

NESCA Neuropsychology & Education Services
for Children & Adolescents

55 Chapel Street
Newton, MA 02458
(617) 658-9800

Supporting Executive Functioning in Children and Adolescents

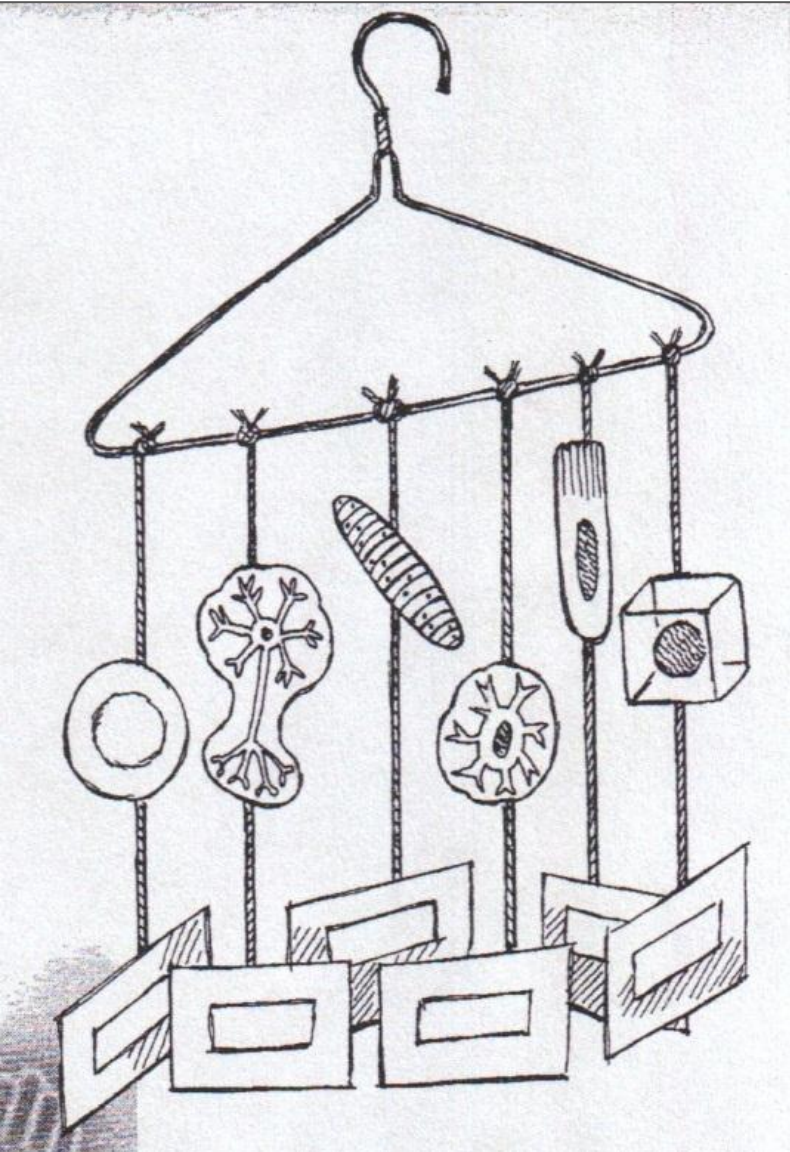
Ann A. Helmus, Ph.D.
Pediatric Neuropsychologist
Director, NESCA



At School

- Prepare for the Unit Test vs Answer the questions at the end of the chapter
- Put on a skit with your group that demonstrates the layers of the atmosphere vs write down the layers of the atmosphere in order
- Write an essay on the following vs. Do the worksheet on Ind. Rev. Evaluate the impact of the Industrial Revolution on the role of fathers in poor communities of England based on whether or not the Industrial Revolution improved fathers' abilities to provide the material necessities of life and education and training for their children. Explain how the role of a father as provider changed with the Industrial Revolution and whether or not the changes were an improvement for fathers striving to provide for their children.

At School



- Make a mobile that looks like this (with the name of each type of cell attached to it).
- Describe the shape and characteristics of each kind of cell in the model.
- Theorize how the cell's shape and characteristics help it perform its job.



At Home

- Clean your room vs Put your dishes in the sink
- Get ready for your ski trip vs. Get dressed for school
- Get stuff together for hockey and remember you're sleeping over at Tommy's house vs Put your hockey stick and pads in the bag and pack your other bag with...
- Do your homework vs read in your English book for 30 minutes



Executive Functioning

- Refers to the set of cognitive and regulatory skills that are necessary for engaging in goal-directed behavior, such as learning or demonstrating knowledge
- Often considered to have two branches:
 - Task Management
 - Self-Regulation



Task Management Skills

- Organization of Ideas
- Organization of Time
- Organization of Materials



Task Management Skills

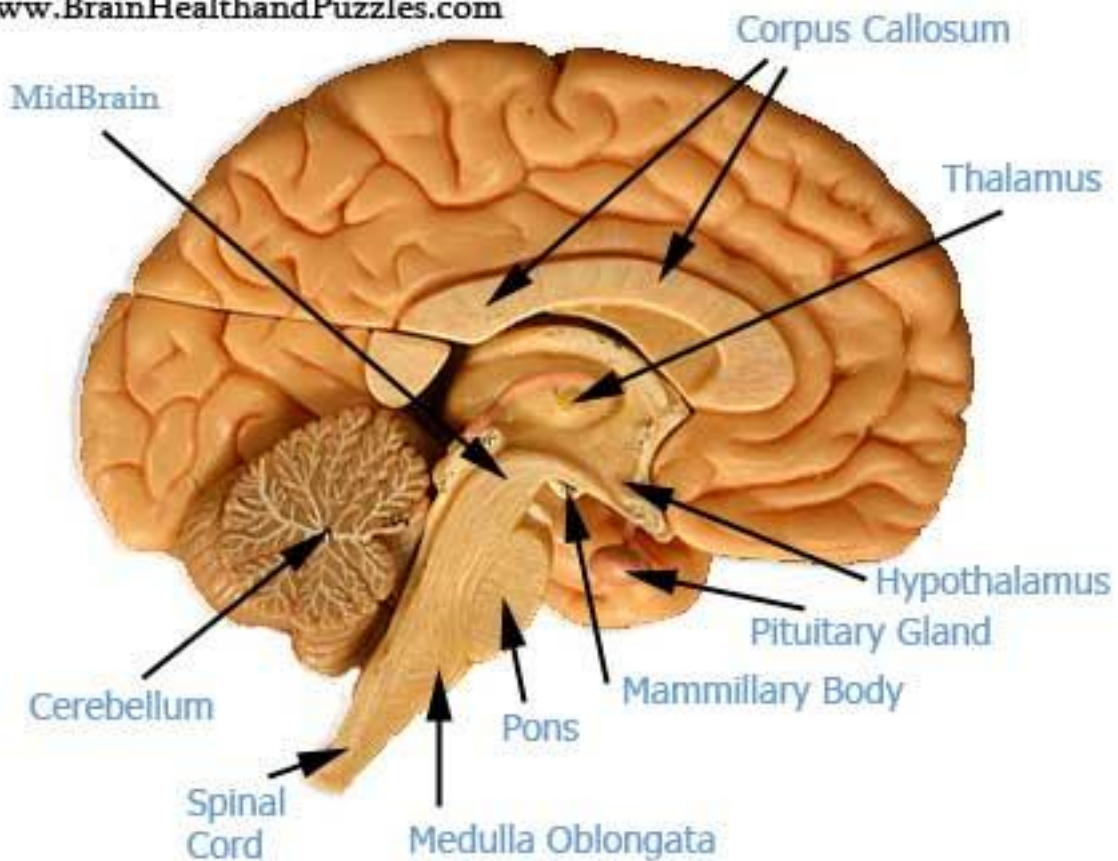
- Appreciating Task Demands
- Making a Plan
- Holding Information in Working Memory
- Initiating Work
- Sustaining Effort
- Monitoring Performance
- Self-Advocacy



Self Regulation

- Ability to control emotional state, level of arousal and focus of attention as needed in order to engage in goal directed behavior

www.BrainHealthandPuzzles.com





Development of EF Skills

Age 2

Impulse-driven, distractible, no flexibility, perseverative, poor emotional regulation, planning when motivated (get the cookie jar)—highly dependent on external structure and cueing



Developmental of EF

Age 5

Impulsivity declines, ability to use self-talk increases, balance between internal state and external demands, follow 2-3 step directions



Development of EF

Grades 3-5

Language is developed, selective attention, chores of 15-20 minutes, follow routines, bring items to/from school, keep track of belongings away from home, complete hw assign of up to an hour, simple projects (book report: select, read, write), track daily schedule, inhibit/self-regulate behavior (refrain from tantrums or rude behaviors even when no adults present)



Development of EF

Grade 6-8

Able to learn from mistakes, generate alternate strategies, goal setting, planning, problem solving, organize complex information, use organizational system (assignment book), manage complex schedule, plan and execute long term projects, plan time and estimate time a task requires



Development of EF

High School

Significant increase in all skills: attention, impulse control, working memory, cognitive flexibility, decision making, manage schoolwork (completing/handing in assignments on time, study for tests, create/follow timelines for long term projects), establish long term goals (e.g. college, athletic), make use of leisure time



A Key Developmental Task for
All Middle and High School
Students is the Mastery of
Executive Functioning Skills



Students with Learning Issues Struggle with this Developmental Task

- Learning Disabilities: Language-Based LD (LBLD) or Non-Verbal Learning Disorder (NLD)
- Disorders of Attention (AD/HD)
- Developmental Disabilities (Autism Spectrum Disorders)
- Emotional Disorders (Anxiety, Depression)

Implications for School

- Performance may not reflect grasp of material (e.g. completed homework assignment at home; student can't demonstrate knowledge effectively)
- Students may not learn the material efficiently or effectively because of weak EF (e.g. get “bits and pieces” but miss the big picture, can't generalize a skill)
- Academic Underachievement



Implications for the Classroom

- Reduced ability to work independently
- Inability to learn effectively from text unless the material is directly taught
- Inability to demonstrate knowledge effectively through written expression or projects
- Anxiety, frustration, procrastination



Implications for Home

- Ineffective execution of developmentally appropriate tasks, routines
- Major problems with homework
- High level of emotionality around homework or other non-preferred activities
- Excessive “forgetting”
- Lack of anticipating and planning



Task Initiation

Why Can't My Child Just Get Started?!

Don't have assignment or stuff needed; not even sure what is needed (organization of materials)

Why now? It's not time! (organization of time)

Don't know what to do (planning, working memory)

Feel overwhelmed or anxious (planning)

Written Expression:

- Too many ideas (organization of thinking, working memory)
- Too few ideas (generation)

Fear of feeling incompetent, bored, or anxious (regulation)

No sense of urgency (time sense, planning)



Results of Problems with Initiation

- Avoidance behaviors—procrastination, FB, texting, videogames
- Increased Anxiety/Emotional outbursts
- Lack of sleep
- Incomplete or poor quality work
- Erosion of self-esteem



What Parents of Children Age 13 and Older Can Do....



Environmental Engineering

- Highly structured—physical space, schedule, materials
- Predictable routine with clear notification of changes
- Clearly stated and perhaps written expectations



**What Parents of Children Age 13 and Older
May Be Able To Do**

And Educational Professionals/Tutors Can Do

Provide Support for Weak EF: Adults as Prosthetic Frontal Lobes

- Provide or collaborate to develop a written plan that leads to a specific set of directions
- Cue child to initiate task (“Let’s start now”)
- Monitor performance (“How is it going?”)
- Provide encouragement and motivation (“It looks great! You’re well on your way”).
- Inhibit inappropriate responses (“Keep working now; you can check Facebook in ten minutes”)
- Think flexibly when plan doesn’t work (“It looks like you won’t have time to take on your closet too; how about next weekend?”).

Daily Homework Planner

from Dawson and Guare 2004

Date

Subject / Assignment	Do I have Materials	Do I need Help?	How Long Will it Take?	When To Start?
_____	Y__ N__	Y__ N__	_____	_____
_____	Y__ N__	Y__ N__	_____	_____
_____	Y__ N__	Y__ N__	_____	_____
_____	Y__ N__	Y__ N__	_____	_____



Homework Planner

- When will I take breaks?
- What will be my reward for following my plan?



Desk Cleaning Procedure

from Dawson and Guare 2004

■ Step 1: Gather Necessary Materials

Materials Needed

Check

Wastebasket

Empty File Folders

3-Ring Binders

Paper Clips

Stapler

Desk Cleaning Procedure

■ Step 2: Follow Procedure

Steps	Check
Empty out desk	_____
Sort into piles: Save/Don't Save	_____
Throw Out "Don't Save" Pile	_____
Sort Save Pile: School/Home	_____
Sort "School stuff" into subjects/other	_____
Organize each subject into file/binder	_____
Decide what to do with "other"	_____
Put materials neatly in desk	_____

Fading Support

- Steadily decrease the number of prompts and level of supervision
- Cue child to initiate and leave
- Prompt child at each step but leave between steps
- Encourage use of visual cues such as checklists
- Reduce level of detail in visual cues (e.g. single word prompts)
- Reduce the level of prompting (e.g. from “look at the checklist” to “where do you need to look?”)
- Celebrate when the child uses self-talk, “what do I need to do?” and recalls the steps for the task



**What Parents of Children 13 and Older
Probably Can't Do....**

**And Educational Professionals and Tutors
Can Do**



Teaching/Application of Compensatory Strategies

- Materials organization
- Visual cueing: checklists, flowcharts, planning sheets, graphic organizers, schedules
- Self-monitoring tools—edit checklists, rubrics
- Self-talk: key questions to ask yourself

Homework Checklist

Tasks	Yes	No
All assignments written in book		
Books/notebooks in back pack: ___Math ___Science ___ELA ___Social Studies		
Other things to go home: ___Permission slip ___Clothes ___Sports equipment		
Homework Completed: ___Math ___Science ___ELA ___Social Studies		
Homework in Folders		
Folders in back pack		
Homework Handed In: ___Math ___Science ___ELA ___Social Studies		

Long Term Project Plan

from Dawson and Guare (2004)

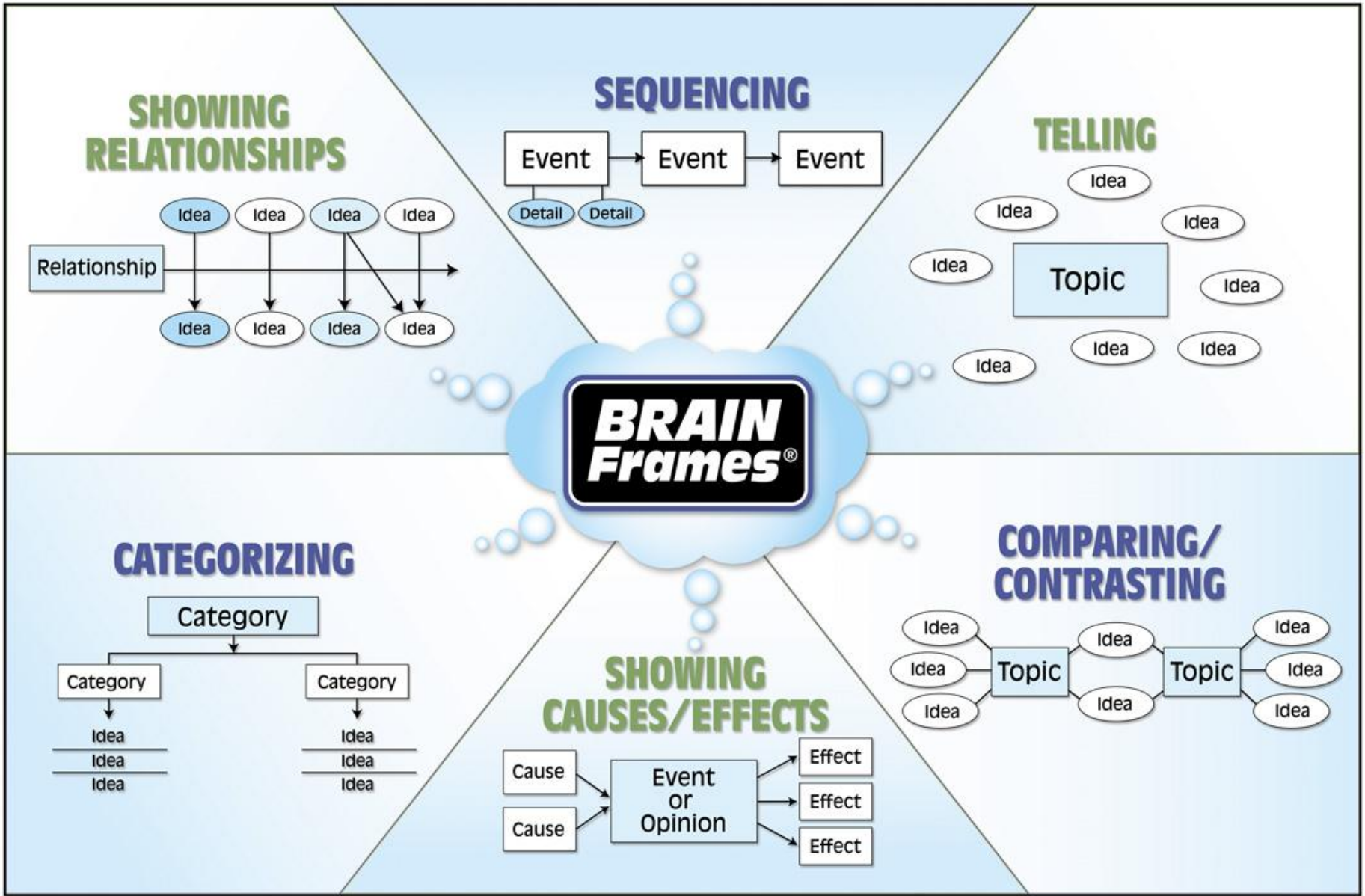
Possible Topics	What I like about this choice?	What I don't like about this choice
Octopus	I've always wanted to know more about them	Might not be able to get enough material
Giant Squid	I want to know how they make the ink they spray and how they spray it	There might not be enough other stuff about them that's interesting
Killer Whale	I've always been interested in whales and have a lot of books on this topic	I know so much that I might not learn anything new

Long Term Project

What materials or resources do you need?	Where will you get them?	When will you get them?
Encyclopedia for overview	School library	During class
At least two books	School/town library	During class/Saturday
Pictures	Internet	After I've done research

Long Term Project Plan

What do you need to do?	When will you do it?	Check off when done
Take notes from encyclopedia	English class on Friday	
Check out books	Class on Friday	
Take notes from books	Mon-Fri; 30 min/day	
Look for pictures on internet	Next Saturday	
Organize note cards	Next Saturday	
Outline report	Next Sunday	
Write first half of report	A week from Monday	
Write second half	A week from Tuesday	
Edit/proofread	A week from Wednesday	
Add pictures	A week from Thursday	





Compensatory Strategy: Structuring Written Expression

Shmoop.com Essay Lab; offers step by step approach for producing written expression



References

Landmark School Teaching Guides:

Study Skills: Research-Based Teaching Strategies by Patricia Newhall (2008)

Teaching Independent Minds by Patricia Newhall (2008)

Executive Skills in Children and Adolescents by Peg Dawson and Richard Guare (2004)