Introduction

David A. Sousa

This volume is an overview of the concept of educational neuroscience, featuring excerpts from eleven works by recognized experts. The following is a synopsis of what you will find in each chapter.

PART I. THE DEVELOPING BRAIN

Chapter 1. The Physiology of the Brain

David A. Sousa

Chapter 1 presents an overview of some basic brain structures and their functions in a reader-friendly format and style. It discusses new insights into brain growth and development, such as windows of opportunity, and explains how the brain of today's student has much different expectations of school than the brain of just a decade ago. These modern expectations can pose significant challenges for teachers, and this chapter offers some suggestions on how to deal with them.

Chapter 2. The Child's Brain

Robert Sylwester

Humans are mobile creatures. One daunting challenge facing a toddler's brain is mastering the physiological and cognitive networks that direct movement in all its forms. This intriguing chapter discusses how that process happens and what parents and teachers of young children can do to foster the healthy and robust development of these vital networks.

teaching strategies may be more effective with boys than with girls and vice versa. The chapter also examines how learning disabilities may develop differently in males and females.

Chapter 7. The Special Needs Brain

Eric Jensen

In Chapter 7, we explore the growth and development of the brain's social and academic operating systems. Problems arising in these systems can cause students to have learning difficulties. This chapter offers many suggestions to teachers for helping students build their social skills as well as develop the mindset that can help them overcome academic challenges.

PART III. INSTRUCTIONAL STRATEGIES FOR EVERY BRAIN

Chapter 8. Calming the Brain

Michael A. Scaddan

Stress has a negative impact on learning because it shifts the brain's focus to dealing with the cause of the stress. Chapter 8 suggests proven techniques that teachers can use for lowering stress in students and for raising their motivation to learn.

Chapter 9. Engaging the Brain

Marcia L. Tate

If we expect students to remember what they learn, then the learning must make sense and be relevant. Chapter 9 offers numerous strategies that teachers can use to connect learning to real-world experiences, thus maintaining student interest and increasing retention of learning.

Chapter 10. Focusing the Brain

Marcia L. Tate

Students today are accustomed to constantly interacting with all types of visual media. As a result, visual tools can be powerful instructional devices for capturing students' attention and helping them remember what they learn. Chapter 10 suggests several effective visual organizers that enhance comprehension and the retention of learning.