

Preface

Education should inspire students to turn their full intelligence on a problem, to think creatively, originally, and constructively instead of defensively, and to carry these new ways of thinking into new situations.

—HOLT (1964, p. 27)

Planning a vacation, shopping for a week's groceries at the supermarket, playing on a soccer team, and completing a school project are all tasks that depend on executive function (EF) processes such as goal setting, planning, organizing, prioritizing, memorizing, initiating, shifting, and self-monitoring. These EF processes are also essential for performance in schools and workplaces, which now require individuals to take greater responsibility for their own learning and to organize and synthesize an enormous and increasingly complex body of information that is available online.

Less than a decade after the first edition of this book was published, the pace, pressure, and expectations in classrooms have increased exponentially across the grades. Even elementary school students are now expected to complete lengthy reading and writing assignments as well as online research for long-term projects, all tasks that rely heavily on EF processes. Students are also expected to become proficient at note taking, studying on their own, and test taking, tasks that require the simultaneous organization and synthesis of many different processes and skills. Academic success is thus dependent on students' ability to plan their time, organize and prioritize materials and information, differentiate main ideas from details, shift approaches flexibly, monitor their own progress, and reflect on their work. Nevertheless, EF processes

are still not taught systematically in schools and are not a focus of the curriculum, which primarily emphasizes competency and proficiency in the three Rs. Furthermore, classroom instruction generally focuses on the content, or *what* of learning, rather than the process, or *how* of learning, and does not foster metacognitive awareness so that students do not develop an understanding of *how* they think and *how* they learn. As a result, a large gap separates the skills and strategies taught in school from the EF processes needed for success in school and in the workplace.

Over the past 10 years, there have been significant advances in research studies focused on EF processes in terms of both theory and practice. This second edition reflects these changes and includes five entirely new chapters: EF processes in the preschool years (Chapter 4); EF processes and reading difficulties in the context of recent functional magnetic resonance imaging (fMRI) research findings (Chapter 8); working memory and reading (Chapter 9); self-regulation and reading comprehension (Chapter 10); and creating strategic classrooms and schools where EF strategies are embedded in the curriculum (Chapter 11). As with the first edition, a major goal of this completely updated volume is to continue to bridge the gap between theory, research, and educational practice and to improve our methods of identifying and teaching students with EF difficulties. The 14 chapters span a broad range of perspectives and include recent research in the neurosciences as well as developmental, cognitive, and educational psychology. Experts in the field discuss a range of theoretical and conceptual approaches to understanding EF processes as well as techniques for treatment and remediation. Authors also focus on the challenges and opportunities that educational professionals face as they assess EF weaknesses in an era of brain-based approaches to diagnosis and standards-based education.

In Part I, the first four chapters provide different conceptualizations of EF processes in the context of the authors' theoretical roots in neurology, cognitive psychology, developmental psychology, and education. In Part II, authors address recent research findings on EF processes and the implications for the assessment and treatment of students with learning and attention differences, nonverbal learning disabilities, and autism spectrum disorder. In Part III, authors focus on EF processes in the content areas. The first three chapters address recent research in working memory and other EF processes and their implications for interventions in reading decoding and reading comprehension. The four chapters that follow address interventions across the content areas, particularly writing and math. Specifically, these chapters focus on the importance of creating classroom-based and school-based approaches to teaching EF processes across the content areas that include strategies for organizing, prioritizing, memorizing, thinking flexibly, and self-monitoring in the

context of academic tasks. The final chapter discusses the importance of universal design in education.

In summary, this book provides a theoretical and research framework for addressing a number of cutting-edge issues, including the following questions, which continue to dominate research and practice:

- How do EF difficulties affect the performance of students with learning difficulties, attention deficit disorders, and autism spectrum disorders?
- How can our improved understanding of EF processes help us to optimize our diagnostic and teaching approaches?
- How can refinements in fMRI techniques and other neuropsychological approaches help to improve our understanding of the role of EF processes in learning?
- How can our current understanding of EF processes help us to refine our approaches to teaching goal setting, organization, cognitive flexibility, working memory, and self-monitoring?
- How do we address EF weaknesses and preserve students' motivation, persistence, and resilience with the current emphasis on higher standards and the Common Core curriculum?

Our hope is that this volume will help teachers to understand the importance of teaching strategies for lifelong learning so that students can perform at the level of their potential and gain an enduring education that defies the observation, attributed to Albert Einstein, that “education is what remains after one has forgotten everything one learned in school.”

REFERENCE

Holt, J. (1964). *How children fail*. New York: Pitman.