Organized and Engaged

Simple and Effective Strategies to Support Executive Function

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Table of Contents

Introduction

Hello, early childhood educators!

Do you have children in your classroom who have difficulty remembering the rules, gathering their materials independently, or completing activities in a timely manner? Do you work with children who find it hard to follow and remember instructions so they can complete activities on their own? These children may be struggling with executive function.

The brain is remarkable. It is able to store almost infinite amounts of information, draw upon this information when needed, attend to what is important while simultaneously filtering out all of the unimportant things going on, and develop and achieve goals (Anderson et al., 2001). This is executive function. Executive function helps people remember what they need to, attend to what they are supposed to, and maintain control over their thoughts and actions so they can be successful in planning, completing, and executing goal-driven activities (Anderson, 2002). Children rely on executive-function skills to learn, play, and socialize throughout the school day.

In the classroom, executive function is responsible for helping children to:

- generate words and ideas,
- switch gears when something disrupts the usual routine,
- socialize and get along with peers,
- follow and remember multistep directions in the correct sequence,
- sustain attention to start and finish projects,
- problem solve, and
- regulate their emotions and behaviors.

Children use executive-function skills when they set a goal, plan steps to reach it, and sustain attention to achieve it. The stronger the executive-function skills, the more successful children will be at learning and socializing.

Children with emerging or poorly developed executive-function skills may struggle in the classroom with sustained attention, impulse control, time management, problem solving, and social interactions. Difficulties with executive function affect children's ability to remember information, multitask, plan and organize, and attend to what they should (Michel and Bimmüller, 2023; Stahl and Pry, 2005; van der Veer, Cantell, Minnaert, and Houwen, 2022). These children may lag behind their peers, abandon projects without finishing them, struggle with friendships, or have difficulty consistently following the rules and routines of the classroom. Consider the following two scenarios.

> During circle time, Liam sits quietly alongside his classmates and listens to his teacher, Mr. Jeffries, describe the seated activity the class will work on when circle time ends. After he's finished explaining the steps children will engage in to complete the activity, Mr. Jeffries dismisses the class to their seats. Liam quietly transitions to his seat and sits down. While the other children begin to work on the activity, Liam does not. Instead, he fiddles with his pencil while staring off into space. When Mr. Jeffries approaches him, Liam tells him that he's not sure what he's supposed to be doing. Mr. Jeffries reminds him of the activity and the steps he described earlier. Liam nods his head but still struggles to start working.

> Jayden, a six-year-old kindergartner, always seems to be a step behind his classmates. He often starts his classwork but never finishes it. His desk is disorganized, and he seldom knows where his materials are. One afternoon, his classroom teacher keeps him inside at recess so he can organize his desk. Instead of tidying it up, Jayden sits at his desk fiddling with a pen. When his teacher asks him if he needs help, Jayden asks earnestly, "With what?" His teacher gently replies, "To get your desk cleaned up so you can find what you need when you need to." Jayden shrugs and says, "It's not that bad. I know where everything is."

Jayden struggles with problem-solving and task completion. He also does not realize that having a neat and organized desk might help him work more efficiently. Liam's difficulty with executive function affects his focus and attention, ability to remember and follow directions, and goal-directed behavior.

The good news for Jayden and Liam is that there are many simple yet effective strategies to teach, improve, and support executive-function skills. This book describes these cognitive, behavioral, and sensory strategies; explains when to implement them; and describes how to create an environment that supports all children as they navigate learning, working memory, time management, problem-solving, and impulse control throughout the school day.

How to Use This Book

In a classroom environment that supports executive function, children are better at flexible thinking, self-control, remembering what they need to, and paying attention to what they are supposed to. Children with strong executive-function skills are better at problem-solving, socializing, and completing schoolwork successfully.

Chapter one describes in depth what executive-function skills are. Chapter two defines the important skill of self-regulation and explains how it supports executive functioning. Chapters three through six describe specific sensory, play, and cognitive strategies educators can implement to teach, nurture, and support student's executive functions. Finally, chapter seven explains how to use the strategies described in the previous chapters to support executive functioning throughout the day.

Refer to *Organized and Engaged* often for ideas to help support:

- Flexible thinking
- Transitioning from one activity to the next
- Remaining calm when something disrupts the usual routine

- Social interactions
- Problem solving
- Time management and completing activities in a timely manner
- Sustained attention and focus
- Self-control

Organized and Engaged offers many strategies, activities, and suggestions to help all children develop strong executive-function skills that they can rely on throughout the day as they navigate social interactions, new learning material, and unexpected changes and disruptions.

Let's get started!

Chapter 1:

Executive Function: What It Is and Why It Matters

Executive function is a group of mental skills that includes attentional flexibility, working memory, and inhibitory control. Children rely on these three executive-function skills to learn, play, and socialize throughout the school day as they:

- make transitions,
- take turns,
- learn to understand other people's points of view,
- practice self-control,
- problem solve,
- complete activities in a timely manner,
- remain on task,
- socialize with peers, and
- negotiate conflict.

For example, consider the skills required of children as they transition from home to the classroom. During this time, children participate in an established classroom routine as they remember to place their things in their cubbies, sign in, and wash their hands. Once these steps are complete, they must find something appropriate to engage with that will occupy their time while they wait for class to begin.

Children also utilize their executive-function skills in more complex ways. For example, when children sit still during circle time, they must listen to their teacher while blocking out the unnecessary sights and sounds happening all around them. They have to keep their hands to themselves and refrain from socializing with their peers. Then, they must sustain their attention for the duration of the time. If the teacher gives instructions for the next activity, children must remember what they were just told as they transition to their seats, gather the materials they need to complete the activity, and start working.

People are not born with executive functions. These skills develop and improve with time and practice. From preschool through first grade, children's executive-function abilities improve exponentially as they grow and mature (Michel and Bimmüller, 2023; Montroy et al., 2016). Some children quickly develop strong executive-function skills, while others struggle. The encouraging news is that it is possible to improve the executive functions of struggling children by employing simple yet effective classroom strategies and supports throughout the school day. When attentional flexibility, working memory, and inhibitory control are practiced and talked about in the school setting, everyone benefits.

To improve executive-function skills in the classroom, it is important to understand the three components of executive function:

- Attentional flexibility
- Working memory
- Inhibitory control

Attentional Flexibility

Attentional flexibility is the ability to switch focus from one person, task, or activity to another in response to a change in the situation. Children with age-appropriate attentional flexibility are able to pay attention to whom or what they are supposed to, while ignoring the irrelevant visual and auditory information around them. They can remain flexible when something, such as a fire alarm, a spilled drink, or an abrupt change to the routine, requires them to shift their attention to something else.

Children with strong attentional flexibility skills are better at paying attention to what they are supposed to, filtering out distractions, reacting well to disruptions to the normal routine, playing in new ways, and problem solving.

Of course, rules and routines are important in all early childhood classrooms, but disruptions are inevitable. Children need to be able to adapt to unexpected changes to the usual routine, for example, when it's too cold to go outside and recess must happen indoors, a good friend is absent from school, a favorite toy is missing, or a classmate changes the way they play a game.

> Alonzo arrives at preschool only to find that his three best friends are absent. Each morning, the four of them play together cooperatively in the building and construction center. Alonzo enters this space and tries to play on his own but realizes it isn't as fun without his friends. He looks around the room and sees other children playing at the sensory table. He joins the group and begins to mix, scoop, and pour, clearly enjoying his time.

Alonzo demonstrates good attentional flexibility when he switches gears and plays with a different group of children in a different area of the classroom with no difficulty. Attentional flexibility is responsible for filtering, task switching, and flexible thinking.

Filtering

Filtering is the ability to recognize the difference between important and irrelevant information. This allows children to filter out incoming information that is not important to them. In the classroom setting, these are typically visual and auditory distractions, such as a people passing by in the hallway, conversations the child isn't part of, activities going on outside that the child might observe through a window, fans spinning, or heaters clicking on and off. Not only does the brain need to filter out this extraneous information, but it must also remain alert to incoming

information that may be important, such as a fire alarm or a surprise visitor to the classroom.

Children who struggle with filtering may have difficulty concentrating in a noisy classroom. They may experience fatigue or give up on an activity because it is hard for them to focus on one thing. Instead, they expend mental energy focusing on everything at once: the visual distractions, sounds and conversations occurring throughout the classroom, and the activity they should be working on.

Task Switching

Task switching is the unconscious shifting of attention from one activity to another. It also refers to the ability to switch the requirements of a task based on changing rules and requirements. For example, sorting is a common preschool activity that requires children to group objects based on a common feature, such as color, shape, or size. Task switching would occur when the teacher has a child sort objects based on color, re-sort them based on size, and sort them based on color again. For some children, switching focus to complete a task is simple. They are able to refocus their attention on the requirements and complete the activity successfully. For others, task switching can be a difficult challenge that confuses and frustrates them.

Flexible Thinking

Flexible thinking is a skill that helps people look at situations in different ways, find new solutions to solve problems, and shift gears when what is supposed to happen doesn't. Children who have no trouble adjusting to change are flexible thinkers. They easily adapt to different situations, such as adjustments to the school schedule or a sudden change in plans. Flexible thinking allows for adaptability throughout the school day.

Inflexible thinking is a maladaptive pattern that has a negative effect on children's success both academically and socially. Even with a predictable classroom schedule and routines, the school day constantly changes, and children encounter situations that require flexible thinking. Those who

struggle with flexible thinking, as Kelsey does in the following example, are rigid in their thoughts and actions, which can have a negative impact on social interactions, play skills, and problem-solving abilities.

> Kelsey, a bright four-year-old, runs into her preschool classroom, excited to play in the kitchen area as she does every morning. When she gets to the pretend-play area, she discovers that the kitchen is missing. She looks around the classroom and sees her friends are busy doing other things. Some are building with blocks, while others merrily play dress-up. Kelsey stands in the middle of the room feeling frustrated that she cannot play the game she always does when she transitions from home to school. Her teacher explains to Kelsey that the toy kitchen broke and will not be back until tomorrow because it is being repaired. She suggests Kelsey play somewhere else, but Kelsey remains where she is, exclaiming, "I want to play with the kitchen like I always do!"

Kelsey is struggling with flexible thinking. She faces an unexpected change to her morning routine and, rather than shifting her attention as her friends did, remains fixed in her thinking.

When children like Kelsey struggle with attentional flexibility, they may seem rigid in their thoughts. They need the routine to stay the same, resist trying new games or activities, and may have difficulty with problem solving. Children who are not flexible thinkers may become overly frustrated when they transition from one activity to the next, when classmates don't follow the rules, or when friends suggest new ways to play a game.

Working Memory

Working memory, the second component of executive function, is a type of short-term memory that helps people hold onto important information long enough to use it. Different from long-term memory, working memory refers to the small amount of important information children need to retain to successfully engage in cognitive tasks and classroom activities. Working memory is like a mental to-do list, with the information stored

only as long as it is useful. Once it is no longer needed, the to-do list disappears, freeing up space so that the child has the capacity to take in new and important information. For example, when you stop by the store to pick up a few things you need, you are using working memory to store those items and remember to purchase them. Once they've been purchased, there's no reason for you to remember the list, so you forget the information.

Working memory is responsible for:

- recalling and following instructions;
- carrying out instructions in the correct order;
- remembering where school items such as glue sticks, markers, and extra paper are located;
- recalling details during pretend-play activities;
- retelling a story; and
- socializing.

Children who have strong working-memory skills are better at recalling and following directions, organization, problem solving, and starting and finishing tasks and activities.

Children use this executive-function skill throughout the school day to learn and follow directions. Working memory helps them remember what they need to be paying attention to and then use that information to complete tasks and activities. When children struggle with working memory, they may be unable to keep track of what they are supposed to do. They may struggle to complete a task, abandoning it partway through because they have forgotten the rest of the steps required. Children with weak working-memory skills may:

- seem disorganized,
- have difficulty remembering what they want to say when called on to answer a question,

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Executive Function Is Key

Do some children in your classroom have difficulty remembering the rules, gathering their materials independently, or completing activities? Do some find it hard to follow and remember instructions? These children may be struggling with executive function.

With stronger executive-function skills, children are better able to:

- Follow and remember a sequence of directions
- Work on projects from start to finish
- Develop problem-solving and organization skills
- Self-monitor and regulate their emotions and behaviors

Organized and Engaged: Simple and Effective Strategies to Support Executive Function explains what executive function is, why it matters, and how it differs from self-regulation. Discover strategies, activities, and play-based ideas to support children's classroom success.

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