

EDITORS' NOTES

Most adult educators rely on observation and experience, anecdotal evidence, and philosophical orientation to inform practice. Additional though sometimes conflicting guidance has been available from psychological theories and sociological analysis, which attempt to describe what learning is and how it takes place. Now, however, with the advent of brain imaging we can actually watch the neurophysiology of learning unfold. Not only can we trace the pathways of the brain involved in various learning tasks, but we can also infer which learning environments are most likely to be effective. This volume arises from our desire to make this research more available to colleagues in the field of adult and continuing education.

We have also been deeply affected by our own journeys as adult learners. Both of us went back to college in our middle years to complete long-delayed undergraduate degrees, never imagining that the experience would be life-changing. When we met, years later, we discovered a shared commitment to making this kind of transformative education more widely available for other adult learners. This volume therefore emphasizes ways of teaching and learning that support changes in the brain associated with new perceptions, perspectives, and possibilities.

In the last decade, several studies have been published for nonscientists that explain the inner workings of the brain; some of those authors are represented in this volume. In addition to neurobiological researchers, we have included educators who, in the pursuit of more effective teaching and learning, have contributed to research on how best to change brains. Our volume also benefits from the contributions of clinical psychologists who have established links between improved therapeutic outcomes and current understanding of brain function.

This last observation deserves further clarification. Though they work in different settings (classrooms, therapy offices) and have different intentions (to foster learning, to encourage psychological health), there is notable overlap in what counselors/therapists and educators wish to accomplish. Both groups are concerned with how people think and understand; both also focus on how their client/learners can become more effective in various settings. As is discussed later in this volume, even though adult educators do not act as therapists they need to attend in some degree to the emotional tone of those whom they serve. Similarities and differences between these professional roles are further developed in the chapters that follow.

Although themes of brain function and learning are integrated throughout, the chapters in this volume divide into two sections. The first section

focuses primarily on brain function; the second emphasizes learning. Chapter One provides an overview of the brain and how it works, with particular attention to implications for educators' practice. James Zull, a biochemist and biologist, describes brain architecture and links brain function to Kolb's learning model, which is familiar to many adult educators. Louis Cozolino, a clinical psychologist, and Susan Sprokay discuss in Chapter Two how the mentor-learner relationship has an impact on the "social brain." They extrapolate principles of adult learning and change drawn from the learning and change known to occur during psychotherapy.

Chapters Three and Four explore the significance of childhood trauma on the brain. Bruce Perry, a psychiatrist, expands on how adult learning may be affected by stress-inducing experiences. He also describes how adult educators can recognize and attenuate these negative effects. On the basis of his practice as a psychiatrist and educator, Colin Ross then examines the educational implications of the potential for brain "self-repair," reorganization of neural networks that can not only alleviate earlier trauma but also enhance current potential.

The next five chapters spotlight educators' practice, using current understanding about brain function as a backdrop. In Chapter Five, Pat Wolfe explores the significance of emotions in learning. She also offers neurophysiological support for constructivist approaches. Barry Sheckley and Sandy Bell, in Chapter Six, detail how the brain uses experience as a basis for learning and consciousness and then describe how educators can use this understanding to inform practice.

In Chapter Seven, Geoffrey Caine and Renate Nummela Caine explore current perspectives on constructivism and "executive functions" of the brain. They also describe strategies for engaging adults in more effective learning. Sandra Johnson, in Chapter Eight, expands on the role of the mentor by examining the mentor-learner relationship through the lenses of cognitive neuroscience and social cognitive neuroscience. Finally, in Chapter Nine Kathleen Taylor links brain function to best practices and constructive-development theory, and describes ways to encourage transformational learning outcomes.

Sandra Johnson
Kathleen Taylor
Editors