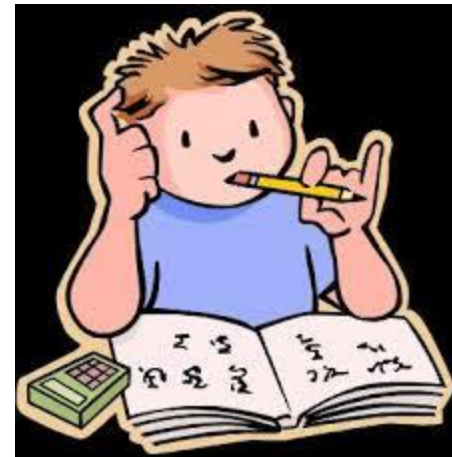


Executive Function Disorder

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OCCUPATIONAL THERAPY

- Occupational therapy (OT) is concerned with a person's ability to participate in desired daily life activities or "occupations". In the schools, OT practitioners use their expertise to help children to participate in learning and school-related activities and to fulfill their role as students. Occupational therapists and occupational therapy assistants support academic and non-academic outcomes including social skills, math, reading, writing, recess, play, participation in sports, self help skills, prevocational/vocational participation and more, for children and students with disabilities, 3 – 22 years of age.
- School-based occupational therapy is available for students who are eligible for special education services under federal and state laws. IDEA04 governs the provision of special education and related services such as OT to meet the needs of students with disabilities. Occupational therapists complete assessments and collaborate with other members of the education team to identify a student's annual goals and determine the services that are required for the student to achieve these goals. When the IEP team determines that OT is needed for a student in order to meet his or her annual goals, then occupational therapy services are part of the student's IEP. Children may also be eligible for OT services under other federal laws, such as Section 504 of the Rehabilitation Act.

Overview of Executive Function Skills

- help us to decide what activities or tasks we will pay attention to and which ones we will choose to do (Hart & Jacobs, 1993).
- allows us to analyze a task, plan how to address the task, organize the steps necessary to carry out the task, develop time lines for task completion, adjust or shift the steps to complete the task and complete the task in a timely way.
- help us to regulate our behavior.
- Assuming no genetic/environmental issues, executive function skills will begin to develop soon after birth in a slow progression to full adult development.
- These skills are influenced by the genes we inherit as well as by the environment in which we live.

Components of Executive Function Skills

- **Working Memory & Recall:** holding facts in mind, accessing facts stored in long term memory
- **Activation, Arousal & Effort:** getting started; paying attention; finishing work
- **Controlling Emotions:** tolerate frustration, thinking before acting or speaking
- **Internalizing Language:** using self-talk to control ones behavior and future actions
- **Complex problem solving:** taking an issue apart, analyzing the pieces and organizing it into new ideas
- **Shifting, Inhibiting:** hanging activities, stopping an existing activity and thinking before acting/speaking
- **Organization & Planning**
- **Monitoring:** self monitoring and prompting

Working Memory and Recall Weaknesses

- **Affects the Here and Now:** limited working memory capacity
- **Weak Short-term Memory** (equivalent to holding information for roughly 20 seconds)
- **Forgetfulness:** difficulty remembering and following instructions, memorizing math facts/spelling words/dates, difficulty performing mental computations, forget a part of a problem while working on another, difficulty paraphrasing or summarizing, difficulty organizing and writing essays.
- **Affects the Sense of Past Events:** may not learn easily from past behavior and repeat misbehavior
- **Affects the Sense of Time:** difficulty judging the passage of time accurately and accurately estimating how much time it will take to complete a task resulting in incomplete work.
- **Affects Ones Self-awareness:** do not easily examine or change own behaviors
- **Affects Ones Sense of the Future:** difficulty projecting lessons learned in the past, forward into the future, preparing for the future.

Executive Function Skills and Behavior

- **Response Inhibition:** “Think before you act”
- **Emotional Control:** (Self regulation of affect). The ability to manage emotions in order to complete a task, achieve a goal and direct behavior.
- **Sustained Attention:** The ability to attend to a task or situation despite extraneous distractions, boredom or fatigue.
- **Task Initiation:** The ability to begin a task in a timely fashion.
- **Flexibility:** The ability to change plans when faced with obstacles, new information or setbacks.
- **Goal Directed Persistence:** The ability to follow through to the completion of a goal despite other demands and competing interests.

Executive Function Skills & Learning

- Difficulty planning a project
- Trouble comprehending how much time is required to complete a project
- Struggles to verbally or in writing tell a story and presenting details in an organized, sequential way.
- Difficulty with the mental strategies involved in memorization and retrieving the information
- Difficulty initiating tasks or generating ideas independently.
- Difficulty retaining information while doing something with it (i.e. remembering a phone number while dialing)
- Act impulsively, struggle with waiting his turn in conversation or interrupt others, easily frustrated, lash out verbally
- Difficulty following multi-step directions, struggle with recalling what he is trying to say or lose his train of thought and forget

Executive Function Skills – Ages 3-4

- Complete simple errands (hang your coat up)
- Clean and put items away with minimal assistance
- Perform simple chores and self care tasks with reminders and physical assistance if needed; clear dishes, brush teeth, get dressed.
- Inhibit unsafe or inappropriate behaviors (don't touch a hot stove, run into the street, hit, bit, push etc.)

Executive Function Skills Ages 5-7

- Complete a 2-3 step errand (throw the trash out and bring me a cup)
- Tidy bedroom/playroom independently
- Initiate and perform simple chores and self-help tasks. May need reminders (make your bed, make a bowl of cereal)
- Bring papers to/from school
- Complete 20 minute maximum of homework
- Decide how to spend their money
- Inhibit behaviors: follow safety rules, use appropriate language, raise hand before speaking, keep hands to self.

Executive Function Skills Ages 8-11

- Run errands, including those involving a time delay, such as remembering to bring something home from school without reminders
- Perform chores that take 10-30 minutes
- Bring books, papers, assignments to/from school
- Keep track of belongings when away from home.
- Complete the majority of homework assignments without assistance (1 hour maximum)
- Plan simple projects such as book reports (select book, read book, write report)
- Save money for desired objects and plan how to earn money
- Inhibit/Self regulate behaviors: maintain composure when teacher is out of room, inhibit temper tantrums and bad manners.

Executive Function Skills Ages 12-14

- Help out with chores around the home - both daily responsibilities and occasional tasks that may take 60-90 minutes to complete
- Able to safely baby-sit younger siblings
- Appropriately use a system for organizing school work
- Independently follow complex school schedule involving multiple transitions with teachers and classrooms
- Plan and carry out long-term projects, including tasks to be accomplished and a reasonable time line to follow.
- Plan time effectively including after school activities, homework, family responsibilities
- Inhibit rule breaking in the absence of visible authority

Executive Function Skills High School

- Manage school work effectively on a day-to-day basis, including completing and handing in assignments on time, studying for tests, and creating and following time-lines for long term projects
- Establish and refine a long-term goal and make plans for meeting that goal; collegiate or other vocational goals
- Independently organize leisure time activities, including obtaining employment or pursuing recreational activities during the summer
- Avoid reckless and risky behaviors (e.g. use of illegal substances, sexual acting out, shoplifting, or vandalism)

Occupational Therapy's Role

- Consultation to classroom staff
- Modifications to the environment
- Provision of strategies/tools to support the executive skill weakness (i.e. graphic organizers, visual supports for self monitoring written work, self-regulation techniques)

Teaching Strategies

- PROVIDE OPPORTUNITIES TO APPLY LEARNING - AUTHENTIC MEANINGFUL ACTIVITIES
- The essence of differentiated instruction which is based on the premise that all students have unique learning profiles and teachers provide specific ways for each individual to learn as thoroughly and quickly as possible
- Flexible grouping, ongoing assessment and adjustment, use of tasks differentiated by content, process and product AND executive skills strengths and weaknesses.
- Scaffolding: providing whatever type of assistance is needed for any student to acquire the next level of knowledge and skills by reteaching or extended teaching, modeling, teaching through multiple modes, use of manipulatives, use of organizers and study guides and/or peer tutoring.
- Create a bank of modified assignments so that individual students can be more easily plugged into the most appropriate modifications.

Teaching Strategies

- Make the learning process as concrete and visual as possible.
- Allow a child to dictate information to a “scribe” or parents
- Use graphic organizers to provide visual prompts and help a student to organize their thoughts
- Use post-it notes to brainstorm essay ideas
- Paired learning (teacher explains the problem, students make up their own problem, swap and discuss/correct answers)
- Peer tutor
- Mnemonics (memory tricks)
- Visual Posting of key information on strips of poster board.
- Use a scoring rubrics to define what is to be included in class assignments and what a quality end product includes. Rubric can be written as a checklist.

Teaching Strategies

- Use color to highlight important information
- Modify assignments, reduce written work
- Master copy of lecture notes for students with poor organizational skills
- Reduce amount of time spent on homework if excessive
- Photocopy questions and student writes answers only
- Provide extended time on tests
- Divide long-term projects into segments with separate due dates and grades
- Average two grades on essays - one for content and one for grammar
- Appoint one student per row/table to check to see that homework assignments are written down and turned in
- Use a computer as often as possible

Classroom Modifications

- Unobstructed view of all students, placement of materials, organizing the classroom to encourage organizational skills and reduce working memory demands.
- Grouping/seating of students to promote attention to task, reduce conflicts.
- At middle and high school level where cooperative learning and group work occurs on a regular basis, take into account students executive skills strengths and weaknesses when forming learning groups. (The ESQ can be used for this purpose and is included in the handouts, Form 2.3)
- Preferential seating/away from competing distractions
- Student placement with appropriate teacher (child with weak time management or planning/organization skills placed with highly structured teacher)
- Students who are inflexible, have decreased impulse control or ability to regulate their affect will most likely do better in social environments with a reduced number of children and increased degree of adult supervision.

Modifications for Individual Children

****Academic tasks need to be modified so that the type and/or level of executive skill demand does not exceed the skills of the student****

- Make the task shorter
- Make the steps more explicit
- Make the task closed ended through use of fill-in-the-blank with word banks, true/false, practice spelling words with magnetic letters vs. writing sentences
- Build in variety or choice: Have the student suggest ways to alter tasks to make them more manageable, or let the student have some say about the order of completion (at home and school)
- Self Assessment: Ask the student to give themselves a grade and explain why they deserve that grade
- Build error monitoring into task assignments: proof reading checklist, calculator to check math solutions

Executive Function at Home

- Page Systems: Parents can text/call children to remind them to perform a task, phone can be programmed to sound an alarm at a specific time to alert the student of a task to be performed
- Use Lego's to build a figure and have your child build an exact replica in size and color.
- Have your child to through a magazine and make a list of clothing/items they want. Have them organize the list in order (most wanted at top, price, alphabetical). Have them write a description of the item, cut pictures out that match the item and provide a list with descriptions and pictures.
- Board Games: Rush Hour, Mastermind, Connect 4 Stackers
- Cooking: Choose a recipe, write the grocery list, create a list of necessary cooking supplies, look up the price of items and create a budget. Older children can be responsible for completing most of the cooking with supervision, young children can have specific tasks in the cooking process. Children can accompany you to the grocery store and help to find the items in the store.

Cues for Prompting Behavior

- **Verbal prompts or reminders**
- **Visual cues:** mini schedules/to-do list in work space
- **Lists**
- **Page Systems:** Parents can text/call children to remind them to perform a task, phone can be programmed to sound an alarm at a specific time to alert the student of a task to be performed

Disorders That Impact Executive Functioning

- **ADHD:** Research indicates that children with ADHD evidence significantly more executive skill weaknesses. Research also indicates that the brain regions suspected of involvement in ADHD and executive skills weaknesses show physical differences between ADHD and non-ADHD students.
- Stimulant medication will not improve function of a child diagnosed as LD or with EFD.
- **ASD:** Children on the autism spectrum have been identified as having executive skill deficits, particularly with behavioral/emotional regulation, task initiation and working memory.

IPad/Ipod Touch Apps

ORGANIZATION

- Checklists Lite
- My Homework
- Remember the Milk
- Hi Future Self
- Scrumboard
- Focus Me Do
- Work Tracer

NOTE TAKING

- Dragon Dictation
- Audio Note
- Quick Voice
- Note Pro HD
- Penultimate

Fine Motor Skills Within The Classroom Middle School

At the middle school level occupational therapy often addresses:

- Skills and accommodations for sensory, motor and visual perceptual limitations
- Executive functioning skills such as task initiation, organization, sequencing & problem solving
- Self-esteem, social skill development and self-awareness as related to the students sense of independence in school

Fine Motor Skills Within The Classroom Middle School

These skill areas are often addressed within the context of practical learning experiences. Students engage in various activities involving students' interests, life skills and age appropriate "jobs". Students may be involved in the following activities in O.T.:

- Calendar/monthly planner skills activities
- Phone skills activities
- Basic cooking skills
- Off-campus activities such as food shopping
- Office type tasks
- Cleaning skills
- Keyboarding skills
- Safety skills and responses to various situations
- Organizational tools such as: to do lists, calendars and task cards help students to initiate, problem solve, sequence and organize tasks.

Comfortable Writing Posture

How can we help a students rest their forearms comfortably on the table when writing? Students have different reasons why this is hard for them to do and I think one of those reasons is their difficulty combining wrist extension with active finger flexion.

By the time students are in older elementary grades they typically have the neurological maturation and physical ability to grade flexion and extension in their shoulders, elbows, wrist and fingers when performing skilled tasks. However, some students with no known physical concerns have a significant degree of difficulty writing on a horizontal surface (AKA desktop) unless they hover their forearm over their paper. How to help them develop better control?

Here are some suggested activities:

- Wall pushups on flat surface--face wall with both hands on surface or just one hand with body turned sideways
- Chair pushups on flat surface--chair within 2' of ground (stabilize chair against non-moving object)
- Wall or desk pushups with hands over rounded object (half tennis ball, swim noodle) Be sure to stabilize desk against non-moving object
- Carrying books or heavy tote bag down long school hallways
- Traditional Theraputty exercises
- Hanging by hands from horizontal bar
- Balloon tennis with homemade "racket"
- Working on a vertical surface (writing, coloring, using magnets, etc.)



SENSORY ACCOMMODATIONS WITHIN THE CLASSROOM SETTING

SENSORY ACCOMMODATION SUGGESTIONS

STUDENT'S NAME _____

GRADE _____

TEACHER _____

SCHOOL YEAR _____

TO MAKE DESK WORK EASIER

- Provide desk closest to teacher
- Provide alternate desk away from group activities
- Assign desk at front of class
- Adjust desk to child's height (correct placement is child's feet on floor/stool with elbows resting on table)
- Provide rubber band around chair legs for child's feet
- Use alternate seating options; ball, knee chair, move-and-sit, disc-o-sit or air cushion
- Allow child to stand
- Allow child use of weighted lap pad
- Allow frequent breaks

FOR SITTING IN A GROUP

- Allow child to sit on a carpet square
- Mark child's spot on carpet with tape
- Allow child to use chair or beanbag
- Seat child closest to teacher
- Seat child at edge of group
- Seat child at back of group
- Seat child at front of group
- Allow use of handheld fidget toys/manipulatives
- Allow child to sub-vocalize
- Allow child to change position as needed (from knees, to straight legs, to criss/cross, etc)

FOR WRITING

- Provide a pencil grip (specify kind _____)
- Provide angled writing desk or slant board
- Always provide lined paper or specialized paper
- Provide visual instructions for common written tasks
- Assist with brainstorming for written work
- Help organize thoughts for long writing tasks
- Give extra class time to finish
- Allow the option to finish at home without penalty
- Provide a list of common words and their correct spelling at desk
- Allow dictation to a scribe
- Allow assistive technology (specify kind _____)
- Allow child to dictate ideas into a tape recorder, then scribe his/her own words later or at home
- Warm hands up with proprioceptive work, such as manipulating clay, before writing begins

FOR READING

- Allow child to read out loud
- Give child a book mark to hold place and help to follow along while reading
- Minimize visual distractions on the page
- Allow child to move/change position/take breaks

FOR CLASSWORK

- Allow child to move to a quieter area/out in hallway
- Repeat instructions to child 1:1
- Allow child to take work to Resource Room
- Provide visual instructions
- Cover page to show only 1-2 problems at a time

FOR HOMEWORK

- Allow extra time to complete assignments
- Give modified assignments that require less writing
- Give modified assignments that require less reading
- Give option of drawing in lieu of writing
- Allow work to be typed
- Allow work to be scribed
- Allow work to be modified at the parent's discretion
- Decrease amount of work required

FOR TRANSITIONS

- Prepare student ahead of time verbally or with a timer
- Follow schedule as accurately as possible
- Allow child to bring a "transition toy" with them
- Give child something to carry with them
- Have child be the "door holder"
- Have child be the "caboose" (last in line)
- Have child be the "leader" (first in line)
- Remind child to keep his/her hands to themselves
- Remind child about "personal space bubble"

FOR RECESS

- Do not take recess away for mis-behavior in class
- Offer good proprioceptive options such as monkey bars, rock wall climbing, or digging

FOR HEAVY WORK - REGULAR ACCESS ALL DAY

- Allow child to re-shelve books
- Allow child to rearrange chairs/desks
- Allow child to open and close doors

- Allow child to hold signs
- Allow child to wear weighted back pack
- Allow child to pull the lunch wagon
- Allow child to push adult in a wheeled chair
- Allow child to wipe down tables
- Allow child to carry books to/from the office/library
- Allow child to carry Xerox paper to/from copy room

FOR SENSORY BREAKS

- Make child "classroom messenger"
- Allow child to pass out papers
- Allow child frequent trips to the bathroom or drinking fountain as needed
- Sing songs that encourage movement
- Encourage whole class stretching
- Allow child access to sensory tub, sand, beans, rice
- Do chair pushups or tailor sit pushups as a class

TIPS FOR GENERAL SENSORY SUCCESS

- Give child warnings before a fire drill or other bells
- Explain false alarms to child when applicable
- Provide 'Quite Chill' out space, under a desk, in a corner where they can be alone and safe
- Allow noise-canceling head phones
- Allow gum chewing, hard candy, or other food
- Allow water bottle w/straw at desk or other chewy
- Allow fidget toys
- Post visual routine in classroom
- My child is very sensitive to smells
- My child is very sensitive to touch: Please DO NOT TOUCH HIM/HER
- Keep visual distractions in the room to a minimum
- Play calming music in the background
- Allow modifications to art activities with possible use of tools to increase participation
- Please share my child's 504 with all para-educators in contact with my child
- My child is on a special diet, you can support this by: _____
- My child needs a modified dress code as follows: _____

MY CHILD'S LEARNING STYLE IS:

- Visual
- Auditory
- Kinesthetic

References

- Dawson, P. and Guare, R. (2010) “*Executive Skills in Children and Adolescents, Second Edition*”. New York: Guilford Press
- North Shore Pediatric Therapy, Inc. (2011) “*Executive Functioning Skills Check-List*”.



Resources

- **“Late, Lost and Unprepared: A Parent’s guide to helping children with executive functioning”** by Joyce Cooper-Kahn
- **“Smart but Scattered: The Revolutionary Approach to Helping Kids Reach their Potential”** by Peg Dawson (EdD) and Richard Guare (Phd)
- **“Smart but Scattered Teens: The Executive Skills Program”** for Helping Teens Reach their Potential by Peg Dawson (EdD) and Richard Guare (Phd)
- **“Helping Students Take Control of Everyday Executive Functions”** by Paula Moraine

Occupational Therapy Website

Please visit the occupational therapy link on the Taunton Public Schools website for suggested activities that will help to support your student's goals.

- GO TO: Taunton Public Schools > Departments > Special Education > Special Education Website > Occupational Therapy