeners
- They're reliable, organized, and have good planning skills
- They teach more through questions than lectures
- They have training in coaching

Coaching Ground Rules

- Must be voluntary with teenagers (exceptions apply to younger students)
- Coaching sessions can be brief but must occur daily in the beginning
- Provide lots of support up front; fade gradually with success
- Build in ways to verify student reports

Coaching Is a 2-Stage Process

Step 1: Help the student establish a long-term goal

Step 2: Link the long-term goal to daily plans

Long-Term Goal-Setting

Step 1: Define goal

Step 2: Specify steps to achieve goal

Step 3: Identify barriers to goal attainment

Step 4: Brainstorm ways to overcome barriers

Step 5: Identify necessary environmental supports will be needed to achieve goal

Daily Coaching Sessions

Basic Format: R.E.A.P.

Review: go over the plans made at the previous coaching session to determine if the plans were carried out as intended.

Evaluate: how well did it go? Did the student do what he said he would do? If not, why not?

Anticipate: Talk about what tasks the student plans to accomplish today--be sure to review upcoming tests, long-term assignments.

Plan: Have the student identify when he plans to do each task, and, when appropriate, *how* he plans to do each task.

Daily Coaching Sessions

Build in mini-lessons where appropriate:

- How to study for tests
- How to organize a writing assignment
- How to break down a long-term assignments
- How to organize notebooks
- How to manage time (resist temptations)

Coaching with Younger Students

- For students receiving special education services, build into resource room time
- Incorporate into end-of-day routine
- Omit long-term goal setting, but consider marking period goals

Coaching Alternatives

- Group coaching--use during homeroom period or in advisor groups
- Peer coaching--train honor students to coach at-risk students
- Reciprocal coaching--have students work in pairs to coach each other
- Train older students to coach younger students

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