

# Introduction

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Executive function skills enable us to navigate through everyday life by helping us organize, plan, and manage life tasks. They are the skills necessary to execute tasks. Executive function skills can be defined as frontal lobe functioning responsible for higher-level cognitive abilities and cognitive control. Developmentally, the area in the brain that controls executive functions usually doesn't achieve full maturity until a person's mid-twenties. For people with developmental delays, maturity may take an additional decade (Cooper-Kahn & Dietzel, 2008).

Different books and articles vary in how they describe executive functions. The definitions and explanations we like best are from a lecture given by Jane Yakel, M.S., CCC-SLP, of Palo Alto, California, and from *Smart but Scattered* by Peg Dawson and Richard Guare (2009).

Yakel (lecture, April 20, 2010) explains that executive functions monitor and are responsible for:

- Initiating
- Planning/organizing
- Self-monitoring feedback (learning from mistakes)
- Anticipating outcomes/consequences
- Thinking abstractly
- Goal setting
- Motivating
- Self-regulating
- Perceiving time
- Internal ordering
- Regulating emotions
- Assuring non-egocentric perspectives

Dawson and Guare (2009, p. 13) explain that:

*Executive skills are, in fact, what your child needs to make any of your hopes and dreams for his future—or his own hopes and dreams—come true. By late adolescence, our children must meet one fundamental condition—they must function with a reasonable degree of independence.*

Dawson and Guare (2009) go on to discuss a scheme that consists of 11 executive function skills that can be divided into the two dimensions of cognition and behavior.

## 1. Executive Skills Involving Cognition—Thinking

- Working memory
- Planning/prioritization
- Organization
- Time management
- Metacognition

## 2. Executive Skills Involving Behavior—Doing

- Response inhibition
- Emotional control
- Sustained attention
- Task initiation
- Goal-directed persistence
- Flexibility

Like language skills, these skills can be organized developmentally beginning in infancy and developing over time. In the first year of life, response inhibition, working memory, emotional control, and attention all begin to develop. In the next year, from 12–24 months of age, planning and flexibility emerge. The remaining five skills—task initiation, goal-directed persistence, organization, time management, and metacognition—develop later, emerging during the preschool to early elementary school years. Once these skills emerge, they develop over a long period of time since the frontal lobes take years, even decades, to mature. In *Executive Skills in Children and Adolescents: A Practical Guide to Assessment and Intervention*, Dawson and Guare (2004) point out that even in an adolescent the lack of planning, time management, and especially inhibition is remarkable.

Again, like language, the development of executive function skills along a continuum can help shed light on how to approach teaching these skills. For example, if a student has weaknesses in response inhibition, working memory, planning, and task initiation, do not target task initiation first because it is a later developing skill. Instead, target response inhibition and working memory first because they emerge in the first year of life. Next, target planning, followed by task initiation.

So how does intelligence factor into this mix? Whereas intelligence quotient (IQ) defines how much a person knows, executive functions determine if he will do something and how he will go about it (D. Turner-Campbell, lecture, May 12, 2010). An intellectually gifted student with weak executive function skills could present as disorganized, unmotivated, inattentive, and unprepared. His brilliance would be hard to appreciate. Alternately, a person with a low IQ score may be able to manage everyday schedules and routines, functioning better than expected as a result of relative strengths in some executive function skills.

IQ is like the engine of a car; it has lots of power, but it's useless unless it's controlled by a driver. The driver of a car controls the ignition, accelerator, steering wheel, turn signals, and brakes. Thus, the driver starts and stops the car, determines how fast and in what direction it goes, and monitors the surrounding events to adjust his behavior accordingly. A person's executive function skills, that plan and organize everything he does, are to the brain what a driver is to a car.

*Executive Functions Training Elementary* is for students in grades 1-6 who are not performing up to their potential in school and need help with executive function skills. These students have grades and behavior that are not commensurate with their capability, or their grades are not commensurate with their IQ. We created fun, functional activities using classroom-relevant topics (e.g., social studies, language arts, science) to help students learn the skills they need to plan, organize, and complete tasks. We used a multi-modality approach to help encourage learning in different ways.

This book was created with parents in mind, offering strategies and exercises that can be done at home. All of the activities require minimal preparation and relate to classroom work. The strategies can also be applied to homework, textbooks, and other school-related work.

*Executive Functions Training Elementary* is divided into two parts. Part I focuses on the executive function skills related to cognition. Each unit contains general strategies and therapy strategies to improve the targeted skill. There are five exercises for each therapy strategy. The exercises, as well as the items within each exercise, are arranged in a hierarchy from easiest to most difficult. Choose appropriate exercises depending on your student's abilities.

Part II focuses on executive function skills related to behavior. Only general strategies are included for these skills. Typically a psychologist or a psychiatrist is better equipped to provide therapy for students with weaknesses in these areas.

*Executive Functions Training Elementary* addresses these skills:

### ■ Executive Skills Involving Cognition—Thinking

- Working Memory
- Time Management
- Planning & Organization
- Flexible Thinking
- Self-Monitoring

*Note: Flexible thinking is primarily a behavioral skill; however, we included exercises to reinforce flexible thinking that pertains to language skills and general strategies to promote flexible thinking that affects behavior.*

### ■ Executive Skills Involving Behavior—Doing

- Inhibition
- Emotional Control
- Attention
- Initiation