

---

# *Preface*

*David A. Sousa*

Are you curious about all the fuss over “brain-compatible teaching” and learning? Then this introductory book may be just the one for you. For more than two decades, educators, psychologists, and neuroscientists have been exploring whether any of the incredible amount of new information we have learned about the workings of the human brain could be applied to teaching and learning. Little by little, applications became apparent. Now, a new field of inquiry has been established, called *educational neuroscience* (also referred to as *mind, brain, and education*), specifically dedicated to looking for those research findings that have implications for what we do in schools and classrooms. Already, teachers all over the world are revising their instruction, curriculum, and assessment to reflect this new research.

Teachers and school administrators continue to search for ways to include instructional techniques that are supported by brain research into their practice. Corwin has been involved in this area from the beginning. Corwin editors have sought authors who are able to translate research in neuroscience into meaningful and scientifically based instructional strategies. These authors have produced dozens of popular books on brain research. Some of the books focus on new discoveries in brain growth and development. Others are loaded with brain-friendly strategies for all learners, including those learning to read and to calculate, those with special needs, and those who are gifted.

If you are just beginning to explore brain research and its applications to pedagogy, the large number of publications may seem overwhelming. Hence, this book. It is an intriguing smorgasbord, designed to introduce you to samples of the works of eight respected authors, writing in plain language about the applications of neuroscience in different teaching and learning settings. To make this exploration easier, we have divided the book into three parts. Part I focuses on the developing brain and includes chapters on brain structures, on movement, and on the mysteries of the adolescent brain. Part II looks at the brain in school and includes chapters

on how the brain learns to read and calculate, on differences between the male and female brain, and on understanding some of the social and academic needs of students with learning difficulties. Part III contains valuable and tested instructional strategies for all students. It includes chapters on reducing stress in the classroom and keeping the students' brain engaged, focused, and energized.

Reading through this book will give you an extensive overview of how much we have learned about teaching and learning in recent years, thanks to the advances in neuroscience. It will also provide you with a substantial collection of strategies and techniques that may help your students become more engaged and successful learners. Our hope, too, is that it will tempt you to read more of these authors' works as part of your own professional development plan. Teachers are brain-changers, and knowing more about how the brain learns can only make them more successful at their job.