Building brain power: Executive function and young children

Young children’s brains are constantly working to take in and process information. Caring adults who encourage and provide opportunities for children to problem solve, form friendships and succeed at learning tasks play a central role in building brain power in children!

So how do we do this? One way is to help children strengthen their executive function skills. Executive function skills are a group of skills critical for lifelong learning. They are essential in helping children develop strong cognitive skills, and social and emotional skills. They are the foundation for early school achievement and for building positive relationships with others. Children who develop strong executive function are better able to form and maintain positive social connections with others, problem solve, think more flexibly and persist at tasks.

What are executive function (EF) skills?

The three areas of EF skills include working memory, inhibitory control and cognitive flexibility.

**Working memory** refers to the ability to hold onto information so that one can act on that information at a later time. Working memory helps children remember rules of a game or steps in a process. It also helps children in social interactions with others. For example, working memory helps children to remember their roles and the scenes or “stories” that are played out as they pretend play.

**Inhibitory control** refers to the ability to control impulses. Inhibitory control helps children focus attention and is the foundation for better self-regulation. For example, a child may become frustrated when a playmate doesn’t share a toy. Instead of hitting or kicking the playmate, the child is able to stop and think before acting. When children develop inhibitory control, it helps them to stay in control.

**Cognitive flexibility** refers to the ability to shift and to also maintain attention. Children are better able to move within and between tasks when they develop cognitive flexibility. Children develop cognitive flexibility when they are able to shift problem-solving strategies during play activities. For example, a child decides to build a tower by stacking blocks one on top of another. When the tower continues to fall, the child may try another strategy by building a wider support base and then stacking blocks.
Support children’s development: What you can do

Building strong relationships with children is the key to success! When caregivers talk with children throughout the day, and encourage children’s effort and problem solving, they support development of executive function skills.

Engage with children and support children’s effort during play and learning tasks. Help build a sense of “I can do it!” in children. For example, when a child is learning how to stack blocks or build a block structure, a caregiver might say: “You are really working hard to get those small red blocks on top of the big yellow block!” Encouraging and reinforcing persistence helps children to develop the ability to focus and maintain their attention.

Model problem solving, providing support around challenging tasks and when problems arise during the day. For example, a caregiver might say, “It looks like there might be a problem deciding who gets to play with the blue train. Let’s take a deep breath and calm down. Now, we can talk about how you’re feeling, what the problem is and how to solve it.” The first and most difficult step for children in problem solving is helping them stay in control so they can focus their attention on solutions. Showing children how to calm down and problem solve will help them do the same.

Provide support and repeated opportunities for children to practice new skills in a variety of settings and with a variety of materials. For example, a caregiver might say, “You and Javier worked hard and figured out how to put that big floor puzzle together! Nora and I are figuring out how to build a fort with the connecting blocks. Would you like to help us?” Providing a wide variety of learning opportunities and support around those opportunities “boosts” children’s experiences as they think about and solve problems during play.

Connect with children by talking about things that interest them as they play, create and discover. Ask questions and talk with children about what children may be observing, why they think something happened the way it did and how they think they might solve a problem. Asking more what, why and how questions helps build thinking skills and cognitive flexibility.

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Support children’s learning: What you can do

Caregivers who are intentional in planning and providing children with varied activities and support throughout the day play a key role in helping children develop executive function skills.

- **Provide many opportunities and support for pretend play.**

  Pretend play helps children develop working memory. For example, children need to remember their role, the details of the play scenario and what props represent various items.

  Pretend play helps children develop cognitive flexibility. For example, children have to think through different perspectives as they shift roles in play and change the rules of play.

  Pretend play helps children develop inhibitory control. For example, children may have to think about solutions to common problems like how to share two dolls when there are three children involved in play. Children need to use self-regulation to stay in control as they think through possible solutions.

- **Talk with children during pretend play and at other times of the day, asking questions and supporting recall of details.** When children talk about an event, tell a story, or act out a scene, and talk about what happened first, next and last, they are building working memory skills. For example, a child has to recall details about his trip to grandma’s house in order to talk with a caregiver about that event. Adults who support this kind of narrative language development support development of working memory skills.

- **Gradually increase the difficulty of tasks over time.** For example, after a child has mastered a seven-piece puzzle, offer puzzles with more pieces. Increase the difficulty over time as the child masters each level of challenge. This allows children to develop new skills and to strengthen those skills over time. Staying within a child’s “comfort zone” of learning will help children as they are developing new skills.

- **Provide opportunities for daily physical activity.** An active body helps build an active mind!

Children who develop executive function skills are better able to focus their attention, problem-solve, and control impulses as they grow and develop. Caregivers who understand the importance of these skills can play a key role in children’s development by supporting positive social interactions and specific executive function skill development.

References:


