Systems to Support Children with Executive Function Challenges

Presented By: Kathleen Downing, MAT
I’m very happy to be with you today to present some information that will make your child’s life less frustrating and your whole family’s life more peaceful. It will take some time and teamwork but can have life-long results. By the end of our talk, you’ll have a better understanding of executive functions, your child’s abilities, and your role in helping them become more independent and successful.
Master’s Project/Thesis on Supporting Student’s EF at home
Son diagnosed at 9 with TS and other comorbid conditions
Michigan TAA volunteer for 17 years
15+ years General Ed, Intervention, & Special Ed Teacher
Currently teaching high school students with autism
EF Consultant - systems for struggling students and families
Goals for Today

I can identify the appropriate EF level of my child.

I can set up an appropriate hub system in my home.

I can motivate my child to use that system.
What is Executive Function?

According to the Merriam-Webster Dictionary, executive functions are “The group of complex mental processes and cognitive abilities (such as working memory, impulse inhibition, and reasoning) that control the skills (such as organizing tasks, remembering details, managing time, and solving problems) required for goal-directed behavior,” however, there is no one agreed upon definition.

McCloskey Model of Executive Functions

I. Self Control: Self-Activation

- Perceive
- Initiate
- Focus Select
- Sense/Perception
- Cognition
- Emotion
- Action
- Sensation/Perception
- Cognition
- Emotion
- Action
- Awaken, Attend

II. Self Control: Self-Regulation

- Perceive
- Modulate
- Hold
- Interrupt Stop
- Focus Select
- Inhibit
- Manipulate
- Shift Flexible
- Foresee Plan (Short Term)
- Organize
- Balance
- Time
- Execute (Behavior Syntax)
- Monitor Check
- Sustain
- Correct

III. Self Control: Self-Control

- Self Realization
  - Self Awareness
  - Self Analysis
- Self Determination
  - Goal Direction
  - Long-Term Foresight/Planning

IV. Self Generation

- Mind-Body Integration, Sense of Spirit

V. Trans-self Integration

- Sense of Source, Cosmic Consciousness

Figure 1. Adapted from McCloskey, G., Perkins, L. A., & Van Divner, B. (2008).
Healthy Food

- Limit Sugar < 25g a day
  (Staff, 2017)

Exercise

- 60 min a day sports/dance
  (How Much Physical Activity Do Children Need?, 2022)

Mindfulness

- Reduces anxiety & depression
  Helps sleep
  (Mindfulness for Your Health, 2022)

Good Sleep

- Ages 6-12: 9 to 12 hours
- Ages 13-18: 8 to 10 hours
  (Do Your Children Get Enough Sleep? | CDC, n.d.)
Neural Network Diagram of Domains and EFs

Figure 2. Adapted from McCloskey, G., Perkins, L. A., & Van Divner, B. (2008).
“Executive function challenges are often mistaken for disobedience, laziness, defiance, or apathy.”
- Chris Zeigler Dendy (Gerten, 2022)
Student Example & Change of Perception
Russell Barkley

Figure 3. (Leading Edge Seminars, 2020) (Adhd Videos, 0:00 to 2:17, 2014)
<table>
<thead>
<tr>
<th>Age</th>
<th>(Grade)</th>
<th>EF Age</th>
<th>(Grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>(1st grade)</td>
<td>4.2</td>
<td>(Pre-K)</td>
</tr>
<tr>
<td>10</td>
<td>(4th grade)</td>
<td>7</td>
<td>(1st grade)</td>
</tr>
<tr>
<td>12</td>
<td>(6th grade)</td>
<td>8.4</td>
<td>(3rd grade)</td>
</tr>
<tr>
<td>15</td>
<td>(9th grade)</td>
<td>10.5</td>
<td>(4th grade)</td>
</tr>
<tr>
<td>18</td>
<td>(12th grade)</td>
<td>12.6</td>
<td>(6th grade)</td>
</tr>
<tr>
<td>21</td>
<td>(College Jr.)</td>
<td>14.7</td>
<td>(9th grade)</td>
</tr>
<tr>
<td>24</td>
<td>(Adult)</td>
<td>16.8</td>
<td>(12th grade)</td>
</tr>
</tbody>
</table>

Table 1. (Leading Edge Seminars, 2020)
Fundamental Supports

Externalize information to take the load off executive processes: break down large tasks, use visuals.

Externally represent time: visual timers, phone alarms, 5 minute warnings.

Explicitly teach necessary skills where they will be used: “hubs” in the home and school environments.

External rewards: breaks, snacks and larger rewards upon task completion.

(Leading Edge Seminars, 2020)
“The best way to strengthen executive function skills, at any age, is through practice!” (A Guide to Executive Function - Center on the Developing Child at Harvard University, 2019)
Hub System at Home
The Process for Each Hub

1. Analyze Each Activity & Hub
2. Create and Place Visuals
3. Teach Everyone Steps Together
4. Supervise Until Mastered
5. Reward Effort
**Basic concepts** like in, on, over, next to, between, etc. must be understood before someone can be expected to follow directions. Make sure all caregivers use the same vocabulary to improve children’s learning.

**Scratch Garden Prepositions 1, 2 & 3**

(Scratch Garden, 2016)
# Task Analysis: Kitchen/Homework Hub

## What needs to be done?  
**Break down of task** (how, where)  
**How much time?**  
**Visual Support**

### Take off shoes
1. **Take off** shoes with two hands  
2. Place shoes **in** closet **on** orange tape  
2 min  
Orange tape in closet

### Hang up coat
1. Hold by hood with two hands  
2. Hang up on **1st hook, next to** the door  
3. **Pull out sleeves** if inside coat  
1 min  
Color code or label hook

### Place backpack on table
1. **Gently**, with two hands, place backpack **on** kitchen table  
2. **Unzip** it and **open** it up  
2 min  
Placemat for backpack placement

### Take lunch box to sink
1. Walk lunch box to the sink  
2. Lay it to the **left** of the sink  
3. **Unzip** it and take out garbage  
4. Throw garbage away in garbage can  
2 min  
Mark space to lay lunch box

(Clean Clear Designs, 2023)
## Task Analysis: Kitchen/Homework Hub

<table>
<thead>
<tr>
<th>Task</th>
<th>Steps</th>
<th>Time</th>
<th>Notes</th>
</tr>
</thead>
</table>
| **Put planner/binder on table** | 1. Take out planner from backpack  
2. Open planner to today's date                                         | 2 min  | Move sticky note next to assignment                                   |
| **Get out homework and set up materials** | 1. Look at planner and take out homework  
2. Take out pencil case  
3. Check to see if pencils need sharpening  
4. Check to see if you have an eraser  
5. Get out your calculator                                        | 2 min  | Tri-fold board with homework resources in homework area               |
| **Take out old papers and materials** | 1. Take out permission slips, old papers, and materials for parents to look at  
2. Put them in the basket                                              | 1 min  | Basket for adults to check                                            |
| **Hang up backpack**          | 1. With two hands, hang up backpack on hook near door                  | 1 min  | Color code or label hook                                              |
| **Go to bathroom/wash hands** | 1. Go to the bathroom  
2. Close the lid  
3. Flush the toilet  
4. Wash your hands                                                      | 5 min  | Toileting routine and/or washing hands visuals                        |
## Task Analysis: Kitchen/Homework Hub

<table>
<thead>
<tr>
<th>Have a snack</th>
<th>15 min</th>
<th>Visual timer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Choose</strong> healthy snack</td>
<td></td>
<td>Fill line marked with tape</td>
</tr>
<tr>
<td>2. Walk it to the table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Get a cup</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Fill it 2/3s with water <em>(line on cup)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. <strong>Sit down</strong> <em>(where)</em> to eat and drink</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free time</td>
<td>30 min</td>
<td>Visual choice board</td>
</tr>
<tr>
<td>1. Choose something fun for 30 minutes</td>
<td></td>
<td>Visual timer</td>
</tr>
<tr>
<td>Do homework or reading</td>
<td>15 min</td>
<td>Visual timer set for 15 minutes at a time</td>
</tr>
<tr>
<td>1. <strong>Sit down or stand</strong> <em>(where)</em> in homework spot</td>
<td></td>
<td>Sticky notes, fold paper, highlighters</td>
</tr>
<tr>
<td>2. Complete homework in <strong>15 minute</strong> chunks <em>(adult support in immediate area)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 minute break</td>
<td>5 min</td>
<td>Visual timer set for 5 minutes</td>
</tr>
<tr>
<td>1. Movement break of any kind</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult checks</td>
<td>10 min</td>
<td></td>
</tr>
<tr>
<td>1. Go over planner and finished homework with an adult</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Repeat as many times as needed*
2. Create & Place Visuals

- Orange tape for placement of shoes in closet
- Color code or label hook
- Placemat for backpack placement
- Mark space to lay lunch box
2. Create & Place Visuals

- Move sticky notes under each assignment
- Tri-fold board with homework resources
- Basket for adults to check
- Toileting and washing hands mini-routines

(Melissa, 2019)
2. Create & Place Visuals

- Fill line on cup marked with tape
- Visual choice board
- Visual timer set 15 min at a time
- Sticky notes, fold paper, highlighters

3. **TEST** : **Teach Everyone Steps Together**

### Check Boxes

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</tr>
<tr>
<td>Have a snack</td>
<td></td>
</tr>
</tbody>
</table>

### Velcro

<table>
<thead>
<tr>
<th>To Do</th>
<th>Done</th>
<th>preferred</th>
<th>non-preferred</th>
</tr>
</thead>
<tbody>
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We use common vocabulary and expectations!
We’re working together and being really consistent!

We’re all getting better about being intentional.

We’re good at this Independence Facilitator stuff!
5. Reward Effort

I love popcorn! I’m glad I tried my best!

I’m SO glad that everyone worked together this week to get all their stars!

Yum! Me too!

I’m glad we came to my favorite park!
I can identify the appropriate EF level of my child.

I can set up an appropriate hub system in my home.

I can motivate my child to use that system.
Executive Function Reads

- Late, Lost, and Unprepared
- Smart but Scattered
- Executive Functions
- Promoting Executive Function in the Classroom
- Coaching Students with Executive Skills Challenges

Joyce Cooper-Kahn, Ph.D. & Laurie Dittzel, Ph.D.
Russell A. Barkley
Lynn Meltzer
Any questions?

Be an Independence Facilitator!

Kathleen Downing
Kathleen@cleancleardesigns.com

Consistency

Practice Practice Practice

Teamwork

30%
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<td>min</td>
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References


Adhd Videos. (2014, August 22). 30 Essential Ideas you should know about ADHD, 7B The 30% Rule, 4 Components for Effective Treatment [Video]. YouTube. https://www.youtube.com/watch?v=4OVS16Abo80


References

Executive Functions: What They Are, How They Work, and Why They Evolved: 9781462545933: Medicine & Health Science Books


References

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https://leadingedgeseminars.org/speaker/russell-barkley/


Smart but Scattered: The Revolutionary “Executive Skills” Approach to Helping Kids Reach Their Potential: 8601200652819: Medicine & Health Science Books @ Amazon.com. (n.d.).

https://www.amazon.com/Smart-but-Scattered-Revolutionary-Executive/dp/1593854455/ref=sr_1_1?crid=BLYRI383UASW&keywords=smart+but+scattered+book&qid=1683768241&sprefix=smart+but+%2Caps%2C122&sr=8-1

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