

EXECUTIVE FUNCTIONING SKILLS: CRITICAL TO WHOLE CHILD DEVELOPMENT

Donald A. Murk, PhD
Messiah College
dmurk@messiah.edu

Executive functions underlie a child's ability to

Focus on complicated problems.

- Control impulses.
- Set goals and work toward achieving them.
- Get along with others.

Articles

- <http://www.vision.org/visionmedia/family-relationships/child-development-self-control/37805.aspx>
- <http://www.vision.org/visionmedia/family-relationships/children-and-self-esteem/34763.aspx>

- One definition for the sense of wonder is being in a state in which you want to learn more about something. Children are born with this natural capability to take in their world.
- This allows the zero to five year old to be in a constant state of newness and learning.

Wonder

- verb (used without object) to think or speculate curiously: to wonder about the origin of the solar system.
- verb (used with object) to speculate curiously or be curious about; be curious to know: to wonder what happened.
- Noun the emotion excited by what is strange and surprising; a feeling of surprised or puzzled interest, sometimes tinged with admiration: He felt wonder at seeing the Grand Canyon.

Scripture

- Blessed be the Lord God, the God of Israel, who alone works wonders. And blessed be His glorious name forever; and may the whole earth be filled with His glory. Amen and Amen. – ***Psalm 72:18-19***

- Jesus Himself performed many mighty signs and wonders among the people.
 - He walked on water. Matthew 14:22-33 (Mark 6:42-52; John 6:16-21)
 - He fed the multitudes with a few loaves and fishes. Matthew 16:8-10
 - He told the storm to cease, and it became silent. Mark 6:45-52

Psalm 40:5

- [New International Version](#)

Many, LORD my God, are the wonders you have done, the things you planned for us.

None can compare with you; were I to speak and tell of your deeds, they would be too many to declare.

- Executive function skills and the skills of wondering: observation, classification, and communication, result in the abilities and dispositions children need to succeed in school and life.
- It is our educational responsibility to empower our students by providing these opportunities, thus developing the whole child.

- The question is, how will we provide the structure for developing executive function skills while also creating a growth promoting environment with open space for playing, dreaming, imagining, exploring, and wondering?

- Executive function and self-regulation skills are the mental processes that enable us to plan, focus attention, remember instructions, and juggle multiple tasks successfully.
- When children have opportunities to develop executive function and self-regulation skills, individuals and society experience lifelong benefits. These skills are crucial for learning and development. They also enable positive behavior and allow us to make healthy choices for ourselves and our families.

- Executive function and self-regulation skills depend on three types of brain function: working memory, mental flexibility, and self-control. These functions are highly interrelated, and the successful application of executive function skills requires them to operate in coordination with each other.

- Working memory governs our ability to retain and manipulate distinct pieces of information over short periods of time.
- Mental flexibility helps us to sustain or shift attention in response to different demands or to apply different rules in different settings.
- Self-control enables us to set priorities and resist impulsive actions or responses.

- Children aren't born with these skills—they are born with the potential to develop them. If children do not get what they need from their relationships with adults and the conditions in their environments—or (worse) if those influences are sources of [toxic stress](#)—their skill development can be seriously delayed or impaired. Adverse environments resulting from [neglect](#), abuse, and/or violence may expose children to toxic stress, which disrupts [brain architecture](#) and impairs the development of executive function.

8 Key Executive Functions

- Skill 1: Impulse Control

What it means: Impulse control helps your child think before acting.

How it looks: Kids with weak impulse control might blurt out inappropriate things. They're also more likely to engage in risky behavior.

Skill 2: Emotional Control

- What it means: Emotional control helps your child keep his feelings in check.
How it looks: Kids with weak emotional control often overreact. They can have trouble dealing with criticism and regrouping when something goes wrong.

Skill 3: Flexible Thinking

- What it means: Flexible thinking allows your child to adjust to the unexpected.
How it looks: Kids with “rigid” thinking don’t roll with the punches. They might get frustrated if asked to think about something from a different angle.

Skill 4: Working Memory

- What it means: Working memory helps your child keep key information in mind.
How it looks: Kids with weak working memory have trouble remembering directions—even if they've taken notes or you've repeated them several times.

Skill 5: Self-Monitoring

- What it means: Self-monitoring allows your child to evaluate how he's doing.
How it looks: Kids with weak self-monitoring skills may be surprised by a bad grade or negative feedback.

Skill 6: Planning and Prioritizing

- What it means: Planning and prioritizing help your child decide on a goal and a plan to meet it.

How it looks: Kids with weak planning and prioritizing skills may not know which parts of a project are most important.

Skill 7: Task Initiation

- What it means: Task initiation helps your child take action and get started.

How it looks: Kids who have weak task initiation skills may freeze up because they have no idea where to begin.

Skill 8: Organization

- What it means: Organization lets your child keep track of things physically and mentally. How it looks: Kids with weak organization skills can lose their train of thought—as well as their cell phone and homework.

- There is growing evidence that self-regulation can be taught in the classroom (Blair & Razza 2007; Diamond et al.2007).
- **Teach self-regulation to all children, not just those thought to have problems.**
- **Create opportunities for children to practice the rules of a certain behavior and to apply those rules in new situations.**

- **Offer children visual and tangible reminders about self-regulation.**
- **Make play and games important parts of the curriculum.**

- **Recognize that children's reasoning skills are just beginning to develop.**
- **Think of young children's conflicts as *mistaken behaviors*, not misbehaviors.**
- **When children have strong conflicts, adults work to teach rather than punish.**
- **Teach, don't punish. Conflicts do have consequences**

Building executive function in your students.

- Provide Opportunities to Apply Learning
- Introduce Activities to Support Developing Executive Function
 - Make predictions
 - Solve a variety of types of problems
 - Pursue inquiries
 - Analyze what information they need
 - Consider how to acquire any skills or knowledge they lack to reach desirable goals

- Model Higher Thinking Skills
 - *Judgment*
 - *Prioritizing*
 - *Setting Goals, Providing Self-feedback and Monitoring Progress*

- *Prior Knowledge Activation and Transfer Opportunities*
- *Metacognition*

- **When children have had opportunities to develop executive function and self-regulation skills successfully, both individuals and society experience lifelong benefits.**

School Achievement

Positive Behaviors

Good Health

Successful Work—

- **The critical factors in developing a strong foundation for these essential skills are children's relationships, the activities they have opportunities to engage in, and the places in which they live, learn, and play.**

- **If children do not get what they need from their relationships with adults and the conditions in their environments—or (worse) if those influences are sources of toxic stress— their skill development can be seriously delayed or impaired.**

Psalm 40:5

- [New International Version](#)

Many, LORD my God, are the wonders you have done, the things you planned for us.

None can compare with you; were I to speak and tell of your deeds, they would be too many to declare.

Kindergarten Readiness

- Being curious and enthusiastic about learning.
- Using words to communicate needs and wants.
- Being able to follow directions.
- Being able to take turns and to share.
-

- Being sensitive to other children's feelings.
- Being able to sit still and pay attention.
- Not being disruptive in class.
- Being able to focus and finish tasks.

What Teachers Can Do

- Maintaining a daily routine with activities at predictable times (e.g., circle time, followed by free play at activity centers, snack, outside play, lunch, nap, etc.).
- Having an orderly environment with defined spaces, storage for toys and activity centers for different types of play.

- Providing opportunity for child-led activities, such as free choice in centers or imaginative play, with flexibility to allow time to complete activities.
- Setting expectations for gradually longer “time on task” as children get older.

- Setting clear rules and expectations for behavior.
- Giving children age-appropriate jobs such as cleaning up, hanging up their own coat, being the line leader or serving their own food.

- Promoting empathy and perspective-taking in resolving conflicts. (“How did Jenny feel when that happened?”)
- Planning games and songs that require turn-taking, memory, sequencing, and stop-and-start, such as Duck-Duck-Goose, Simon Says, Memory, “I’m going on a picnic,” “roll-call” songs, Candyland, etc.

- Involving children in story time discussions about “why?” “what if?” and “what then?”
- ☐ Starting and ending the day in a “plan-do-review” routine. Children describe what they will do that day and reflect on their day at the end.

- Supporting learning about how to join an activity that has already started and how to get along by planning activities for small groups (e.g., three children at the sand table, five in the house area).

A caregiver using some of the strategies above might:



- Give a five-minute advance warning to children before a play period ends.
- Use a familiar cue such as a song or call-out that children must respond to (“Day-o!”) .
- Have a set routine for lining up and going inside.

Teachers

- Teachers understand child development and the importance of executive function for school readiness.
- They plan daily activities based on the program's curriculum and the individual needs of children.

- They use successful classroom management strategies to promote age-appropriate behaviors and support executive function for children at different stages of development.